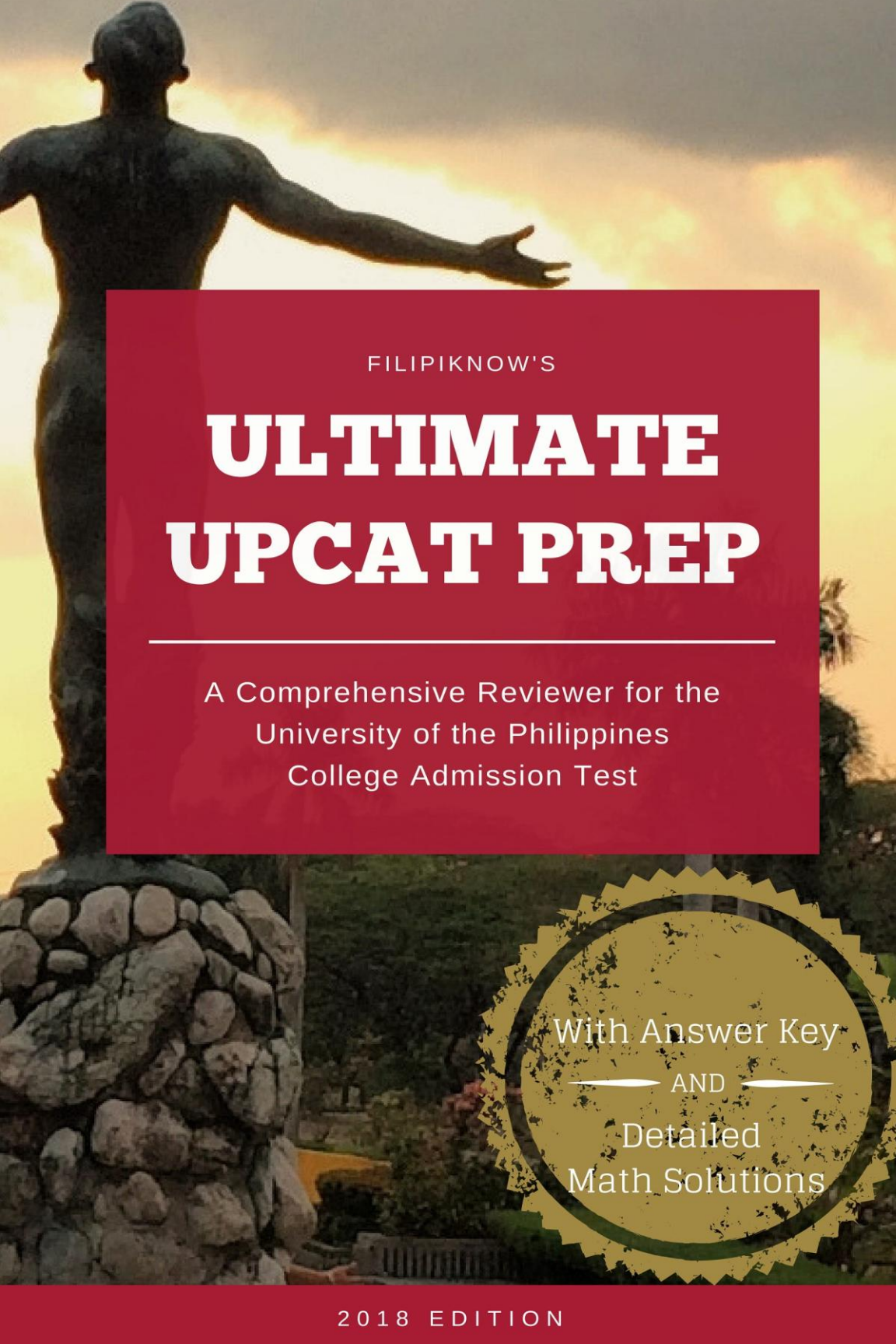

FILIPIKNOW'S

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2018 EDITION

Ultimate UPCAT Prep

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How to Answer Multiple Choice Questions Like A Pro

Between a multiple choice test and an essay exam, most of us would rather choose the former.

Multiple choice tests trick our brains that they're easier to answer. All we have to do is to distinguish the correct answer from the distracters.

However, answering multiple choice exams are not as easy or straightforward as we like them to be, especially if we're dealing with crucial exams like the UPCAT.

The following tips are a perfect supplement to your hard-earned stocked knowledge and can maximize your success in answering any multiple-choice exam.

Be wary of tricks and traps.

Sometimes they're easy to identify but the more subtle ones are what you should watch out for. Don't overanalyze but never trust questions that are too easy either.

Remember, the goal of test makers is to gauge your analytical skills in all subtests. When answering language proficiency exams, for instance, the following traps may lead you to the path of failure if you're not careful:

a. Violation of the rule of "parallel structures."

Example: "Play, eat, and sleeping--these are what my pet dog usually does all day."

Explanation: Parallel structures are used to ensure clarity of statements. According to this principle, words and phrases in a sentence should be consistent in terms of structure and tense.

The example sentence above violates the rule of parallel structures. The first two verbs--play and eat--are in present tense, while the last one--sleeping--is a verb that acts as a noun, otherwise known as a gerund.

To correct the sentence, the gerund should be replaced with a verb form consistent with the other two words, hence:

"**Play, eat, and sleep**--these are what my pet dog usually does all day."

b. Insertion of distracting phrase or clause that clouds subject-verb agreement.

Example: "Many politicians, in their desire to win an election, makes grandiose promises to voters."

Explanation: Always focus on two things: the subject and the verb. Everything else is secondary. In the above example, the subject is "politicians" which is in plural form so the verb must also be plural.

Hence, the correct answer should be "make" instead of "makes."

c. Use of inverted sentence structure.

Example: "In the middle of the forest stands the giant trees considered oldest in the region."

Explanation: Inverted sentences have verbs that come before the subjects instead of the other way around. It's easy to assume there's nothing wrong with this sentence if you don't look closely.

In the sentence above, for example, the verb "stands" describe the subject "trees," not the "forest." Therefore, it should be rewritten as:

"In the middle of the forest **stand the giant trees** considered oldest in the region."

d. Misplaced modifiers.

Example: "Eagerly awaiting her birthday, Mary's presents were all picked up and admired by Mary many times throughout the course of the day."

Explanation: Modifiers are words that add details or change the meaning of another word. To avoid confusion, the modifiers should be placed close to the subject being described.

Misplaced modifiers can be really confusing since you're dealing with several words at the same time. The example above makes it seem as though Mary's presents, not Mary herself, are "eagerly awaiting her birthday."

Using common sense, we know that Mary's presents have no way of expressing the emotion of eagerness. By rearranging the words, we can come up with a sentence that makes more sense:

Eagerly awaiting her birthday, **Mary picked up and admired her** presents many times throughout the day.

Eliminate distracters.

Most multiple choice questions provide you with four possible answers to choose from--A, B, C, or D.

Use the process of elimination to whittle down the choices to only two. If you remove the distracters from the equation, it will be easier for you to get to the right answer since you'll only be choosing between two options.

Dealing with only two choices also means you have 50% probability of getting it right.

Watch out for qualifiers.

A qualifier is a word that enhances or limits the meaning of another word.

Qualifiers can either be absolute (e.g., all, always, absolutely, never, certainly, best, every, only, worst, invariably, without exception) or conditional (e.g., usually, probably, possibly, seldom, might, much, most, often, generally, frequently).

When you see a qualifier in one of the choices, it can either make the option correct or incorrect.

For example, the sentences below seem identical:

"It often rains in Batanes."

"It always rains in Batanes."

A closer look reveals that both sentences may look similar but they differ in meanings due to the type of qualifier used. Whereas the first sentence is correct, the second one is false because of the use of the word "always."

In multiple choice exams, options that use absolute qualifiers are mostly wrong while those with conditional qualifiers like "often," "seldom," and "probably" tend to be the correct answers.

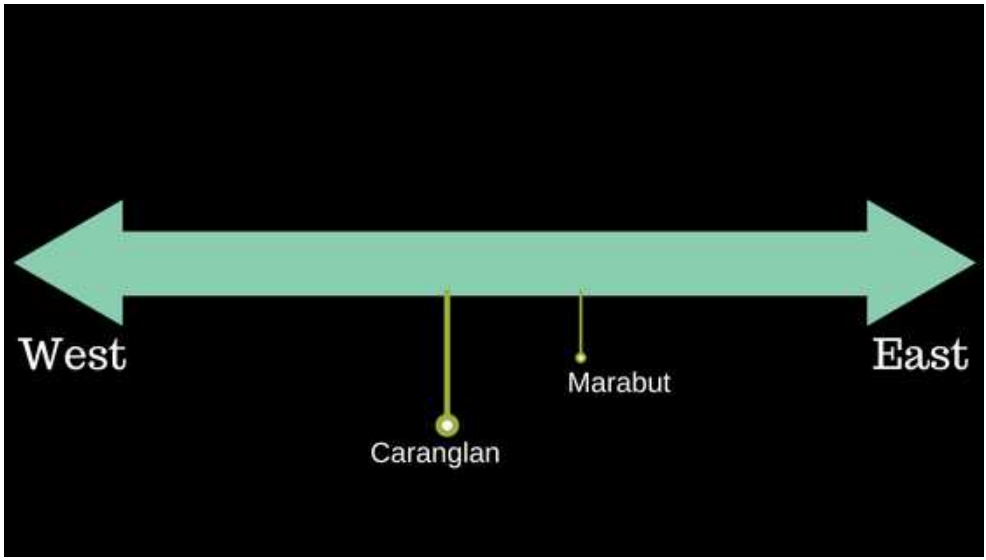
Draw diagrams and pictures to solve tricky Math problems.

Although some math problems can easily be solved with mental calculations, there are complex questions that warrant more visualization.

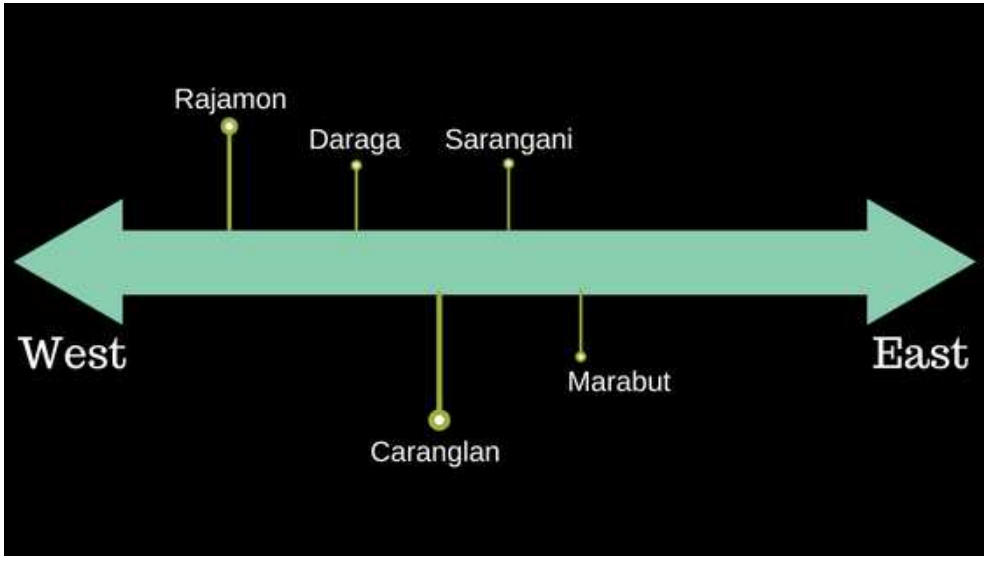
By converting word problems into diagrams or pictures, you can make them less intimidating and easier to solve.

Example: "The town of Marabut is located along Marikina Highway. The town of Caranglan is west of Marabut. Sarangani is east of Caranglan, but west of Marabut. Daraga is east of Rajamon, but west of Sarangani and Caranglan. Which town is the farthest west?"

To solve this problem, draw a line and put the first two places in their respective locations as described in the statement: "The town of Caranglan is west of Marabut."



Next, place the other towns in their correct order as indicated in the word problem.



Based on the diagram we've created, we can easily see that the town farthest west is Rajamon.

Although you can also visualize the diagram in your mind, actually drawing it on your scratch paper makes you less likely to commit mistakes.

Keep an eye out on negatives.

Negative words like none, never, not, no, and those with prefixes like un-, il-, or im- can change the meaning of a sentence.

If you don't read carefully, you may misinterpret a statement containing negative words as false when it's actually true.

Consider the two sentences below:

"It is **logical** to assume that Thomas Edison's fame **was due** to his many
practical inventions."

"It is **illogical** to assume that Thomas Edison's fame **was not due** to his
many practical inventions."

The first statement, which contains no negatives, is true. The second sentence, on the other hand, has double negatives. When two negative words are present, the statement is also true since the negatives negate each other.

Both statements above are true but the second one is relatively harder to figure out due to the presence of the negative words.

When dealing with sentences like this in multiple-choice exams, identify the negatives first and then understand the meaning of the statement without the negative words. This way, you can find out whether the sentence is true or false without being influenced by the negatives.

Look for grammatical clues.

Multiple choice questions can be asked in different ways but regardless of the format, they all follow basic grammar rules.

In some language proficiency exams, the answer can be the one that makes the most sense grammatically. For example, in a question that ends with the indefinite article "an," the answer is most likely the one that starts with a vowel.

The following question is another good example:

The people of Iceland
a. A country located just outside the Arctic Circle
b. Are the world's most avid readers
c. Claim to be descendants of the Aztecs
d. The capital, Reykjavik, where arms talks have been held

Based on grammar rules, we can eliminate choices (a) and (d). You can now choose between options (b) and (c) since they're the only ones that don't interrupt the flow of the sentence and follow the basic subject-verb agreement.

Grammatical clues can also be used to answer questions that test your ability to organize phrases or sentences.

Example:

a. Secondly, they had no leader.
b. Firstly, the workers were not united.
c. Finally, they did not have the support of their families.
d. Thirdly, they had no funds to tide them over.
e. From the beginning, it looked like the worker's strike was doomed to fail.

Answer choices:

1. abdec
2. cbead
3. deabc
4. ebadc

Relying on the keywords at the start of each sentence, we can organize them into a sequence that makes sense: "From the beginning," followed by "Firstly," "Secondly," and so forth. The correct sequence, therefore, is "ebadc."

Ignore conventional advice.

You've probably been told that when in doubt, always choose "c."

However, the probability of getting the question right if you choose this letter is similar to your chances of winning the lottery.

Don't look for patterns in places that have none, especially in multiple-choice exams where answers are arranged in random order.

Therefore, if you notice that you've chosen the same letter for three consecutive questions, don't be alarmed. The pattern must be coincidental so never let it interrupt you from answering the rest of the exam.

Be systematic when faced with confusing questions/choices.

The goal of the test maker is not to make your life easier. But no matter how long and confusing the questions and their corresponding choices may be, you can arrive at the right answer by taking it one step at a time.

Example:

Which of the following facilitates the healing process?

Resting the injured part of the body.
Protection of the wound from further Injury.
Adequate nutrition.
Emotional support from friends and family.
Depriving the patient of fluids.

Choices:
A, b, d, e
A, b, c, d
A, c, d, e
All of the above
None of the above

At first glance, the question may look overwhelming. But by being systematic, you can easily spot the answer without wasting so much time.

First, eliminate the statement that is apparently false, in this case (e) or "Depriving the patient with fluids." Next, go through the choices and eliminate those that contain the false statement (e).

By doing this, you can trim down your choices and have a better chance of picking the correct answer.

Additional tips.

- Frequently check that your answers match the corresponding questions, especially after you have skipped some items.
- Hide or cover the choices when reading the stem or the body of the question. Figure out the answer if you can so you

won't be distracted by the other choices by the time you uncover them.

- Write down as many formulas as you can remember on the scratch paper provided as soon as the exam starts. You can either do this at the beginning (at the risk of losing a few minutes) or after finishing the first part of the exam, provided that it doesn't require computations like Language Proficiency.
- If you have remaining time left, go over your test paper for the very last time to change answers for questions that you've either misread or just finally realized the answers to. Also, check for errors like stray pencil marks, question-answer mismatch, and shading two answers for the same question.

2

Language Proficiency

Directions: This subtest will measure your fluency in English and Filipino. Read the sentence/question/passage first before selecting the letter that corresponds to your answer.

1. May I please request that each of the two groups take an _____ position in the issue now.
A. alternating
B. alternative
C. alternate
D. all of the above

2. _____ mountains aplenty in the Philippines.
A. There is
B. There are
C. There were
D. There was

3. The student badly needs her teacher's
A. advice
B. advise
C. advising
D. advisory

4. Choose the correct and effective sentence from the set of sentences.
A. She only walked fifteen miles when her legs gave out.
B. She had only walked for about fifteen miles when her legs gave out.
C. She has walked only fifteen miles when her legs gave out.
D. She had walked only fifteen miles when her legs gave out.

5. A thousand pesos _____ not enough compensation and you _____ it.
A. are – knows
B. are – know
C. is – know
D. is – knows

6. If we _____ harder we would have passed the UPCAT.
A. study
B. had studied
C. studied
D. have studied

7. Amicable means the same as –
A. friendly
B. anxious
C. jealous
D. patient

8. _____ are you deserting me_____you are also taking our supplies.
A. neither—nor
B. not only—but
C. both—and
D. either—or

9. Lolita is going to Switzerland _____ May next year. Particularly, she would be leaving _____ eight o'clock a.m _____ New Year's Day.
A. in – on – on
B. at – on – at
C. in – at – in
D. in – at – on

10. Choose the correct and effective sentence from the set of sentences.
A. Father jogs exuberantly to the park every morning before breakfast to exercise his heart.
B. Father exuberantly jogs every morning to the park to exercise his heart before breakfast.
C. Father, to exercise his heart, jogs exuberantly every morning before breakfast to the park.
D. Father jogs exuberantly every morning before breakfast to the park to exercise his heart.

11. She _____ finished the project before tomorrow.
A. None of the above
B. would have
C. will have
D. should have

Questions 12 – 14: *Read the group of words provided. There may be a mistake in the sentence structure. If you find a mistake, choose the answer that is written most clearly and correctly. If there is no mistake, choose Correct as is.*

12. Veronica left the room, turned right, and, without any hesitation, walked outside.

A. Leaving the room, turning right, Veronica walking outside without any hesitation.
B. Veronica left the room and she turned right and walked outside without any hesitation.
C. Veronica left the room turned right and walked outside without any hesitation.
D. Correct as is

13. There are extra chairs in that room that are not needed or necessary.
A. There are extra chairs in that room.
B. There are extra and unnecessary chairs in that room.
C. The extra chairs in that room are not needed or necessary.
D. Correct as is

14. Some tortoises living up to 100 years are among the world's oldest animals.
A. The world's oldest animals, some living up to 100 years are some tortoises.
B. Some tortoises, among the world's oldest animals, are living up to 100 years.
C. Living up to 100 years, some tortoises are among the world's oldest animals.
D. Correct as is

For question numbers 15 – 21: Determine which of the following synonyms on the given choices best corresponds to how the underlined word/s were used on each sentence.

15. Leo made a disappointed, misunderstood face from the many creases at his <u>disposal.</u>
A. authority
B. distribution
C. garbage unit
D. regulation

16. Joana's reply to his query was sure and crisp, that it didn't took too long before she was able to prod him away.
A. brittle
B. lively
C. concise
D. fragile

17. The professor took an immaculate handkerchief out of his pocket, and began to polish the lenses of his glasses.
A. pure
B. spotless
C. error-free
D. flawless

18. Much of his writing is slack that is why readers get bored at his works.
A. lacks action
B. lacks completeness/perfection
C. lacks firmness
D. lacks diligence

19. Members shall be adequately braced to resist lateral and torsional displacement.
A. connected together
B. supported with braces
C. reinforced
D. get ready for an attack

20. Pauline's words had made all sorts of frightened echoes in our minds.
A. a close imitation
B. an answering sympathetic effect
C. a soft recurrence of a statement
D. a reverberation of sound waves

21. The dead load consists of the weight of the structure completed.
A. empty
B. inert
C. constant
D. lifeless

22. *The cold air mass will move south from Canada.*
In which sentence does the word mass mean the same thing as in the sentence above?
A. The storm warning of a blizzard caused mass concern.
B. The oil mass spread quickly into the ocean.
C. There was a mass of people gathering to watch the parade.
D. The 100-member choir will mass in the auditorium on Saturday.

Questions 23 – 27: *Choose the correct sequence of sentences that will make the paragraph more organized and logical.*

23.

(1) This mere mechanism of reading becomes altogether automatic at an early period of life.
(2) You will often find yourself reading words or characters automatically, while your mind is concerned with a totally different subject.
(3) This can be performed irrespective of attention.
(4) In as much, neither can I call it reading when it is just to extract the narrative portion of a text from the rest simply for one's personal amusement.
(5) To read the characters or the letters of the text does not mean reading in the true sense of the word.

A. 5-2-1-3-4
B. 3-5-1-2-4
C. 2-1-3-4-5

D. 5-3-2-1-4

24.

(1) Most of this material which we call ash, stays behind after the fire burns out.
(2) When we burn fuel such as wood, oil or coal, the fuel combines with oxygen in the air to form gases that escape into the atmosphere.
(3) Some of it, however, is carried aloft by the hot gases of the fire and adds to the volume of smoke produced.
(4) In addition, most of the fuels contain a small amount of various substances that do not burn.
(5) But most of the burning we do is far from perfect, so tiny particles of unburned fuel escape up the chimney in the form of smoke.

A. 2-5-3-4-1
B. 2-3-5-1-4
C. 2-3-5-4-1
D. 2-5-4-1-3

25.

(1) In the Philippines, the population boom has derailed efforts to make the benefits of economic growth trickle down to the grassroots. Thousands of new people are born on our planet every day.
(2) With the population galloping toward the 100-million mark, the Philippines will be among one of several developing nations leading global population growth in the coming years, according to the United Nations.
(3) With limited resources and economic growth failing to keep pace with the population boom, this means more people getting an ever-shrinking share of the pie.

(4) This has been a problem in previous administrations and remains a problem of the Aquino government, despite sustained economic growth since 2010.
(5) This is true both in the Philippines and around the planet, whose resources cannot meet the demands especially of the poorest segments of the 7.2 billion population.

A. 1-2-3-4-5
B. 4-2-3-1-5
C. 2-3-5-1-4
D. 5-3-2-1-4

26.

(1) Ang bawat polista ay kinakailangang magtrabaho ng apatnapung araw sa bawat taon.
(2) Ang *polo y servicios* o sapilitang paggawa ay ang sapilitang paglilingkod sa pamahalaang mga Pilipinong lalaki mula 16 hanggang 60 taong gulang.
(3) Noong 1884, ito ay ginagawa na lamang labinlimang araw.
(4) Ang mga manggagawa sa ilalim ng *polo y servicios* ay tinatawag na polista.
(5) Upang makaligtas sa sapilitang paggawa, kinakailangang magbayad ng *falla* na tanging mga mayayaman lamang ang nakakabayad.

A. 2-4-1-3-5
B. 2-5-1-4-3
C. 2-3-1-5-4
D. 2-1-5-4-3

27.

(1) Ipinakikita ng panitikang eksistensyal ang kamulatan sa kamalian at kahangalan ng uniberso.

(2) Madalas na paksa nito ang mga bagay at galaw na etikal na titiyak sa kahulugan ng buong buhay ng isang indibidwal.
(3) Ang eksistensyalismo ay naniniwalang ang tao mismo ang gumagawa at humuhubog ng kanyang kapalaran.
(4) Di nito tinatanggap na ang herediti at kapaligiran ang tumitiyak sa motibasyon at ang pag-uugali ng tao.
(5) Ang kanyang kahihinatnan ay ayon sa kanyang pagpili ng aksyon o ng pamamaraan ng pamumuhay.

A. 3-1-2-5-4
B. 3-5-4-1-2
C. 3-5-1-2-4
D. 3-2-1-4-5

28. His reassuring words mitigated our fears. Mitigated means –
A. reinforced
B. added to
C. caused
D. eased

29. By the time the operation ends, Billy _____ a total of 1,300 hours for his friend and _____ countless outdated magazines in the emergency room waiting area.
A. will have waited…will have read
B. have waited…have read
C. waited…read
D. will have waited…read

30. Sarah wanted to see the concert she had been looking forward to it for a long time. Choose the answer that is the best way to write the underlined section of the sentence.
A. concert, she had been
B. concert; she had been

C. concert she has been
D. Correct as is

Questions 31 – 35*: Ayusin ang mga sumusunod na salita upang makabuo ng makabuluhang pangungusap.*

31. nilalaman kuwento unawain ang ng
1 2 3 4 5

A. 3-4-5-2-1
B. 3-4-1-5-2
C. 3-5-1-2-3
D. 3-1-2-4-5

32. takdang sala ang may lahat parusa ng
1 2 3 4 5 6 7

A. 4-6-3-2-7-1-5
B. 4-1-6-3-5-7-2
C. 4-1-3-5-7-2-6
D. 4-2-3-5-7-6-1

33. isang ang buhay gulong ay
1 2 3 4 5

A. 2-5-3-4-1
B. 2-4-5-1-3
C. 2-5-3-1-4
D. 2-3-5-1-4

34.Celso ang hinihintay ano mo pa
1 2 3 4 5 6

A. 4-6-2-3-5-1
B. 4-5-6-2-3-1
C. 1-2-6-5-4-3
D. 1-4-5-3-2-6

35. kabataan ang ay mahalagang isang ng buhay
1 2 3 4 5 6 7
yugto

8

A. 2-5-1-6-7-8-3-4
B. 2-1-3-4-6-7-5-8
C. 2-1-3-5-4-8-6-7
D. 2-5-6-1-4-7-3-8

36. Neither of her Oscar awards, however, _____ been polished for a long time.
A. have
B. is
C. has
D. have already

37. By the time the operation ends, Billy _____ a total of 1,300 hours for his friend and _____ countless outdated magazines in the emergency room waiting area.
A. will have waited…will have read
B. have waited…have read
C. waited…read
D. will have waited…read

38. Patungo _____ ang mga kandidato.
A. roon
B. doon
C. dito
D. rin

Questions 39 – 41*: Read the paragraph and then answer the questions that follow it.*

"The Challenge"

It started when she was in elementary school. Sonia knew that she wanted to be a champion synchronized swimmer. Today's competition would determine whether she would earn the opportunity to go to the national contest. She performed the required technical routines flawlessly and led the other swimmers going into the free competition, the portion of the program that counted most. This series of choreographed moves performed to music required a couple of qualities. For one particularly difficult element, Sonia had to remain upside down in the water for over half a minute. She could tell by the audience's thunderous applause when she emerged from the pool that the performance had gone well. Seconds later the judges confirmed it; Sonia was on her way to the national contest.

39. *This series of choreographed moves performed to music required <u>a couple of qualities</u>?*
Good writers describe the subject using details. How can the underlined words be better written to include exact details?
A. some abilities that she had to develop
B. specific physical qualities
C. special moves
D. great strength and control

40. Which sentence would not belong in this paragraph?
A. Sonia had worked hard for many years to get to this point.
B. The routine had gone smoothly, and Sonia had done even better than she had anticipated.
C. The cool water always felt wonderful to Sonia; she loved the smell of chlorine.
D. Her dream, since childhood, was finally coming true.

41. Which of these would be the best topic sentence for this paragraph?
A. A synchronized swimming team will be sent to the Olympics.
B. Sonia got a new swimsuit and cap for the competition.
C. Only a few extremely talented athletes win competitions.
D. For almost as long as she could remember, Sonia had wanted to go to the Olympics.

Questions 42 – 56*: Choose the alternative that best expresses the idea in standard written English and is worded most consistently with the tone of the passage. If you believe the original version is best, then choose "NO CHANGE." There will also be questions about sections of the passage or about the passage as a whole. Read the entire passage before answering any of the questions. For some questions you may need to read beyond the underlined section in order to determine the correct answer.*

Building the Plaza de Toros

Thousands of tourists from all over the world gather in Seville, Spain each year, two weeks after Easter Holy Week, to witness the La Real Maestranza. La Real Maestranza is part of the Seville Fair, and the Fair (42) originated back in 1847 when (43) it was originally organized as a livestock fair. Of central importance to the festival are the bullfights that took place (44) in the Plaza de Toros, a circular ring on Baratillo Hill.

Construction on the stunning and beautiful (45) Plaza de Toros first begun in 1749 but had not completed (46) for many years after. The inner facade of the plaza (called the Palco del Príncipe or Prince's Box) was completed in 1765, and this box consists of two parts; the (47) access gate through which the successful bullfighters exited (48), and the theater box itself, which was reserved for the exclusive use of not only the Spanish King and Queen, but for (49) other members of the Royal Family. [50]

When monarch Carlos III prohibited bullfighting celebrations in 1786, work halted, and (51) only one-third of the plaza had been completed (52) at the time. The construction of the ring was finally completed in 1881, two thirds (53) were constructed in stone, the rest in wood.

Choosing to redo them in brick, the stone grandstands were replaced between 1914 and 1915 by architect Anival Gonzalez. (54) All the rows were reconstructed with a smoother slope. Ten to twelve rows of shaded seating were constructed as well as fourteen rows in the sun and three rows of barrier. A row of armchairs was built in the superior part of the shaded area, and they (55) were placed in front of the theater boxes. [56]

42.
A. NO CHANGE
B. which originated
C. which did originate
D. and the Fair originated

43.
A. NO CHANGE
B. in which
C. after which
D. as

44.
A. NO CHANGE
B. had taken place
C. did take place
D. take place

45.
A. NO CHANGE
B. stunning yet beautiful
C. beautiful
D. stunning, however beautiful,

46.
A. NO CHANGE
B. was began in 1749 and was not completed
C. had begun in 1749 and had completed
D. began in 1749 but was not completed

47.
A. NO CHANGE
B. parts: the
C. parts, the
D. parts the

48.
A. NO CHANGE
B. did exit
C. are exiting
D. will exit

49.
A. NO CHANGE
B. not only the Spanish King and Queen, yet for

C. not only the Spanish King and Queen, but also for
D. not the Spanish King and Queen, but also for

50. Which of the sentences below does not belong anywhere in the second paragraph?
A. The bullring is the oldest bullring constructed entirely of stone, because most others were constructed with a combination of stone and brick.
B. The stands were constructed in two levels of seating of 5 raised rows per level and 136 Tuscan sandstone columns.
C. Seville's fair is officially known as the April Fair, but in fact, it hasn't always been celebrated entirely in April and once, it even had to be celebrated in May.
D. The Royal Box has a sloping roof covered in Arabic tiles.

51.
A. NO CHANGE
B. nevertheless
C. because
D. even though

52.
A. NO CHANGE
B. were completed
C. will complete
D. are completed

53.
A. NO CHANGE
B. 1881; two thirds
C. 1881, two thirds,
D. 1881—two thirds

54.
A. NO CHANGE
B. Choosing to redo them in brick, between 1914 and 1915 architect Anival Gonzalez replaced the stone grandstands.
C. Choosing to redo them in brick, architect Anival Gonzalez replaced the stone grandstands between 1914 and 1915.
D. Choosing, between 1914 and 1915, to redo them in brick, architect Anival Gonzalez replaced the stone grandstands.

55.
A. NO CHANGE
B. those
C. these chairs
D. it

56. Which of the following sentences best completes the passage?
A. Today spectators from around the world enjoy watching this traditional Spanish sport in this world-class ring.
B. Between 1729 and 1733 Felipe V stayed in Seville and received support from the Corporation in spite of being French and the first Bourbon king of Spain.
C. More than 12,500 spectators can watch the fight between the torero and the bull in this ring.
D. During the Seville Festival, men and women dress up in their finery, ideally the traditional "traje corto" (short jacket, tight trousers and boots) for men and the "faralaes" or "trajes de flamenca" (flamenco style dress) for women.

***Questions 57 – 64**: Determine which of the following synonyms on the given choices best corresponds to how the underlined word/s were used on each sentence.*

57. His <u>stoic</u> attitude earned him the title "man made of stone."
A. active
B. heavy

C. hard
D. indifferent

58. Samuel could not stand the gelid surroundings of the Alpine Mountains.
A. very cold
B. very hot
C. humid
D. tepid

59. Do not worry about running short of rice because we had a copious harvest last month.
A. weak
B. innumerable
C. depleting
D. abundant

60. Jojo is suffering from asphyxia. Noxious gases during fire have suffocated him.
A. an unconscious state
B. a state of trance
C. a state of suppression
D. a state of affliction

61. Her hair was full and lightly curled.
A. chubby
B. filled
C. detailed
D. thick

62. The judge exculpated the accused for lack of evidence.
A. proved guilty
B. exonerated

C. banished
D. proved innocent

63. The politician was criticized for his preposterous remarks.
A. lengthy
B. witty
C. absurd
D. promising

64. Having lived with three old maids, Lucy projects a reticent attitude.
A. meek
B. effusive
C. effulgent
D. offensive

65._____ni Aling Nena ang mga pinamalengke dahil sa takot.
A. Nabitawan
B. Nabitiwan
C. Nalaglag
D. Nabuhos

66. Ang pagbabasa ng mga iba't ibang aklat sa Filipino ay isang mabisang paraan upang lalong _____ang kaalaman ng mag-aaral tungkol sa wika.
A. malinang
B. maayos
C. masinop
D. masubukan

67._____-Negros ang tagapag-alaga ni Norma.

A. Taga
B. Tiga
C. Mala
D. Parang

68. Nakipaghuntahan na naman _____ ang kasama mo _____ sa kabilang ibayo.

A. raw, roon
B. raw, doon
C. daw, roon
D. daw, doon

69. Mrs. Santos is very happy because her pupil who used to be very <u>vociferous</u> doesn't talk much anymore.

A. lazy
B. active
C. talkative
D. sleepy

Questions 70 – 83*: Select the word or pair of words that appropriately completes the following relationship.*

70. ode : poetry;
A. theme : essay
B. conflict : short story
C. fable : prose

D. tragedy : drama

71. each : somebody;
A. that : oh
B. gracefully : dance
C. sing : song
D. which : whom

72. peal : peel;
A. steal : still
B. fair : fare
C. buy : vie
D. great : greet

73. herd : cattle;
A. colony : termites
B. pack : peacocks
C. hive : wolves
D. covey : whales

74. epic : elegy;
A. allegro : plot
B. sonata : satire
C. radar : allegory
D. couplet : sonnet

75. golf : hole;
A. baseball : glove
B. archery - bull's eye
C. bowling : pin
D. tennis : racket

76. protein : meat;
A. energy : sugar
B. calories : water
C. vitamins : minerals
D. starch : potatoes

77. fern : plant;
A. shark : water
B. cat : lion
C. collie : boxer
D. dog : animal

78. try : tried;
A. came : come
B. fly : flew
C. go : gone
D. dead : died

79. lion : cub;
A. duck : drake
B. child : baby
C. horse : colt
D. goat : lamb

80. rabies : dogs;
A. malaria : mosquitoes
B. fever : ants
C. cough : worms
D. AIDS : rat

81. gloves : hand;
A. welder : steel
B. gun : combat
C. field : football
D. helmet : head

82. gun : holster;
A. sword : scabbard
B. sword : slay
C. sword : bayonet
D. sword : cadet

83. canvas : painting;
A. clay : pottery
B. clay : mold
C. clay : art
D. clay : statue

Directions: *Choose the alternative that best expresses the idea in standard written English and is worded most consistently with the tone of the passage. If you believe the original version is best, then choose "NO CHANGE." There will also be questions about sections of the passage or about the passage as a whole. Read the entire passage before answering any of the questions. For some questions you may need to read beyond the underlined section in order to determine the correct answer.*

For questions 84 – 98:

Passage 1

"Hair-raising Problems"

Why is it that we are so completely obsessive (84) with the hair on our heads? Millions of dollars are spent each year on cutting hair, lengthening hair, bleaching hair, straightening hair, curling hair, highlighting hair, and even growing hair; whatever you can do to hair, someone is willing to pay the money (85) to do it.

Natural redheads long for to be (86) brunettes and dishwater blondes dream of shiny golden tresses. Both men and women cringe at the sight of each gray hair, so (87) teenagers enjoy

weekly experiments with magenta dyes, spikes, and tangerine streaks.

All of these thoughts cross my mind as I examine the result of (88) my most recent hair adventure. As a mature woman watching the gray hairs mixing in rapidly (89) with my natural brunette tones, I decided over a year ago, to (90) approach my stylist with the idea of highlights. Having seen many of my peers go this route, I figured that highlighting was for to be (91) the answer to my reluctance to look my age.

[1] The monthly highlighting went well: excepting (92) for those times when my hair turned out a little too subdued, making me look partially gray instead of brunette. [2] I suffered through it remarkably well, saying to myself, "She'll get it right the next time."

[3] For the most part, (93) I've enjoyed my year of highlights, so much so that I bravely approached Donna, my stylist, two months ago and proclaimed that I was done with wimpy highlighting and ready to go blonde.

[4] The result was not quite what I expected, but I resolved to live with it! (94). [5] Donna was surprised at my suggestion, but quickly began sharing my unbridled enthusiasm as she gathers (95) the appropriate chemicals and concoctions that would soon transform me.

Three months later, I find myself seesawing between tears and (96) laughter as I attempt to cover up a patch of nearly bald scalp on the top of my head.

For someone who has long been fanatical about the appearance of her hair, this absence of hair has proven to be quite a challenge to my ego and self-confidence. I've always enjoyed styling my hair, and suddenly, I have nothing to style.

Each time I begin to experience a new pang of disgust and despair over this new hair anomaly, I once again ask myself why we are so

obsessed with the hair on our heads. The answer always comes to me in a flash, in a simple two-word phrase: pure vanity. Soon after this realization, I cease my crying. (97)

84.
A. NO CHANGE
B. obsessed
C. obsessing
D. obsessioned

85.
A. NO CHANGE
B. pay
C. paying money
D. have paid

86.
A. NO CHANGE
B. to have
C. to be
D. becoming for

87.
A. NO CHANGE
B. however
C. yet
D. and

88.
A. NO CHANGE
B. result for
C. result with
D. result by

89.
A. NO CHANGE
B. rapidly mixing
C. mixed rapidly in
D. rapidly mix in to

90.
A. NO CHANGE
B. ago to
C. ago: to
D. ago to,

91.
A. NO CHANGE
B. was being
C. could of been
D. was

92.
A. NO CHANGE
B. well, except
C. well except
D. well. Except

93.
A. NO CHANGE
B. Also
C. Instead
D. In light of this

94.
For the sake of logic and coherence, Sentence 5 should

be placed:
A. where it is now.
B. before Sentence 1.
C. after Sentence 2.
D. before Sentence 4.

95.
A. NO CHANGE
B. she was gathering
C. she had been gathering
D. she gathered

96.
A. NO CHANGE
B. along with
C. or
D. as well as

97. The writer is considering deleting the preceding sentence. If the sentence was deleted, the essay would
primarily lose:
A. a summary of the essay.
B. the narrator's ability to put her situation into perspective.
C. a stylistic link to the essay's introduction.
D. an understanding of the author's purpose in writing the essay.

98. Suppose the writer had chosen to write a how-to article for people wanting to change their hair color. Would this essay fulfill the writer's goal?
A. Yes, because the author's approach to changing her own hair color would ease the anxiety of others wishing to do the same.
B. Yes, because this essay emphasizes the universality of people changing their hairstyles and hair color.

C. No, because this article only deals with the narrator's own experimentation with her hair and does not provide steps for others to do the same.
D. No, because the essay discourages people from changing their hair color.

For questions 99 – 113:

Passage 2

"A Modern Blacksmith"

You will probably never find his name in a history book, but to this day, Walker Lee continues to contribute to America heritage (99). Walker Lee is an old-fashioned, modernday blacksmith who still practices (100) the fine art of manipulating metal over a hot fire. In his words, "Blacksmithing is no dying art!"

Walker Lee had began (101) his career in hand-forged ironwork at the age of 30. The idea of creating an object out of iron, a most intractable material (102), appealed to him. He started on this new venture by collecting and reading every book he could find that described the process of blacksmithing: its history, its practical and decorative uses, and the equipment needed to establish and outfit his own smithy. During the course of his research, Lee discovered a tool necessary for the success of any blacksmith: the anvil, a heavy block of iron or steel upon which the blacksmith hammered and shaped the malleable metal.

Lee bought his first anvil from 84-year-old Hurley Alford Templeton of Philadelphia, lugging (103) it home to Michigan in the back of a 4-H county bus. This anvil weighed 100 pounds, about the minimum size Walker Lee needed to get started (104) in his craft.

Lee's first anvil cost him $100, and four months later, he paid $75 for an additional implement—a vice—from Cornell University in New York. This important tool also made its (105) way back to Michigan in the back of Lee's 4-H bus.

Lee had spent the summer carting 4-H groups out from Michigan to the east coast for various county fairs and expositions. (106)

Once Lee obtained his first portable forge, he was ready to build his blacksmith shop, commonly referred to as a "smithy." (107) In the interest of economy, he constructed this shop out of inexpensive oak planks and tarpaper. It was a crude little shack but stood for (108) only nine years. Lee, who by then was completely hooked on blacksmithing, replaced his first shop with a finer one made of more expensive wood; this shop also had glass windows, a definite improvement over Lee's original "smithy."

[1] The very first object Lee forged was a long, pointed (109) Hudson Bay dagger. [2] Many people refer to this type of knife as a "dag." [3] As he recalls that event he says, "From the minute I first saw the thing take shape, I was hooked . . . still am. There's an element of magic in it to me. You heat it up and pound it with a hammer and it goes where you want it to go."

[4] Years later at a family event Lee (110), Discovered that his Italian ancestors were accomplished coppersmiths. [5] During the gathering, Lee's great uncle Johnny was proclaiming (111) that Lee's propensity for blacksmithing was "in the blood" as he happily presented Lee with a new 125-pound anvil. (112)

As an outside observer watches (113) Walker Lee bending and shaping a hot metal rod into some recognizable form, it is difficult to discern the origin of the magic Lee spoke of; is it in the glowing, orange steel or in Walker himself?

99.
A. NO CHANGE
B. American heritage.
C. Americas heritage.
D. American's heritage.

100.
A. NO CHANGE
B. who still continues to practice
C. who continues to still practice
D. who practices still

101.
A. NO CHANGE
B. had begun
C. begun
D. began

102.
Which of the following alternatives to the underlined portion would NOT be acceptable?
A. one of the most intractable metals, iron,
B. a most intractable material, that being iron
C. iron (a most intractable material)
D. a most intractable material, iron,

103. Which choice most emphasizes the difficulty in moving the large anvil?
A. NO CHANGE
B. taking
C. driving
D. transporting

104. At this point, the writer wants to express how Lee first began the craft of blacksmithing. Which choice would most effectively accomplish this task?
A. NO CHANGE
B. continue

C. keep going
D. move on

105.
A. NO CHANGE
B. it's
C. its'
D. the

106.
A. NO CHANGE
B. Carting 4-H groups out from Michigan to the east coast for various county fairs and expositions, Lee had spent the summer.
C. Lee had spent the summer, for various county fairs and expositions, carting 4-H groups out from Michigan to the east coast.
D. OMIT the underlined portion.

107. Given that all of the choices are true, which one would most effectively introduce the subject of this paragraph?
A. NO CHANGE
B. Obtaining a portable forge for the shop proved to be Lee's biggest challenge.
C. Blacksmith shops can be difficult to construct, but the most challenging task is moving the necessary equipment into it.
D. A blacksmith's forge requires some type of blower in order to keep the fire hot enough to bend the steel.

108.
A. NO CHANGE
B. that stood for
C. which standing for
D. and stands for

109.
A. NO CHANGE
B. long pointed,
C. long, and pointed
D. long-pointed

110.
A. NO CHANGE
B. later at a family, event Lee
C. later, at a family event, Lee,
D. later, at a family event, Lee

111.
A. NO CHANGE
B. proclaimed
C. had been proclaiming
D. having proclaimed

112. Which of the following sentences in this paragraph is LEAST relevant to the main focus of the essay and, therefore, could be deleted?
A. Sentence 2
B. Sentence 3
C. Sentence 4
D. Sentence 5

113.
A. NO CHANGE
B. was watching
C. had been watching
D. watched

For questions 114 – 128:

Passage 3

"Unfulfilled Promises"

If you have ever entered a contest of any sort—you (114) are well aware of the legal requirements, exclusions, and disclaimers that always accompany (115) the contest's entry form. Many laws today regulate a contest sponsor's responsibilities to the entrants, and courts are filled with lawsuits asserting with non-compliance (116) on both sides.

However, this was not always the case. In 1896, a contest motivated a Norwegian immigrant, Helga Estby, to travel nearly 3,500 miles on foot (117) from the state of Washington to New York City. Unfortunately, as is still sometimes true, Helga won the competition only to find that the promise (118) $10,000 award was mysteriously absent.

[1] Helga had been living (119) on her farm with her husband and nine children in Spokane, Washington, when she read of a $10,000 prize being offered to a woman who was willing to walk across the country. [2] Because the Estby farm was facing foreclosure, Helga decided that walking across the country in a bicycle skirt for that kind of money was a small price to pay for a greater rewarding. (120)

[3] At the time, this style of skirt was considered to be inappropriate because it revealed the female ankle. [4] The only requirement, from all accounts, was that she wear a modern, newfangled bicycle skirt as she traveled. (121)

So, in May of 1896, Helga and her 18-year-old daughter, Clara, had set off (122) on their long journey.

Helga carried a revolver and a spray gun containing red pepper for protection. (123) Presumably, Helga and Clara found food and shelter along the way, and they arrived in New York City in December, seven months after their departure. The contest sponsors, however, were to be found nowhere. (124)

This story of bravery and persistence had therefore been kept a secret (125) for nearly a century, primarily because Helga's seven-month absence from the farm wreaked havoc on her family. Two of her children died of diphtheria while she was gone. Even worse, her husband had sequestered the surviving children in an unheated shed, thinking that this was the only way to keep them from being infected with the disease. Since the contest sponsor failed to award Helga the money, the Estbys ended up losing the farm; her expedition had been a disaster.

At the time, Helga's trip was considered an embarrassment by the Norwegian-American community and was kept utterly quiet. After Helga's death, her own children burned the hundreds of pages Helga had written through the years, leaving only (126) a small scrapbook of newspaper clippings and very few details of Helga's life or her ill-fated trip.

Looking back 100 years, one can only marvel at the boldness and bravery that must have energized Helga Estby to make that journey on foot across the country in an effort to save her family farm.(127) (128)

114.
A. NO CHANGE
B. sort; you
C. sort you
D. sort, you

115.
A. NO CHANGE
B. always are accompanying
C. accompany always
D. are accompanying

116.
A. NO CHANGE
B. lawsuits asserting non-compliance
C. lawsuits of non-compliance asserting
D. non-compliance lawsuits asserting

117.
A. NO CHANGE
B. on foot, 3,500 miles
C. 3,500 miles on feet
D. 3,500 miles per foot

118.
A. NO CHANGE
B. promise for the
C. promised
D. promising

119.
A. NO CHANGE
B. been living
C. has been living
D. had lived

120.

A. NO CHANGE
B. greatly rewarding
C. great reward
D. greatest reward

121. Which of the following sequences of sentences makes this paragraph most logical?
A. NO CHANGE
B. 1, 3, 2, 4
C. 3, 2, 4, 1
D. 1, 4, 3, 2

122.
A. NO CHANGE
B. have set off
C. set off
D. went to set off

123.
A. NO CHANGE
B. For protection, Helga carried a revolver as well as a red pepper-containing spray gun.
C. Helga, for protection, she carried a revolver and a spray gun containing red pepper.
D. Carried by Helga for protection were a revolver and a spray gun containing red pepper.

124.
A. NO CHANGE
B. were nowhere when found
C. to be found nowhere

D. were nowhere to be found

125.
A. NO CHANGE
B. had been kept a secret
C. had been actually kept a secret
D. had in fact been kept a secret

126.
A. NO CHANGE
B. years leaving only
C. years; leaving only
D. years leaving only,

127. Given that all of the choices are true, which one would best conclude the sentence while providing the reader with the most specific explanation for Helga's motivation to walk across the country?
A. NO CHANGE
B. to win $10,000.
C. in an effort to save her children from diphtheria.
D. to help her daughter Clara gain experience.

128. At this point, the writer is considering adding the following sentence:
In 1984, Helga's great-great-grandson wrote a story about his ancestor for a history assignment. Should the writer make this addition here?
A. Yes, because it links the ending of the essay to its introduction.
B. Yes, because this information is highly relevant to the rest of the essay.
C. No, because this story might not focus on Helga's farm.
D. No, because this information introduces a new subtopic of the essay.

Questions 129 – 133*: Choose the word closest to the meaning to the underlined word in the sentence.*

129. The corrupt policeman was discharged from service due to his ignominious act of accepting bribes.
A. honorable
B. disrespectable
C. unwanted
D. remarkable

130. Jacqueline is an irascible girl who frequently has tantrums.
A. impatient
B. cheerful
C. hot-tempered
D. jolly

131. The piquant mouse was able to find its way out of the maze in a short while.
A. dumb
B. clever
C. small
D. unusual

132. Only a ruffian could do such a heinous act of killing a helpless child.
A. an insane person
B. a brutal person
C. a lovable person
D. a confused person

133. The plane overshot the runway and landed on a ditch.
A. passed through

B. passed by
C. went beyond
D. did not reach

Questions 134 – 138*: Choose the word opposite in meaning to the underlined word in the sentence.*

134. The garrulous girls were distanced from each other.
A. mute
B. talkative
C. behaved
D. quiet

135. The players were confused when the kibitzers suddenly butted-in during the team's huddle.
A. advisers
B. spectators
C. onlookers
D. crowd

136. Mahirap pakinggan ang sinasabi ng taong garil.
A. utal
B. bulol
C. matalino
D. matatas

137. Hungkag ang bigasan dahil nasira ng bagyo ang mga palay.
A. salat
B. puno
C. bulok
D. bago

138. Maantak ang sugat kapag napatakan ng kalamansi.
A. malaki
B. maliit
C. manhid
D. mahapdi

Questions 139 – 140*: Piliin ang salitang kasing-kahulugan ng salitang nakapahilig.*

139. Dahil sa paulit-ulit na pagsisinungaling, ***basa ang papel*** niya sa karamihan.
A. ayaw nang paniwalaan
B. ayaw nang pagbigyan
C. ayaw nang pakinggan
D. ayaw nang makasama

140. Ni ayaw man lamang humarap sa tao ang ***talo-saling*** na si Eula.
A. masungit
B. isnabera
C. mahiyain
D. pangit

Questions 141 – 143: *Choose the sentence that best combines the underlined sentences.*

141. The airport is called the Glynco Jetport. The airline reservations and travel systems refer to its location as Brunswick, Georgia.

A. Where the airport is called the Glynco Jetport, the airline reservations and travel systems refer to the location as Brunswick, Georgia.
B. But the airport is called the Glynco Jetport, the airline reservations and travel systems refer to the location as Brunswick, Georgia.
C. Even though the airline reservations and travel systems refer to the location as Brunswick, Georgia, the airport is called the Glynco Jetport.
D. When the airport is called the Glynco Jetport, the airline reservations refer to the location as Brunswick, Georgia, and the travel systems.

142. Plato believed that boys and girls should be given an equal education. This idea is rarely mentioned in textbooks.
A. Plato believed that boys and girls should be given an equal education, where this idea is rarely mentioned in textbooks.
B. Plato believed that boys and girls should be given an equal education, an idea that is rarely mentioned in textbooks.
C. Believing that boys and girls should be given an equal education, Plato's idea is rarely mentioned in textbooks.
D. Plato believed that boys and girls should be given an equal education, whereupon this idea is rarely mentioned in textbooks.

143. Recently there have been government cutbacks in funds. Experts foresee steady hiring in the government's future.
A. Despite recent government cutbacks in funds, experts foresee steady hiring in the government's future.
B. Whereupon recent government cutbacks in funds, experts foresee steady hiring in the government's future.
C. So that there have been recent government cutbacks in funds, experts foresee steady hiring in the government's future.
D. Nonetheless, there have been recent government cutbacks in funds, experts foresee steady hiring in the government's future.

Questions 144 -150*: Fill in the blank with the word that creates the most logical sentence.*

144. Ruby loves blueberry pie _____ it is made with freshly picked blueberries.
A. whether
B. because
C. when
D. as if

145. _____ our low annual fee, you will receive a 20% discount if you sign up this week.
A. Because
B. While
C. In spite of
D. In addition to

146. I _____ the speech you gave last Thursday night, but I was in bed with the flu.
A. will have heard
B. would hear
C. might hear
D. would have heard

147. . _____ the Beatles' most popular songs— most of which were written by Lennon and McCartney—are "I Want to Hold Your Hand" and "Hey, Jude."
A. With
B. Considering
C. Among
D. To

148. My neighbor is deathly afraid of dogs; _____, I never let my Golden Retriever, Sandy, outside without a leash.

A. moreover
B. yet
C. mainly
D. consequently

149. The ticket said the show would start at 8:00, but the curtains didn't go up _____ 8:30.
A. less than
B. until
C. about
D. since

150. A large percentage of the class _____ fascinated by the museum.
A. was
B. be
C. any of the above
D. were

3

Science

Directions: Read the questions carefully and choose the letter that corresponds to your answer.

1. All of the following are solutions except _____.

A. Brass
B. Coffee
C. Seawater
D. Milk

2. How come a person with type B blood cannot donate to a person with type A blood?

A. The recipient has antibodies against B blood, which has B-antigens, resulting in clotting up the donated blood.
B. The recipient has B surface antigens that can be recognized by antibodies of the donor, resulting in rejection of the donated blood.
C. Both A and B are true.
D. None of the above statements are true.

3. How many moles of *CO*2 does 88 grams of Carbon Dioxide contain?

A. 2
B. 3
C. 4
D. 5

4. **Weathering** is the process that changes solid rock into sediments. With weathering, rock is disintegrated. It breaks into pieces. However, rocks on the moon are not being weathered. Which of the following is the reason for this?

A. There is no atmosphere on the moon.
B. There is no water on the moon.
C. There is no volcano on the moon.
D. The gravity on the moon is very small.

5. Each of two replicated strands of a chromosome is called a(n)
A. aster.
B. centriole.
C. synapse.
D. chromatid.

6. Storm surge is an abnormal rise of water generated by a storm. It creates a change in the water level due to the presence of the storm. The rise may come rapidly, flooding coastal lowlands in the process. PAGASA predicted a storm surge will hit the Philippines even before

Typhoon Yolanda entered the country but they did not expect the damages to be that massive. The storm surge that accompanied Yolanda was described as tsunami-like. This is somehow reminiscent of the tsunami that hit Japan in the year 2011.

Tsunamis can be created when there is a sudden disturbance on the Earth's crust and deformation on the sea floor. This deformation vertically displaces the overlying water and creates violent underwater disturbance. What is the main characteristic of tsunamis that differentiates it from a storm surge?

A. Tsunamis are tidal waves.

B. Tsunamis are created when a body of water is displaced usually by an earthquake.

C. Tsunamis are always accompanied by typhoons and other forms of weather disturbances.

D. Tsunamis are single waves that only hit the shorelines by the Pacific Ocean.

7. If Wes applies 100 newtons of force on a 2-meter wrench at a right angle to the wrench and parallel to the plane of rotation, how much torque, in newton-meters (N-m), is he applying to the bolt?
A. 200 N-m
B. 100 N-m
C. 50 N-m
D. 25 N-m

8. If two flies heterozygous for wing length and body color are crossed, which of the following are possible results?

A. chance of L, long wings = 3/4
B. chance of l, short wings = 1/2
C. chance of G, grey body = 1/4
D. all of the above are true

9. Which chemical bonds are considered the strongest, requiring the most energy to break?
A. ionic bonds

B. van der Waals forces
C. hydrogen bonds
D. covalent bonds

10. The eruption of Mt. Pinatubo caused widespread destruction and loss of human life. Gases and solids injected into the stratosphere circled the globe for three weeks. Volcanic eruptions of this magnitude can impact global climate, reducing the amount of solar radiation reaching the Earth's surface, lowering temperatures in the troposphere, and changing atmospheric circulation patterns. Which of the following was an effect of the Mt. Pinatubo eruption?

A. an increase of the Earth's temperature by 2˚C
B. massive global warming
C. El niño phenomenon
D. lowered global temperature by 0.5˚

11. Which of these would be least likely to diffuse across the phospholipid bilayer of a cell membrane?
A. water
B. sodium ions
C. oxygen
D. carbon dioxide

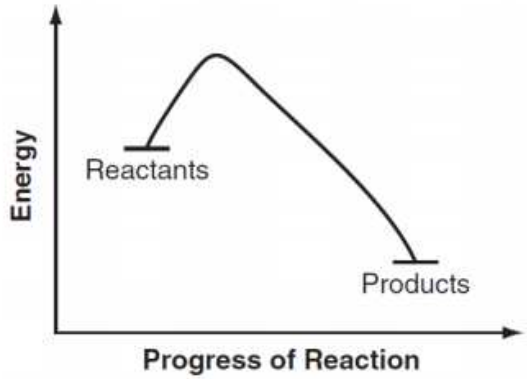
12. The bacteria that causes syphilis is
A. a coccus.
B. E. coli.
C. a bacillus.
D. a spirochete.

13. Give the mass number for an atom that has 10 protons, 10 electrons, and 11 neutrons.

A. 31

B. 20
C. 10
D. 21

14. The graph below shows the change in energy that occurs during a chemical reaction. Which of the following is most likely to happen as the reaction nears completion?



A. The reaction releases energy to its surroundings.
B. The energy level of the reactants remains constant.
C. The reaction takes in energy from its surroundings
D. The energy level of the reactants increases gradually.

15. Cloud seeding can be done by dispersing Silver Iodide or dry ice (solid carbon dioxide) into clouds to induce precipitation. Cloud seeding has also been used to dissipate fog, modify hurricanes, and decrease lightning and hail in thunderstorms. The results have been remarkable but never guaranteed increase precipitation on all trials. The Beijing Weather Modification Office has researched on the application of cloud seeding to control weather. During the 2008 Beijing Olympics, the Chinese governments executed cloud seeding to clear the air of pollutants and to keep it from raining over the Bird's Nest stadium while the games were going on. They managed to deliver as they have promised.

What could be an obvious negative effect of cloud seeding in China?

A. Excessive precipitation and unanticipated drought

B. Significant increase of Silver contamination on crops and water

C. Unpredictable weather

D. Increase in thunderstorms and typhoons that may hit the country within the same year of cloud seeding in the area

16. During _____, the chromosomes attach to the spindle and align at the metaphase plate of the spindle.

A. prophase
B. prometaphase
C. metaphase
D. anaphase

17. Geothermal systems produce electricity from what energy source?
A. heat from the Sun
B. mechanical energy from wind
C. heat from Earth's interior
D. mechanical energy from waves

18. Gravitational potential energy is energy an object possesses because of its position in a gravitational field. Which of the following has the most gravitational potential energy?

A. A truck at the top of a hill

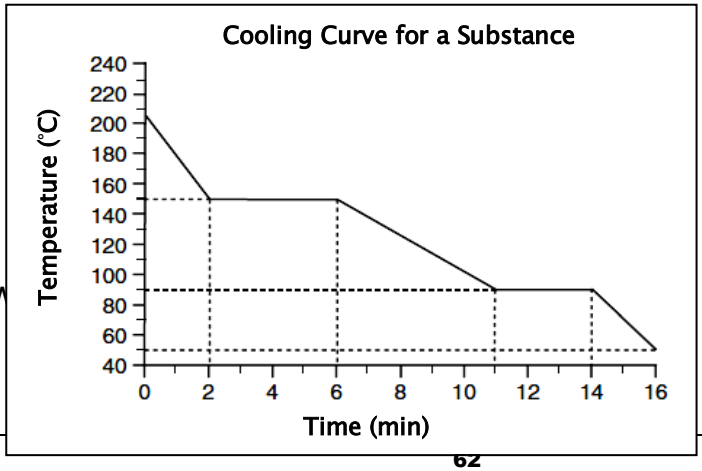
B. A truck speeding down the hill
C. A man on top of the hill

D. A man on his mountain bike speeding down the hill

19. The proportion of adenine bases in a sample of DNA was found to be 12%. Which of the following statements is true? The proportion of
A. uracil bases in the sample is 12%.
B. thyroxine bases in the sample is 12%.
C. uracil bases in the sample is 88%.
D. cytosine bases in the sample is 38%.

20. If a single-celled saltwater organism is placed in freshwater, it will not be able to survive. Which statement explains why this is true?
A. The organism's cell will absorb too much water through osmosis.
B. The organism's cell will absorb too many sodium ions through osmosis.
C. The organism's cell will release too many hydrogen ions through diffusion.
D. The organism's cell will release too much water through facilitated diffusion.

21. Starting as a gas at 206°C, a sample of a substance is allowed to cool for 16 minutes. This process is represented by the cooling curve below.

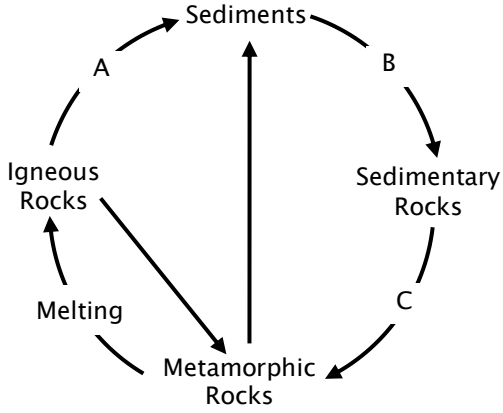


W

C. 90°C
D. 50°C

22. Protozoa are placed in different classes according to their
A. movement.
B. color.
C. shape.
D. size.

23. Refer to the diagram below.

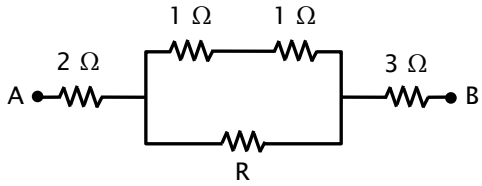


Which of the following is TRUE?
I. Path A is uplift, weathering, erosion, deposition
II. Path B is heating and crystallization.
III. Heat and pressure are responsible for path C.

A. I and II only
B. I and III only
C. II and III only
D. I, II, and III

24. Agglutination is the
A. clumping of students in hallways.
B. clumping of platelets to help stop bleeding.
C. clumping of white blood cells around bacteria.
D. clumping of blood cells due to an antibody-antigen reaction.

25. The figure below shows resistors connected in series and parallel. If the total resistance from A to B is 6 Ω, find the resistance of R.



A. 1 Ω
B. 2 Ω
C. 3 Ω
D. 4 Ω

26. What mass, in g, of hydrogen gas is formed when 3.0 mol of aluminum react with excess hydrochloric acid according to the following equation?

$$2Al_{(s)} + 6HCl_{(aq)} \rightarrow 2AlCl_{3(aq)} + 3H_{2(g)}$$

A. 3.0
B. 4.5
C. 6.0
D. 9.0

27. Removing all lone pairs of electrons on the central atom of ClF_3 would change the geometry from
A. trigonal pyramidal to trigonal planar.
B. from square shaped to trigonal pyramidal.
C. from T–shaped to trigonal planar.
D. from trigonal bipyramidal to trigonal planar.

28. Differences between eukaryotic and prokaryotic cells include all of the following except _____.

A. eukaryotic cells have mitochondria
B. eukaryotic cells have cilia and flagella with complex structure
C. prokaryotic cells have more complex cell walls
D. prokaryotic cells have no genetic material

29. Which electromagnetic wave has the shortest wavelength?

A. Radio
B. UV
C. Visible Light
D. Gamma

30. I lack respiratory, excretory, and circulatory systems, have bilateral larva, deuterostome development, and move using a water vascular system. What am I?
A. echinoderm
B. chordate
C. jellyfish
D. mollusc

31. Assuming that complete dominance is followed, which of the following genotypes has the same phenotype as QQRrssTt?

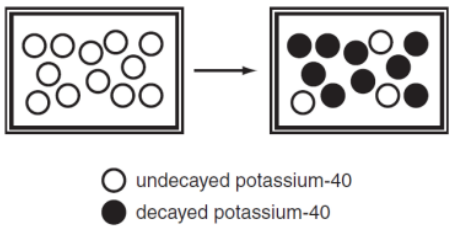
A. AABbccDd
B. QqRRssTT
C. Qqrrsstt
D. QQRrSsTt

32. What percent of a parent isotopes remains after 2 half-lives?
A. 50%
B. 25%
C. 6.25%
D. 2%

33. Which factors are involved in Gay-Lussac's Law?

A. Pressure and Temperature
B. Pressure and Volume
C. Temperature and Volume
D. Volume and Moles

34. Potassium-40 is used to determine the age of rocks. The diagram below shows a rock sample in which some of the potassium-40 atoms have undergone radioactive decay. According to the diagram, how many half-lives has the rock sample undergone?



A. 9 half-lives
B. 3 half-lives

C. 2 half-lives
D. 1 half-life

35. The tendency of an object to resist changes in motion is dependent on:

A. Weight
B. Temperature
C. Speed
D. Mass

36. What the value does 6.02×10^{23} represent?

A. The number of particles in a mole
B. The number of particles per atom in a substance.
C. The density of moles per square nanometer.
D. The length of time for a material to decompose

37. Which of the following pairs are analogous structures?

A. the front leg of a horse and a human arm
B. the front leg of a frog and a bat wing
C. the wing of a bird and a bat wing
D. the front flipper of a porpoise and a human arm

38. What enzyme in saliva breaks down sugars?

A. Aqua-enzymes
B. Amylase
C. Adenine
D. Glyoxalase

39. Molality, m, is defined as number of moles of solute per kg of solvent. If 230 g of ethanol (C_2H_5OH) is added to 500 g of water, what is the molality of the solution?

A. 0.46 m
B. 1 m
C. 2.17 m
D. 10 m

40. How much time should it take for a traveling bullet to hit the ground compared to a bullet dropped from rest? Assume the ground remains flat for the entire distance the bullet may travel.

A. The traveling bullet will take longer to hit the ground than the bullet dropped from rest
B. The traveling bullet will hit the ground at the same time as the bullet dropped from rest
C. The traveling bullet will hit the ground before the bullet dropped from rest
D. The traveling bullet moves so fast that it will never hit the ground

41. A scientist performed an experiment where he knocked out the genes of a mouse cell responsible for producing the Golgi complex. Which of the following could be a consequence of the experiment to mice lacking the gene?

A. Mice would grow to be fat, and obese, since there would be no regulation of lipid synthesis.
B. Mice would develop uncontrolled mutations over the course of its life, since production of proteins has been hampered.
C. Mice won't grow or develop into adults, and will live for only a few days or weeks, since proteins won't be processed properly and they wouldn't know where to go after they're synthesized.

D. The mice will be lethargic since they won't be able to process absorbed nutrients to transform them into energy in the form of ATP.

42. What enzyme in saliva breaks down sugars?

A. Aqua-enzymes
B. Amylase
C. Adenine
D. Glyoxalase

43. Specific gravity is the ratio of the density of substance to the density of water. Suppose the specific gravity of liquid X is 1.2. Which of the following will not float in liquid X?

A. Water
B. A 1000-cm^3 object whose mass is 750 g
C. A solid object whose specific gravity is 0.9
D. A liquid whose specific gravity is 1.3

44. Vitamins help to control chemical reactions in our bodies. Without vitamins certain reactions cannot take place. We need only tiny amounts of vitamins, but without them we will suffer from deficiency diseases, like the lack of vitamin D will lead to
A. beriberi
B. rickets
C. scurvy
D. night blindness

45. In which population would you expect the most rapid evolutionary change?
A. a small population with a high mutation rate in a changing environment

B. a small population with a low mutation rate in a stable environment
C. a large population with a high mutation rate in a changing environment
D. a large population with a low mutation rate in a stable environment

46. In a species of pea plant, white flowers were completely dominant over red flowers. Pure breeding, white flowered pea plants are crossed with pure breeding, red-flowered pea plants. What proportion of white- and red-colored plants will be produced in the F1 generation?
A. all white-flowered plants.
B. all red-flowered plants.
C. a 3 : 1 ratio of white-flowered plants to red-flowered plants.
D. a 3 : 1 ratio of red-flowered plants to white-flowered plants.

47. What are the coefficients that will balance the formula equation below?
AlCl3 + NaOH □ Al(OH)3 + NaCl
A. 1, 3, 1, 3
B. 3, 1, 3, 1
C. 1, 1, 1, 3
D. 1, 3, 3, 1

48. When ice changes from a solid to a liquid at its melting point
A. its temperature increases.
B. heat is given out.
C. its particles gain energy.
D. its particles become more ordered.

49. Flowers are the reproductive organs of angiosperms. These organs have various parts that fall under three groups: (1) male parts, (2) female parts and (3) accessory parts.

Depending on the present structures, a flower may be categorized as complete, incomplete, perfect or imperfect. Which of the following lists of parts describes a perfect flower but not a complete flower?

A. Pistil, stamen and accessory parts
B. Pistil and accessory parts only
C. Stamen and accessory parts only
D. Pistil and stamen only

Read the passage below to answer questions 50 and 51.

Eutrophication is a phenomenon where excessive amounts of nutrients are added to a marine ecosystem. These nutrients cause plant life like algae to multiply rapidly, leading to very high population densities. In freshwater ecosystems, the algae can become so dense that it can turn ponds, lakes or even smaller rivers green. The algae grows to an unreasonable level at a very fast rate. The algae are known as phytoplankton and are microscopic, single-celled organisms.

A body of water that is experiencing eutrophication and a resulting bloom can be quickly devastated. Eutrophication affects all living organisms in the area including fish, birds and mammals. The top layer of phytoplankton causes such a build-up on the surface that they accumulate sediment. When this occurs the sunlight is blocked and it will choke off the plant life below the surface. The phytoplankton will also cause less surface area for the water to interface with air. As a result, there will be less oxygen available in the water. As oxygen continues to deplete, the depletion can have a negative effect on life as there will be less oxygen to support the organisms below the surface that depend on the oxygen from plants that diffuses into the water.

Scientist 1
The root cause of eutrophication is not known. However, the frequency and increasing incidents of eutrophication point to human farming activity as the potential cause. The growth of the phytoplankton is caused by runoff that contains multiple sources of nitrates that are also found in fertilizer. The nitrates allow for the phytoplankton to grow rapidly. The solution to the problem is to either move the drainage so the runoff from the human farming activity cannot reach the water source or move the farms.

Scientist 2
Sometimes eutrophication can happen naturally without any real cause. Sometimes when there are periods of heavy rain, the increase in rain water leads to an imbalance in the pH of the water. This in turn creates favorable conditions for the phytoplankton to grow and proliferate. This is a natural cycle that also ensures that too many fish and other animals do not build up in a freshwater source. This type of bloom is nature's way of eliminating overpopulation with an abiotic factor. Although many organisms will die as a result, it will help to thin the numbers of organisms and ensure a healthier freshwater source.

50. According to Scientist 1, which of the following is the cause of the eutrophication?
A. A change in the pH of the water.
B. The increasing changes in phytoplankton.
C. Agricultural run-off from human activity.
D. The build-up of phosphates in the body of water.

51. What is the main point of disagreement between Scientist 1 and Scientist 2?
A. The source of the nitrogen.
B. The root cause of the eutrophication.
C. The effects of the lack of oxygen.
D. The effect of the plant life in the aquatic ecosystem.

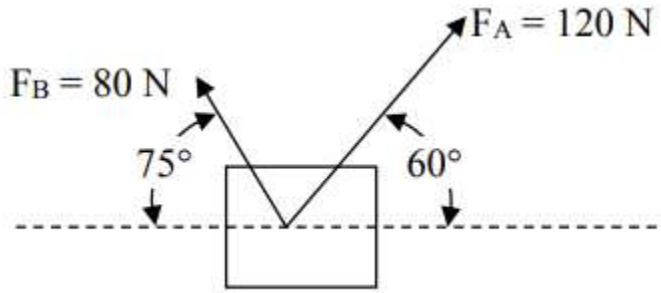
52. A container weighs 90 g when empty and 110 g when fully filled with water. The density of water is 1.0 g/mL. When the container is filled instead with liquid X, it weighs 140 g. What is the density of liquid X?

A. 0.80 g/mL
B. 1.4 g/mL
C. 2.5 g/mL
D. 3.0 g/mL

53. Which of the following is the function of the cotyledon in a seed?

A. to form the lower portion of the plant.
B. to form the upper portion of the plant.
C. to protect the seed from drying out.
D. to provide nutrients for the germinating plant.

54. Two forces are acting on an object as shown below. What is the magnitude of the resultant force?

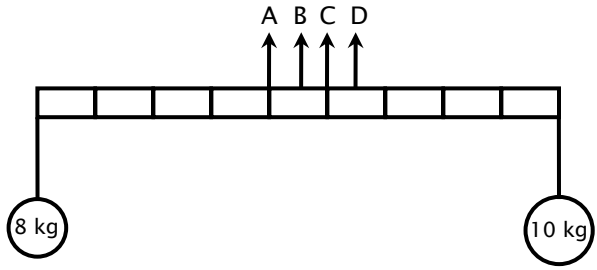


A. 200 N
B. 40 N
C. 66.7 N
D. 185 N

55. Torque is the product of the force and the lever arm. In symbols,

$$\tau = F_{\perp} \times l$$

Refer to the diagram below. Two masses, 8 kg and 10 kg, are hung at both ends of a 90-cm stick. The stick has markings every 10 cm. If the mass of the stick is negligible, where should the stick be suspended by means of a cord to remain the stick horizontal?



A. A
B. B
C. C
D. D

56. Your flashlight has three identical 1.5 volt batteries in it, arranged in a chain to give a total of 4.5 volts. Current passes first through battery (a), then through battery (b), then through battery (c), on its way to the bulb. When you operate the flashlight, the batteries provide power to the current and they gradually use up their chemical potential energy. Which battery will run out of chemical potential energy first?

A. All three will run out at the same time.
B. Battery (a) will run out first.
C. Battery (b) will run out first.
D. Battery (c) will run out first.

57. A neutral atom in the ground state contains 16 electrons. What is the total number of electrons in the 3p sublevel?
A. 2
B. 4
C. 6
D. 8

58. If you balance the equation below, what is the least sum of the coefficients?

$$MnO_2 + HCl \rightarrow Cl_2 + MnCl_2 + H_2O$$

A. 26
B. 15
C. 9
D. 7

59. What is the probability that a father with a homogenous dominant trait and a mother with the same homogenous dominant trait will produce an offspring with the recessive trait?

A. 25%
B. 15%
C. 0%
D. 100%

60. A graduated cylinder is used to measure liquid volume. The correct way of reading the level of mercury in a graduated cylinder is
A. read from the top of the meniscus.
B. read from the bottom of the meniscus.
C. use the lowest point of the mercury in the cylinder.
D. take the average of the highest and the lowest points.

61. Suppose a cold steel bar (at 10°C) and a hot iron block (at 70°C) are placed inside the same room at the same time. With time, the steel bar and the iron block are brought to thermal equilibrium with the room. The final temperature of the room is 25°C. What are the final temperature of the steel bar and the iron block?

A. Steel bar (at 40°C), iron block (at 25°C)
B. Steel bar (at 25°C), iron block (at 40°C)
C. Steel bar (at 40°C), iron block (at 40°C)
D. Steel bar (at 25°C), iron block (at 25°C)

62. Mount Mayon is what type of volcano?

A. Stratovolcano
B. Shield
C. Caldera
D. Cinder

63. The radioactive half-life of a certain isotope is 2 days. What part of this isotope will remain after 8 days?
A. ½
B. ¼
C. 1/8
D. 1/16

64. The circulatory system has three main components: (1) the pumping organ – the heart, (2) the circulating medium – the blood and (3) the passageways of blood – the blood vessels. Furthermore, there are three types of blood vessels: capillaries, arteries and veins. Capillaries are the site of gas exchange between the blood and the bodily tissues. Arteries carry blood away from the heart while veins carry blood towards the heart. Apart from these differences in function, these three types of blood vessels all have different morphological features.

Arteries have much thicker walls than veins. What is the significance of the thicker walls for arteries?

A. Arteries normally carry oxygenated blood – which require flowing through thicker vessels in order to preserve the oxygen content.
B. Arteries receive greater blood pressure than the veins. The greater blood pressure would threaten destroying thin-walled blood vessels, warranting thicker walls for arteries.
C. Veins have valves that prevent back-flow of blood. The valves are designed to work in thin walled vessels.
D. Veins normally carry deoxygenated blood – which does not require flowing through thicker vessels in order to preserve the oxygen content.

65. Mixtures can be classified as homogenous or heterogenous and can be separated by simple means. Solutions and suspensions
A. are both compounds.
B. are both examples of a homogenous mixture.
C. are both examples of a heterogenous mixture.
D. can be separated into components by physical means.

66. Which of the following cases is/are NOT a uniformly accelerated motion?
(1) A feather falls from a certain height inside a vacuum tube.
(2) A ball rolls along a frictionless plane at uniform speed.
(3) A coin falls from a certain height in air but air resistance is negligible.

A. (1) only
B. (2) only
C. (1) and (2) only
D. (2) and (3) only

67. The main reason why one can possibly walk barefoot on a red-hot wooden coals without burning the feet is
A. the low thermal conductivity of coal.
B. the high temperature of coal.
C. the low temperature of coal.
D. the stepping techniques.

68. Global climate change can be attributed to the increase in what two gases produced by human activities?

A. nitrous oxide and sulfur dioxide
B. methane and carbon dioxide
C. ozone and carbon dioxide
D. ozone and methane

69. A stone is thrown into the air at an angle. Neglecting air resistance, what is the stone's velocity upon reaching its maximum height?

A. zero
B. equal to the horizontal component of its initial velocity
C. equal to the vertical component of its initial velocity
D. equal to the acceleration due to gravity

70. Which of the following characterizes water?

A. Water releases only heat quickly.
B. Water releases and gains heat quickly.
C. Water releases and gains heat slowly.
D. Water gains only heat slowly.

71. How many star/s is/are there in our solar system?
A.1
B. 1 million
C. 1 billion
D. infinitely many

72. If the volume of a gas at a certain pressure is halved, _____.

A. its temperature is halved
B. its temperature is doubled
C. its temperature remains constant
D. its temperature increases according to a geometric progression

73. The reason why we see eclipses of the Moon more often than solar eclipses, even though solar eclipses happen more frequently is that
A. lunar eclipses are visible over more than half of Earth compared to less than 20% of Earth's surface for partial solar eclipses.
B. the weather is more cloudy during the new moon.
C. a lunar eclipse lasts longer than a solar eclipse.
D. people are not so interested in the solar eclipse.

74. What measurement is used to quantify the destruction caused by an earthquake?

A. the Richter scale
B. the modified Mercalli scale
C. the moment magnitude scale
D. the moment destruction scale

75. Igeneous rocks originate when magma or lava cools and crystallizes or when pyroclastic materials are consolidated. The two categories of igneous rocks are plutonic rocks, which form within

the earth's crust, and volcanic rocks, which form at the surface. Volcanic rocks can usually be distinguished from plutonic rocks by
A. its color
B. its composition
C. its iron-magnesium content
D. the size of its mineral crystals

76. When a lit match is touched to the wick of a candle, the candle begins to burn. When the match is removed, the candle continues to burn. In this reaction, the match _____.

A. behaves as a catalyst.
B. supplies activation energy.
C. is part of the rate determining step.
D. lowers the activation energy barrier

77. Specific gravity is the ratio of the density of substance to the density of water. Suppose the specific gravity of liquid X is 1.2. Which of the following will not float in liquid X?

A. Water
B. A 1000-cm^3 object whose mass is 750 g
C. A solid object whose specific gravity is 0.9
D. A liquid whose specific gravity is 1.3

78. The solidification of molten rock from inside or outside the earth causes the formation of igneous rocks. These rocks are characterized by the presence of large or small crystals, depending on the rate of cooling of the rocks. Granite is an intrusive igneous rock that cooled beneath the earth's crust, and has large crystals. What is the most probable reason for this?

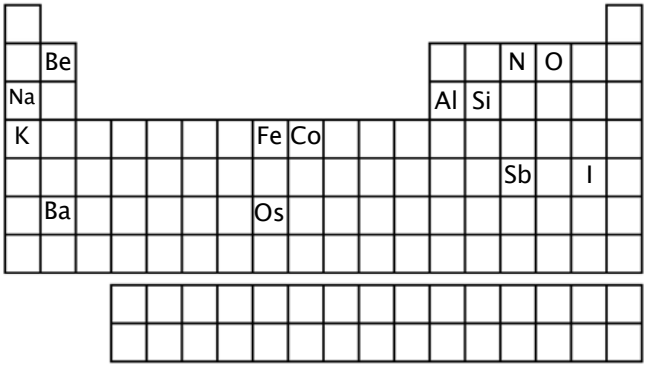
A. Extreme pressures at the bottom create larger crystals.
B. Gravity causes the heavier crystals to collect at the bottom of intrusive igneous rocks.

C. Hotter temperatures act as a catalyst to increase the rate of crystal formation in intrusive igneous rocks.
D. Hotter temperatures beneath the earth's crust decrease the cooling rate, allowing more time to grow larger crystals.

79. 1 atm is equal to _____ Torr.

A. 700
B. 720
C. 273
D. 760

80. Based on the following periodic table, which two elements have a half-filled p orbital?



A. Nitrogen and antimony
B. Iron and cobalt
C. Barium and osmium
D. Sodium and potassium

81. Of the first 101 elements, which is the most unstable?

A. Francium
B. Plutonium
C. Arsenic
D. Uranium

82. Which element is the most electronegative?

A. Neon
B. Francium
C. Sodium
D. Fluorine

83. In snapdragons, red flowers represent the RR genotype while white flowers represent the rr genotype. Upon breeding red and white flowers, the offsprings were neither red nor white, instead they were pink. What mode of inheritance is exhibited by the snapdragons?

A. Codominance
B. Dominance
C. Incomplete Dominance
D. Sex-influenced

84. What is the most common isotope of Carbon?

A. Carbon-12
B. Carbon 16
C. Carbon-14
D. Carbon-13

85. Suppose two hypothetical organisms with blue eyes have an offspring with red eyes. Assuming that this trait obeys the

Mendelian laws of inheritance, which among the following statements is TRUE?

A. Red eye color is the dominant trait.
B. The red-eyed offspring has a homozygous dominant genotype.
C. The parents both have a heterozygous genotype.
D. The red-eyed offspring has a heterozygous genotype.

86. Mechanical and chemical weathering result in disintegration and decomposition of parent material so that it is more nearly in equilibrium with new physical and chemical conditions. Mechanical weathering involves forces that break rocks into smaller pieces without changing their chemical composition. Which mechanical weathering process involved in the origin of exfoliation domes?

A. pressure release
B. expansion and contraction
C. heating and cooling
D. oxidation and reduction

87. Rock and dust samples brought back from the Moon by the Apollo missions in the 1980s were more similar to Earth's mantle than to meteorites that struck the Earth. Which of the following statements is true about Earth's tock and moon's rock?

A. Rocks on Earth are much younger than those on the moon.
B. Rocks on Earth are much older than those on the moon.
C. Rocks on Earth are about the same age as rocks on the moon.
D. Moon rocks do not have age.

88. Newton's first law of motion states that "Every object remains at rest or in motion in a straight line at constant speed unless acted

upon by an unbalanced force." What is the net force acting on an airplane in level flight at 500 kph due north?
A. 100 N
B. 490 N
C. 980 N
D. 0

89. What is the molar concentration of NaCl solution that contains 30 grams of salt per 200 mL of solution?
A. 0.15 M
B. 0.30 M
C. 1.3 M
D. 2.6 M

90. What is the limiting reagent for the following chemical reaction if 24 grams of hydrogen and 48 grams of oxygen react to form water?

$$2H_2 + O_2 \rightarrow 2H_2O$$

A. Hydrogen
B. Oxygen
C. Water
D. This reaction has no limiting reagent.

91. Coulomb's law and Newton's law of gravitation both involve which of the following?
A. the inverse square law.
B. the charge on the particle.
C. the mass of the particle.
D. permeability

92. Which among the following is correctly paired?

A. cheddar cheese : heterogeneous

B. liquid soap : homogeneous

C. sugar : element

D. orange juice : compound

93. An analysis of a compound used in the production of aluminum is 32.79% sodium, 13.02 % aluminum and 54.19% fluorine. The empirical formula of the compound is

A. Na_3AlF_6

B. Na_5AlF_8

C. NaAlF

D. Na_3AlF_3

94. Flooding frequently happens in the Philippines. It may occur due to an accumulation of rainwater on saturated ground. This can threaten several lives, properties and even livestock. If there is a flood, what characteristics of soil would make the situation of flooding worse within the affected area?

A. high porosity and high permeability
B. high porosity and low permeability
C. low porosity and high permeability
D. low porosity and low permeability

95. The height of the column of mercury in a mercury barometer is dependent on the following EXCEPT on the

A. diameter of the tube.

B. atmospheric pressure.

C. density of mercury and weather condition.

D. altitude at which the measurement is made.

96. A 7-m rope is stretched between two poles, which are 6-m apart. A boy is holding on to the middle of the rope and hanging

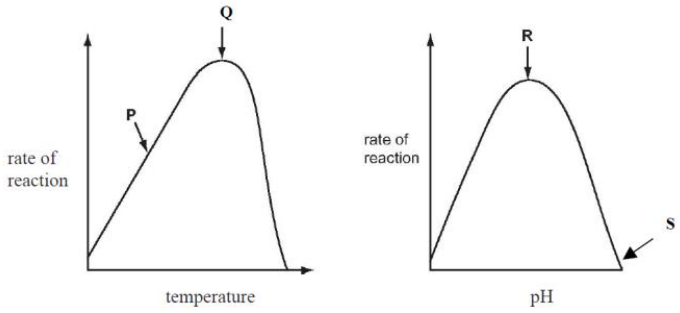
down. If the boy weighs 300 N, what is the tension in the rope on the right-hand side?
A. 183 N
B. 291 N
C. 425 N
D. 291 N

97. What process can be used on a liquid to separate its components without losing either component in the process?

A. Distillation
B. Evaporation
C. Sieving
D. Paper Chromatography

98. What component of hard water makes it “hard”?
A. sodium and nitrogen
B. oxygen and hydrogen
C. large amounts of calcium and magnesium ions
D. large amounts of sodium and carbon dioxide

99. The graphs below show the effects of temperature and pH on enzyme activity. Which statement explains the enzyme activity at the point shown?



A. At P, hydrogen bonds are formed between enzyme and substrate.
B. At Q, the kinetic energy of enzyme and substrate is highest.
C. At R, peptide bonds in the enzyme begin to break.
D. At S, the substrate is completely denatured.

100. Excluding the sun, what is the brightest star in the sky?

A. Sirius
B. Venus
C. Betelgeuse
D. The Big Dipper

4

Mathematics

Directions: The Mathematics subtest will test your ability to solve quantitative problems quickly and accurately. Analyze each problem and select the best answer from the multiple choices.

To mimic the actual test conditions, you're not allowed to use calculators. Because UPCAT is a time-pressured exam, we also recommend using a timer when taking the practice test.

1. A scuba diver descends 80 feet, rises 25 feet, descends 12 feet, and then rises 52 feet where he will do a safety stop for five minutes before surfacing. At what depth did he do his safety stop?

   A. -15
   B. -14
   C. 16
   D. 14

2. Evaluate the algebraic expression $y\{(\frac{x}{2} - 3) - 4a\}$ when

   a = 3
   x = 6

$y = \frac{1}{2}$

A. $y\{(\frac{x}{2} - 3) - 4a\} = -5$
B. $y\{(\frac{x}{2} - 3) - 4a\} = -7$
C. $y\{(\frac{x}{2} - 3) - 4a\} = 5$
D. $y\{(\frac{x}{2} - 3) - 4a\} = -6$

3. If x is an even integer and y is an odd integer, which of the following must be an odd integer?

   A. 2x + 2y
   B. 2x – 2y
   C. x + y + 1
   D. x + y + 2

4. 35% of 15% of x is equivalent to which of the following?

   A. 0.0525x
   B. 0.125x
   C. 0.25x
   D. 0.525x

5. A farmer has a rectangular field that measures 125 feet by 200 feet. He wants to enclose the field with a fence. What is the total length, in feet, he will need for the job?

   A. 450
   B. 550
   C. 650
   D. 750

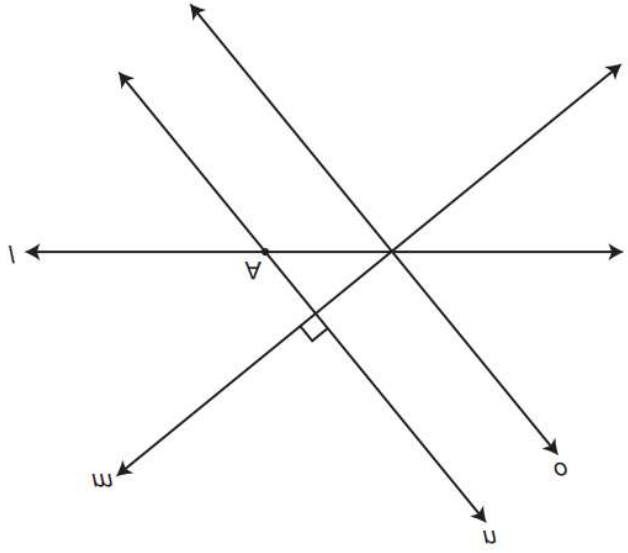
6. A farmer is raising a hog that weighed 20 lbs. when he bought it. He expects it to gain 12 pounds per month. He will

sell it when it weighs 200 lbs. How many months will it be before he will sell the animal?

A. 14
B. 15
C. 24
D. 25

7. Twenty-five more girls than $\frac{2}{3}$ the number of boys participate in interscholastic sports at a local high school. If the number of girls participating is 105, how many boys participate?
   A. 110
   B. 115
   C. 120
   D. 125

Use the following ndiagram to answer questions 8 to 13:



8. How many lines can be drawn through •A that are parallel to line m?

   A. 0
   B. 1
   C. 2
   D. Infinite

9. How many lines can be drawn through •A that are perpendicular to line l?

   A. 0
   B. 1
   C. 10,000
   D. Infinite

10. Which lines are perpendicular?

   A. n, m
   B. o, l
   C. l, n
   D. m, l

11. How many points do line m and line l share?

   A. 0
   B. 1
   C. 2
   D. Infinite

12. •A is

A. between lines l and n.
B. on lines l and n.
C. on line l, but not line n.
D. on line n, but not line l.

13. Which set of lines are transversals?

A. l, m, o
B. o, m, n
C. l, o, n
D. l, m, n

14. The triangle ABC that is provided has side lengths of a, b. and c feet and is not a right triangle. Let **A'** be the image when the triangle is reflected across side BC. Which of the following is an expression for the perimeter, in feet, of quadrilateral **A'**BAC?

A. 2 (a + b)
B. 2 (b + c)
C. a + b + 2c
D. 2 ab

15. If 60% of a number is 12, what is 165% of the same number?
A. 30
B. 31
C. 32
D. 33

16. What would be the height of a trapezoidal building if, at its base, it measured 80 feet, its roofline measured 40 feet, and the surface area of one side was 7,200 ft^2?
A. 112 ft.
B. 150 ft.
C. 120 ft.
D. 135 ft.

17. The volume of a cylindrical aquarium tank is 13,565 cubic feet. If its radius is 12 feet, what is its height to the nearest foot?
A. 73 feet.
B. 27 feet.
C. 42 feet.
D. 30 feet.

18. A cylinder has a surface area of 2,512 square feet. The height of the cylinder is three times the radius of the base of the cylinder. Find the radius and the height of the cylinder.
A. r = 5 feet; h = 15 feet
B. r = 10 feet; h = 30 feet
C. r = 15 feet; h = 45 feet
D. r = 20 feet; h = 60 feet

19. Solve the inequality $\frac{4}{3}x - 5 > x - 2$.
A. $x > 3$
B. $x > 6$
C. $x > 9$
D. $x > 12$

20. Which of the following angle measurements would not describe an interior angle of a right angle?
A. 30°
B. 60°

C. 90°
D. 100°

21. Solve this quadratic equation: $24x^2 = 3(43x - 15)$.
A. $x = \frac{1}{3}$ and $x = 6$
B. $x = \frac{2}{8}$ and $x = -5$
C. $x = 3$ and $x = \frac{1}{8}$
D. $x = \frac{3}{8}$ and $x = 5$

22. A 20 ft. beam leans against a wall. The beam reaches the wall 13.9 ft. above the ground. What is the measure of the angle formed by the beam and the ground?
A. 44°
B. 35°
C. 55°
D. 46°

23. The lines **y = 2x** and **2y = - x** are

A. parallel B. perpendicular

C. horizontal D. vertical

24. The inequality corresponding to the statement:**"the price is no less than 100 Dollars"** is

A. $x < 100$ B. $x \geq 100$ C. $x \leq 100$ D. $x > 100$

25. Which of these points **DOES NOT** lie on the graph of **y = -x + 3**?

A. (9,- 6) B. (3,0) C. (-2,5) D. (2,2)

26. Which of these relations **DOES NOT** represent a function?

A. {(2,3),(-4,3),(7,3)} B. {(0,0),(-1,-1),(2,2)}

C. {(2,3),(-5,3),(2,7)} D. {(-1,3),(-5,3),(-9,0)}

27. Which property is used to write:**3(x y) = (3 x)y**?

A. Commutative property of multiplication B. Multiplicative inverse property

C. Distributive propery D. Associative property of multiplication

28. Which of these values of x satisfies the inequality **-7x + 6 ≤ -8**

A. -2 B. 0 C. -7 D. 2

29. The equation **|-2x - 5| - 3 = k** has no solution if **k =**

A. -5 B. -3 C. 7 D. 0

30. What is the slope of the line perpendicular to the line **y = -5x + 9**?

A. 5 B. -5 C. 1/5 D. -1/5

31. If x > 0, which of the following must always be true?

I. $\sqrt{x} < x$ II. $x^2 > x$ III. $x^2 > \sqrt{x}$

A. I only
B. II only
C. III only
D. none of these

32. Find the value of k such that the quadratic equation $4x^2 + 7x + 3 = 2k$ have equal roots.
A. $\frac{3}{16}$
B. $-\frac{5}{11}$
C. $\frac{2}{27}$
D. $-\frac{1}{32}$

33. What is the slope of the line containing (0,1) and (6,8)?
A. $\frac{7}{6}$
B. $\frac{6}{7}$
C. $\frac{1}{2}$
D. 2

34. Three concentric circles whose radii are in the ratio 2:3:5. If the area of the smallest circle is 36π, what would be the area of the largest circle?
A. 75π
B. 81π
C. 100π
D. 225π

35. If a = 3c − 4 and b = 2(3 − c) what is 3b expressed in terms of a?
A. 10 – 2a
B. 5 – 2a

C. 10 - a
D. 5 - a

36. Which of the following cannot yield an odd integer when divided by 10?
A. The sum of two odd integers.
B. The product of two prime numbers.
C. The product of two odd integers.
D. The sum of three consecutive integers.

37. The value of $\mathbf{2^{-|-2|}}$ is

A. 4 B. 0.25 C. -4 D. -0.25

38. If $\mathbf{f(x) = 4x^3 - 4x^2 + 10}$, then $\mathbf{f(-2) =}$

A. 26 B. -38 C. 10 D. 38

39. In which quadrant do the lines x = 3 and y = -4 intersect?

A. I B. II C. III D. IV

40. Simplify: $\frac{5}{8} + \frac{1}{12} - \frac{5}{16}$
A. $\frac{19}{48}$
B. $\frac{15}{32}$
C. $\frac{15}{48}$
D. $\frac{19}{32}$

41. Subtract and simplify: $\frac{x^2+3x+2}{x^2+6x+5} - \frac{x^2+4x-12}{x^2+11x+30}$

A. $\frac{2}{x+5}$

B. $\frac{3}{x+2}$

C. $\frac{x+4}{x+6}$

D. $\frac{4}{x+5}$

42. Multiply and simplify: $\frac{2x+4}{x-5} \times \frac{3x-15}{x+2}$

A. 2x

B. 5

C. 4x

D. 6

43. Divide and simplify: $\frac{-2x+4}{x-1} \div (x - 2)$

A. x + 2

B. 2

C. $\frac{-2}{x-1}$

D. $\frac{x+1}{4}$

44. Solve the inequality $3(1 - 3x) \geq -3 (x + 27)$

A. $3 \geq x$

B. 7

C. 14x

D. $14 \geq x$

45. Simplify the equation $(3xy^5)^2 - 11x^2y^2(4y^4)^2$

A. $176x^2y^{10}$

B. $-176x^2y^{10}$

C. $-167x^2y^{10}$

D. $167x^2y^{10}$

46. Factor the following polynomial: $v^4 - 13v^2 - 48$
A. $v^4 - 13v^2 - 48 = (v^2 + 3)(v + 4)(v - 4)$
B. $v^4 + 13v^2 - 48 = (v^2 + 3)(v + 4)(v - 4)$.
C. $(v + 4) = v^2 - 4v + 4v - 16 = v^2 - 16$
D. $(v - 4) = v^2 - 4v + 4v - 16 = v^2 - 16$

47. Simplify the following radical expression: $(9\sqrt{a^2b})(3a\sqrt{b})$
A. $18ab^2$
B. 9ab
C. a^2b
D. $27a^2b$

48. Which choice below has the most points?
A. a line
B. a line segment
C. a ray
D. No determination can be made.

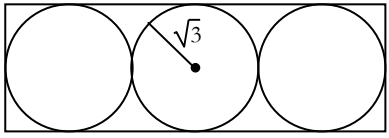
49. Lines are always
A. solid.
B. finite.
C. noncollinear.
D. straight.

50. Collinear points
A. determine a plane.
B. are circular.
C. are noncoplanar.
D. are coplanar.

51. The shortest distance between any two points is
A. a plane.
B. a line segment.
C. a ray.
D. an arch.

52. Which of the following decribes the values of x for which $16 - x^2 \geq 0$?
A. $x \leq -4$ or $x \geq 4$
B. $-4 \leq x \leq 4$
C. $0 \leq x \leq 4$
D. $x \geq 0$

53. Find the area of the rectangle below.



A. $12\sqrt{3}$
B. 36
C. 24
D. 18

54. If $16x + 8y$ represents the perimeter of a rectangle, and $5x - 2y$ represents its width, then its length is represented by the expression
A. $3x + 2y$
B. $3x + 6y$
C. $11x + 6y$
D. $21x + 6y$

55. A class contains 2 boys for every 1 girl. 75% of the boys have taken Algebra 2, whereas 50% of the girls have taken Algebra 2. What is the ratio of boys who have taken Algebra 2 to girls who have taken Algebra 2?
A. 2 : 1
B. 2 : 2
C. 3 : 1
D. 3 : 2

56. A patient must take his medication every 7 hours starting at 7:00 A.M., Sunday. On what day will the patient first receive his medication at 6 P.M.?
A. Monday
B. Tuesday
C. Wednesday
D. Thursday

57. Tommy had a bag containing colored marbles. The colors are red, green, and white. There are thrice as many green marbles as red marbles and twice as many white marbles as green marbles. If a marble is drawn from the bag, what is the probability of getting a white marble?

A. $\frac{3}{5}$
B. $\frac{2}{5}$
C. $\frac{1}{3}$
D. $\frac{3}{10}$

58. Find the values of **k** for which the equation $\frac{x^2}{k}$ - kx + k = 0 has two real roots.
A. k = 2
B. -2 < k < 2

C. $k < -2$ or $k > 2$
D. $-2 \leq k \leq 2$

59. A company's profits increased by 12% from 2010 to 2011 and by 18% from 2011 to 2012. By what percent did the company's profits increase from 2010 to 2012?
A. 37%
B. 54%
C. 12%
D. 32%

60. Solve for x: $9^{2x+5} = 81^{x+1}$
A. - 4
B. 4
C. 1
D. no solution

61. What is the average of the solution set of the inequality $|-2x + 4| < 6$?
A. -2
B. -3
C. 2
D. 3

Answer questions number 62 to 66 using the description below.

Ann, Bill, Carl, and Dan work in the same office building. Dan works in the basement while Ann, Bill, and Carl share an office on level X. At any given moment of the day, they are all typing at their desks. Bill likes a window seat; Ann likes to be near the bathroom; and Carl prefers a seat next to the door. Their three cubicles do not line up.

62. Level X can also be called

A. Plane Ann, Bill, and Carl.
B. Plane Ann and Bill.
C. Plane Dan.
D. Plane Carl, X, and Bill.

63. If level X represents a plane, then level X has
A. no points.
B. only three points.
C. a finite set of points.
D. an infinite set of points extending infinitely.

64. If Ann and Bill represent points, then Point Ann
A. has depth and length, but no width; and is noncollinear with point Bill.
B. has depth, but no length and width; and is noncollinear with point Bill.
C. has depth, but no length and width; and is collinear with point Bill.
D. has no depth, length, and width; and is collinear with point Bill.

65. If Ann, Bill, and Carl represent points, then Points Ann, Bill, and Carl are
A. collinear and noncoplanar.
B. noncollinear and coplanar.
C. noncollinear and noncoplanar.
D. collinear and coplanar.

66. A line segment drawn between Carl and Dan is
A. collinear and noncoplanar.
B. noncollinear and coplanar.
C. noncollinear and noncoplanar.
D. collinear and coplanar.

67. Which term of the arithmetic sequence 2, 5, 8... is equal to 227?
A. 74^{th} term
B. 75^{th} term
C. 76^{th} term
D. 77^{th} term

68. How many consecutive odd integers of an arithmetic sequence, starting from 9, must be added in order to obtain a sum of 15,860?
A. 119
B. 120
C. 121
D. 122

69. The semicircle of area 1250 pi centimeters is inscribed inside a rectangle. The diameter of the semicircle coincides with the length of the rectangle. Find the area of the rectangle.
A. 1500
B. 5000
C. 4500
D. 2500

70. Which of these numbers cannot be a probability?
A. -0.00001
B. 0.5
C. 0
D. 1

71. The blood groups of 200 people is distributed as follows: 50 have type **A** blood, 65 have **B** blood type, 70 have **O** blood type and 15 have type **AB** blood. If a person from this group is selected at random, what is the probability that this person has O blood type?
A. 1

B. 0.5
C. 0.35
D. 0.45

72. A number, x, is decreased by 40% then increased by 25%. What is the final result in terms of x?
A. 0.55x
B. 0.65x
C. 0.7x
D. 0.75x

73. The expression $(x + y)\,[z - (x - y)]$ is equivalent to which of the following?
A. $xz - x^2 + 2xy + y^2$
B. $xz - x^2 + yz + y^2$
C. $xyz + y^2 - xy + yz + y^2$
D. $xz + x^2 - yz - y^2$

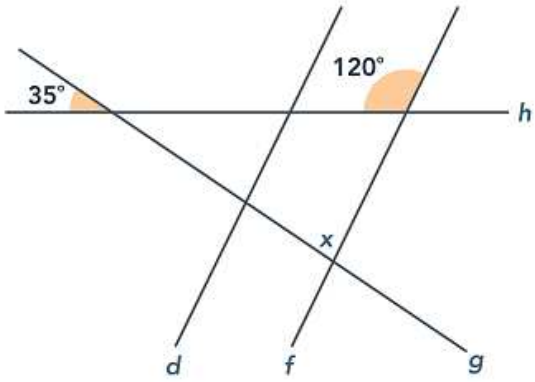
74. There are 32 marbles in a jar: 14 blue, 10 red, 5 green, and 3 yellow. Sally pulls one marble, randomly, from the jar. Without replacing the marble, she pulls another marble. What is the probability that both marbles will be red?
A. $\frac{41}{456}$
B. $\frac{44}{476}$
C. $\frac{45}{496}$
D. $\frac{40}{426}$

75. If $x + y = 7$ andn $x - y = 3$, what is $x^2 - y^2 = ?$
A. 4
B. 21
C. 25
D. 36

76. The circumference of a large wedding cake is 60 inches. If the cake is divided evenly into 12 slices, what is the length of the arc, in inches, made by 5 combined slices?
A. 10
B. 15
C. 20
D. 25

77. If $f(x) = x^2 + 2x + 2$, what is $f(x + h)$?
A. $x^2 + 2x + 2xh + 2h + h^2 + 2$
B. $2x^2 + 4hx + h^2 - 2x - 2h$
C. $x + h^2 + 2xh + 2 + h$
D. $x^2 + 4xh + 4h^2 + 2x$

78. In the figure below, lines d and f are parallel and the angle measures are as given. What is the value of x?



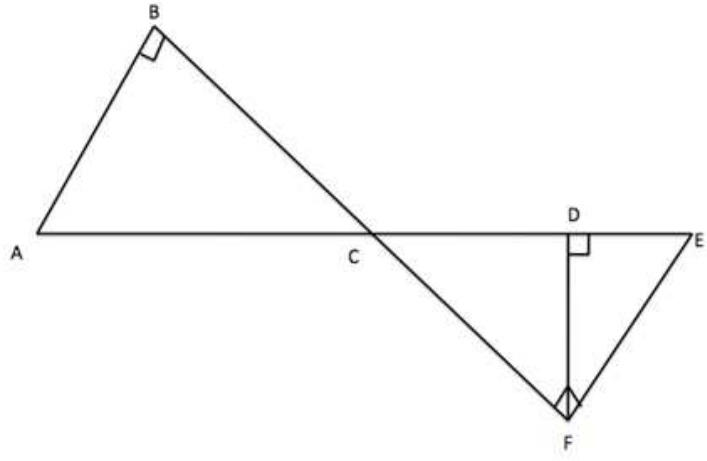
A. 35
B. 60
C. 85
D. 100

79. Which of the following represents the equation of the line that passes through the point (2, 3) with a slope of −⅓?
A. $y = 2x + 4$
B. $y = 4x + 2$
C. $y = -\frac{1}{3}x + \frac{11}{3}$
D. $y = -3x + \frac{11}{3}$

80. What is the sum of the x and y coordinates of the midpoint between the points (−2, 9) and (10, −4)?
A. 3.5
B. 5
C. 6.5
D. 7.5

81. A group of 6 students are going to have a vote to determine who should be President, Vice President, Secretary, and Treasurer with only 1 person per job. How many different groups can be formed from the 6 students?
A. 100
B. 250
C. 180
D. 360

82. In the figure below, *A*, *C*, *D*, and *E* are collinear; *B*, *C*, and *F* are collinear; and the angles at *B*, *D*, and *F* are right angles, as marked. Which of the following statements is NOT justifiable from the given information?



A. AB is parallel to EF.
B. BC is congruent to CF.
C. EF is perpendicular to BF.
D. Triangle BAC is similar to triangle DCF.

83. A triangle is composed of angles represented as: $3x + 10$, $-2x + 40$, and $x + 40$. What is the value of x?
A. 45
B. 50
C. 55
D. 60

84. If the number 89.8756 is rounded to the nearest hundredth, what will be the sum of the tenths and hundredths place of the resulting number?
A. 12
B. 14
C. 16
D. 20

85. The sum of 4 consecutive even integers is 36, what is the 3rd largest integer in the set?
A. 6
B. 8
C. 10
D. 12

86. A company will be using a pie chart to represent the total expenditures of its various departments. If the breakdown of its expenditures is as follows: 19% Research and Development, 33% Marketing, 22% Payroll. If the remaining expenditures represent $12,250, what is the dollar amount spent on Research and Development (Round to nearest unit)?
A. 8952
B. 7488
C. 8289
D. 5690

87. Solve for x: $\log 16^x = \log_8 1$
A. 0
B. 3
C. 16
D. 20

88. The diameter of a sphere measures 5 inches. If a cube is inscribed inside the sphere, sharing its diagonal with the sphere's diameter, what is the side length of the cube?
A. $5\sqrt{3}$ in.
B. $\frac{5\sqrt{3}}{3}$ in.
C. $\frac{3\sqrt{5}}{3}$ in.
D. $3\sqrt{6}$ in.

89. Find the sum of the series 91 + 85 + 79 + 73 + … + (-29).
A. 144
B. - 144
C. 651
D. – 651

90. What is the median of the first 100 non-negative integers?
A. 49
B. 49.5
C. 50
D. 50.5

91. What are the x-intercepts of the function $f(x) = x^3 + 3x^2 - x - 3$?
A. -3, -1, 1
B. -3, 0, 1
C. 0, 3
D. -3, 0

92. How many different ways can five students be seated in a round table?
A. 5
B. 10
C. 24
D. 25

93. If the ratio of milk cartons to juice boxes is 13:x and there are 39 milk cartons and 18 juice boxes, what is the value of x?
A. 4
B. 6
C. 8
D. 12

94. Give the simplest form of $\frac{tan^2\theta - sin^2\theta}{tan^2\theta \ sin^2\theta}$

A. 0
B. 1
C. - 1
D. tan ɵ

95. If a = −1 and b = 4, what is the difference between $a^3b + 3b$ and $a^3b + 3b^0$?

A. 5
B. -3
C. 9
D. 6

96. $4xyz * 2x^2y^2 * \frac{1}{3}z^3 * \frac{1}{4}y^2 * z$

The equation above is equivalent to which of the following?

A. $\frac{1}{3}xy^3z^3$
B. $\frac{2}{3}x^3y^5z^5$
C. $\frac{4}{3}x^2y^2z^2$
D. $\frac{3}{4}x^4y^2z^2$

97. What the ratio of the perimeters of two similar polygon if the ratio of their areas is 64 : 729?

A. 2 : 3
B. 4 : 9
C. 8 : 27
D. 16 : 81

98. If the average of **a** and **b** equals the average of **a**, **b**, and **c** then express **c** in terms of **a** and **b**.
A. a + b
B. 2 (a + b)
C. $\frac{a+b}{2}$
D. $\frac{a+b}{3}$

99. Rita is selling concert tickets. She sold 4 to her cousins, then gave half of what she had left to her brother for him to sell. She sold twelve more to her friends and had 15 tickets left to sell. How many tickets did she have in all?
A. 57
B. 58
C. 59
D. 60

100. Jane had only 100 candies after giving some of them to her playmates. She gave one-sixth to Catherine, two-fifths to Farah, and 4 pieces to Wendy. How many candies did Jane originally have?

A. 250
B. 240
C. 210
D. 150

5

Reading Comprehension

Directions: Read the paragraph/passage. Then read the questions that follow it. Choose the letter that corresponds to your answer.

For questions 1 – 7:

"The Witness Tree"
A Story from Kazakhstan

Two men came before a judge in his court. "Give me justice! My neighbor has robbed me!" said one man.

"He's lying," the other protested. "I've done nothing wrong." "Let me hear what you both have to say," the judge said.

The first man began. "A while ago I went on a journey. I left my life savings – a pot of gold coins – with my neighbor, he promised to guard the money while I was away. When I returned, he denied that he had ever seen my gold coins. He says I gave him nothing!"

"My neighbor is lying!" the second man said. "I know nothing about any pot of gold coins. He never gave me anything!"

"Before you left, did you tell anyone about leaving the coins with your neighbor? Did anyone see you give them to him?" the judge asked the first man.

The man replied, “For secrecy, I told no one. No one saw us because I asked my neighbor to meet me at night by a tree in the forest. There, in the dark, I gave him the coins.”

The judge frowned. “It is best to have a human witness. Since there is none, we will have to ask the tree. Go to the forest. Ask the tree if it saw you give a pot of coins to your neighbor. My clerk will go with you to write down the tree’s testimony.”

The man and the clerk set off for the forest. Meanwhile, the judge invited the neighbor to sit down.

After a while he asked the neighbor, “Do you think they’ve reached the tree yet?” The neighbor shook his head. “Not yet.”

Time passed. The judge asked again, “Do you think they’re there now?” “No, not yet,” the neighbor answered.

More time passed. The judge asked again, “Shouldn’t they be there by now?” The neighbor nodded. “Yes, they’re probably there.”

“Oh?” said the judge. “Didn’t you say your neighbor never gave you anything? How do you know where he’s going? How do you know how long it would take to arrive there if you’ve never been there? Bring back the gold you stole, or you’ll be in serious trouble.”

When the first man returned, the judge gave back his missing money.
“What did the tree say?” the judge asked. “Nothing!” the bewildered man replied. “But it revealed the truth anyway,” said the judge.

1. What was the man asked to do with his neighbor’s money?
A. Protect it
B. Bury it
C. Spend it
D. Divide it up

2. The judge invited the neighbor to sit and wait because the judge –
A. knew the man was tired
B. wanted to find out where the tree was
C. had a plan to discover the truth
D. wanted to talk to someone

3. People like the judge in this story can be described as –
A. dishonest
B. shrewd
C. generous
D. proud

4. The story tells the reader –
A. how the neighbor was punished
B. why the man had trusted his neighbor
C. which man was lying
D. how far the man and the clerk walked

5. A clue to predicting the outcome of the story occurs when the –
A. neighbor denies that he robbed the fi rst man
B. judge is asked to settle the matter
C. clerk goes with the man who was robbed
D. judge says, “Oh?”

6. Why would the robber assume that no one would find out his secret?
A. He thought that the judge was dishonest.
B. He thought that he was smarter than the judge.
C. He thought his neighbor would not be able to find the tree.
D. He knew that trees cannot talk.

7. This story was probably told in order to –
A. share a true experience
B. help the reader settle disagreements
C. help the reader become rich
D. teach a lesson

For questions 8 – 12:

Julia Morgan was born in 1872 and grew up in Oakland, California. At a time when it was uncommon for women to pursue higher education and full-time careers, she became one of the most successful and well-known architects in the United States.

As a child and teenager, Morgan spent most of her time in California, but she also made several trips to New York to visit her extended family. She became close with an older cousin and her cousin's husband, Pierre LeBrun, who was an architect in New York City. Sensing Morgan's fascination with engineering and design, LeBrun and his wife encouraged Morgan to continue her education. While most young women her age were planning large parties to celebrate their entrance into society, Morgan asked her parents if she could attend college instead. Impressed with their daughter's ambition, they agreed, and Morgan enrolled at the University of California in Berkeley to study civil engineering. Morgan was the only woman in her engineering program, and she excelled in her classes. She dreamed of a career in architecture and decided to apply to the Paris School of Fine Arts to continue her studies. Though it took her several years to gain acceptance to this competitive school, she never stopped trying. She was eventually admitted and quickly became successful at the institution. In fact, she graduated with her architecture degree in three years instead of the usual five.

Morgan then returned home to California and began her career as an architect in a large design firm. Among her many well-known clients was newspaper publisher William Randolph Hearst. He

hired Morgan to design several buildings, including his largest estate, Hearst Castle. During these years, Morgan developed her signature architectural style. She designed buildings using a variety of historic techniques while ensuring that they remained true to their Californian roots. She loved using redwood from Northern California and incorporating local pottery and ceramics into her designs.

Working for Hearst helped Morgan make a name for herself, and she soon had enough clients to open her own architectural practice. Her services were in high demand following the San Francisco earthquake of 1906. Thanks to her training as an engineer, Morgan understood how to construct buildings that could resist forceful movement in the event of another earthquake. She provided her services to many wealthy clients during these years.

But the projects dearest to Morgan's heart were those that promoted the education of women. She designed a series of buildings for the YWCA, an organization that provided classes and gathering spaces for young women. She also oversaw the master plan of Mills College, a women's college outside of her hometown of Oakland, and contributed six buildings to its campus.

8. Which sentence BEST states the main idea of the text?
A. Although it was unusual for the time, Julia Morgan attended a university and then became a successful architect.
B. Julia Morgan began her career in a large design firm and had many well-known clients.
C. Julia Morgan's early journeys to New York and Paris helped her develop a lifelong love of travel.
D. Through her work with the YWCA, Julia Morgan showed her commitment to the education of young women.

9. Why does the author write, "In fact, she graduated with her architecture degree in three years instead of the usual five" in paragraph 3?

A. to give an example of how quickly Morgan could design buildings
B. to help explain why people wanted to hire Morgan as an architect
C. to support the statement that Morgan was a strong student
D. to help illustrate Morgan's desire to return to California

10. What does the word "they" refer to in paragraph 4?
A. years
B. buildings
C. techniques
D. roots

11. What phrase is closest in meaning to make a name for herself in paragraph 5?
A. grow closer to her family
B. focus on her strengths
C. explore new interests
D. become well known

12. Why does the author begin paragraph 6 with the word "But"?
A. to build suspense around an important moment in Morgan's career
B. to show how people's views of Morgan's work have changed over time
C. to contrast two areas of Morgan's architectural work
D. to introduce an unexpected effect of one of Morgan's projects

For questions 13 – 18:

As Jay walked toward the beach that beautiful morning, the sun sparkled across the blue water, and the sand already felt warm under his toes. There was a slight breeze, but even in shorts and a T-shirt, Jay didn't feel the least bit cold. Yet despite the gorgeous scenery and the perfect temperature, Jay couldn't help feeling a bit

disappointed. After all, it was December, and as far as Jay was concerned, this was not how December should feel.

It had been over six months since Jay's family had relocated from their small mountain town in Colorado to this bustling beach community in southern California. It had been a time of adjustments: a new neighborhood, a new school, and new friends. Surprisingly, Jay had adapted far better than he would have expected. The one thing he had not been able to get used to was the seasons here. He still missed the mild spring, the hot summer, the crisp fall, and especially the cold winter of Colorado.

For Jay, winter had always been the perfect season. He enjoyed hearing boots crunch on fresh snow and drinking a mug of hot chocolate when it was freezing outside. Then, there was sledding, Jay's favorite winter activity. He'd eagerly climb to the top of the hill. Then, sitting on his wooden sled, he'd push off with his feet, flying downhill, steering with the rope, and grinning as he glided through the icy snow. Recently, his friends had been sending pictures of their sledding exploits. Jay couldn't help feeling jealous. Living in this mild climate just wasn't the same.

In an attempt to persuade Jay that beach life wasn't all bad, his friend Miguel invited Jay to his first surfing lesson. Miguel was already waiting, standing next to two large surfboards and wearing a wet suit.

"So, you miss the cold?" Miguel smiled, greeting Jay. "Well, around here, nothing compares to a surf in the Pacific." He tossed a wet suit at Jay. "Better put this on."

As Jay pulled on the wet suit, Miguel quickly went over some basic surfing techniques, clearly eager to get straight into the water. Jay scrambled after him.

The first time an ocean wave hit Jay, it completely took his breath away. By the time he was waist-deep, he could barely feel his toes. His cold fingers struggled to grip the surfboard as he pulled himself

on top. As another wave crashed over him, he could hardly hear Miguel shouting directions to him. Paddling with his arms, he turned toward shore as a giant wave approached. Suddenly, he felt the surfboard being lifted by the wave, and he was flying toward the beach. He held on tight, forgetting Miguel's instructions about how to stand. Soon, Jay heard a crunch as his board hit the shore, and he slid off onto the sand.

Although it had been a short ride, Jay felt a rush of excitement. The biting cold, the sudden speed, the struggle for control; for a moment, it had felt a lot like sledding, but even better.

Then, Miguel was standing over him, looking amused.
"Hey are you okay?" he asked. "Anytime you want to stop, we can go back to my house and have a hot chocolate. It's the best way to warm up."

"No. I want to give it another try!" Jay sputtered, smiling. Maybe he could learn to like it here after all.

13. What is the story mainly about?
A. playing a team sport
B. visiting an old friend
C. adjusting to a new place
D. learning to swim in the ocean

14. Which of the following is Jay's favorite thing about winter?
A. the cold temperature
B. the sound of the snow
C. drinking hot chocolate
D. sledding with his friends

15. What does <u>exploits</u> MOST LIKELY mean in paragraph 3?
A. slopes
B. trips

C. adventures
D. partners

16. What does <u>went over</u> MOST LIKELY mean as it is used in paragraph 6?
A. crossed
B. explained
C. passed by
D. read through

17. What is probably true about Jay's first surfing experience?
A. It was too cold for him.
B. It was too difficult for him.
C. It was just as he had expected it to be.
D. It was more enjoyable than sledding.

18. What is the BEST title for the story?
A. Going Home
B. A Surprising Day
C. The Best Vacation
D. Summers at the Beach

For questions 19 – 23:

"Fortune Tellers"

A young couple entered the restaurant in Andy's view. They were holding hands. Andy sat back down in his chair. He felt sick. He turned and faced his father, who was eating xôi.

"What's the matter, son?" asked his father. "I thought you were going to the birthday party."

“It’s too late.”

“Are you sure?”

Andy nodded. He looked at the plate of xôi. He wanted to bury his face in it.

“Hi, Andy.” A voice came from behind.

Andy looked up. He recognized the beautiful face, and he refused to meet her eyes. “Hi, Jennifer,” muttered Andy, looking at the floor.

“You didn’t miss much, Andy. The party was dead. I was looking for you, hoping you could give me a ride home. Then I met Tim, and he was bored like me. And he said he’d take me home…. Andy, do you want to eat with us? I’ll introduce you to Tim.”

Andy said, “No, I’m eating xôi with my father.”

“Well, I’ll see you in school then, okay?”

“Yeah.” And Andy watched her socks move away from his view.

Andy grabbed a chunk of xôi. The rice and beans stuck to his fingernails. He placed the chunk in his mouth and pulled it away from his fingers with his teeth. There was a dry bitter taste. But nothing could be as bitter as he was, so he chewed some more. The bitterness faded as the xôi became softer in his mouth, but it was still tasteless. He could hear the young couple talk and giggle. Their words and laughter and the sounds of his own chewing mixed into a sticky mess. The words were bitter and the laughter was tasteless, and once he began to understand this, he tasted the sweetness of xôi. Andy enjoyed swallowing the sticky mess down. Andy swallowed everything down— sweetness and bitterness and nothingness and what he thought was love.

Adapted from Nguyen Duc Minh, “Fortune Tellers.” in the collection American Eyes.©1994 by H. Holt

19. Who is telling this story?
A. Jennifer
B. Andy
C. Tim
D. An unnamed narrator

20. What is the most reasonable conclusion to make from the statement in the first paragraph, “He felt sick.”?
A. Eating xoi with his father gave Andy a stomachache.
B. Andy was upset when he saw Jennifer holding hands with Tim.
C. Andy was unhappy about the restaurant his father had selected.
D. Andy was upset with Jennifer for making him miss the party.

21. According to the passage, Tim would most likely describe the party as:
A. mysterious.
B. lively.
C. dull.
D. upsetting.

22. Based on the last paragraph, it can be most reasonably inferred that Andy’s increasing enjoyment of eating xôi was related to:
A. hearing Tim and Jennifer laughing and talking.
B. the fact that it stuck to his fingernails.
C. sitting at a table with Tim and Jennifer while he ate.
D. the fact that his father made the xôi.

23. This passage is mainly about the relationship between:
A. Andy and his father.
B. Andy and Tim.
C. Andy’s father and Tim.
D. Jennifer and Andy

For questions 24 – 31:

In the 1930s, why did author Zora Neale Hurston choose Eatonville, Florida, to be the first source for her collection of folklore?

I was glad when somebody told me, “You may go and collect Negro folklore.” In a way, it would not be a new experience for me.

When I pitched headforemost into the world I landed in the crib of Negroism. It was fitting me like a tight chemise. I couldn't see it for wearing it. It was only when I was off in college, away from my native surroundings, that I could stand off and look at my garment. Then I had to have the spy-glass of anthropology to look through.

I was asked where I wanted to work and I said, “Florida. It’s a place that draws people—Negroes from every Southern state and some from the North and West.” So I knew that it was possible for me to get a cross section of the Negro South in one state. And then I realized that I felt new myself, so it looked sensible for me to choose familiar ground.

I started in Eatonville, Florida, because I knew that the town was full of material and that I could get it without causing any hurt or harm. As early as I could remember, it was the habit of the men particularly to gather on the store porch in the evenings and swap stories. Even the women would stop and break a breath with them at times. As a child when I was sent down to the store, I'd drag out my leaving to hear more.

Folklore is not as easy to collect as it sounds. The ideal source is where there are the fewest outside influences, but these people are reluctant at times to reveal that which the soul lives by. I knew that even I would have some hindrance among strangers. But here in Eatonville I knew everybody was going to help me.

Adapted from Zora Neale Hurston, Mules and Men. ©1935 by J.B. Lippincott Company.

24. Which of the following does the author use as a metaphor for the culture in which she was born?
A. College
B. Garment
C. Southern state
D. Spy-glass

25. Based on the first paragraph, it is most reasonable to conclude that while in college the author:
A. decided to become a professor of anthropology.
B. decided that she did not want to live permanently in Eatonville, Florida.
C. felt that her teachers prevented her from studying what she wanted.
D. understood her own culture in new and different ways.

26. As it is used in the passage, the highlighted word material most nearly means:
A. diversity.
B. fabric.
C. information.
D. money.

27. In the second paragraph, the author indicates that one reason she chose to work in Florida was that she wanted to collect folklore:
A. from people of different geographical backgrounds.
B. where her teachers suggested she do so.
C. from a place she had never visited.
D. in a state far from where she grew up.

28. In the first paragraph, the author's claim, "In a way, it would not be a new experience for me," refers to the fact that:
A. she had already attended college in Florida.
B. she had already collected folklore in Florida for a college course.
C. she had already experienced new cultures by leaving home.
D. she was already familiar with the folklore she was to collect.

29. Based on information in the third paragraph, which of the following statements about the interactions on the porch can be most reasonably inferred?
A. The adults encouraged the author (as a child) to stay and tell stories.
B. Men were more frequent participants than were women.
C. Most of the storytellers had not grown up in Eatonville.
D. The author's parents sent her to the porch to hear the stories. E. One man in particular told most of the stories.

30. In the last paragraph, the author writes that folklore collecting:
A. is less difficult than it appears.
B. is easiest to accomplish in isolated places because people there freely reveal their innermost thoughts.
C. can be difficult in isolated places, even though the people there are the best sources.
D. is more difficult than publishing what has been collected.

31. Which of the following is NOT among the reasons the author gives for her decision to collect folklore in Eatonville?
A. The people of Eatonville would be grateful that she published their stories.
B. The people of Eatonville would have many stories for her collection.
C. Eatonville and its people are familiar to her.
D. She believes that she can collect stories without doing harm

For questions 32 – 35:

"What Methods Do Andean Farmers Use?"

Public debate around climate change and its effects on agriculture tends to focus on the large-scale industrial farms of the North. Farmers who work on a small scale and use traditional methods have largely been ignored. However, as the world slowly comes to terms with the threat of climate change, Native farming traditions will warrant greater attention.

In the industrial model of agriculture, one or two crop varieties are grown over vast areas. Instead of trying to use local resources of soil and water optimally and sustainably, the natural environment is all but ignored and uniform growing conditions are fabricated through large-scale irrigation and the intensive use of artificial fertilizers and pesticides. For example, a handful of basically similar potato varieties, all of which require nearly identical soil conditions, temperature, rainfall, and growing seasons, account for almost all global production. When these global crops are no longer suited to the environment in which they are grown, when their resistance to disease and pests begins to fail, or the climate itself changes, the best way to rejuvenate the breeding stock will be to introduce new genetic material from the vast diversity of crop varieties still maintained by indigenous peoples.

In contrast to the industrial model, Andean potatoes and other Andean crops such as squash and beans grown by Quechuan farmers exhibit extraordinary genetic diversity, driven by the need to adapt crops to the extraordinary climatic diversity of the region. Along the two axes of latitude and altitude, the Andes encompasses fully two-thirds of all possible combinations of climate and geography found on Earth. The Andean potato has been adapted to every environment except the depth of the rainforest or the frozen peaks of the mountains. Today, facing the likelihood of major disruptions to the climatic conditions for agriculture worldwide, indigenous farmers provide a dramatic example of crop

adaptation in an increasingly extreme environment. More importantly, Native farmers have also safeguarded the crop diversity essential for the future adaptations.

Adapted from Craig Benjamin, "The Machu Picchu Model: Climate Change and Agricultural Diversity." © 1999 by Craig Benjamin.

32. What is the main idea of the first paragraph?
A. Attention to Native farming practices will lead to greater awareness of the threat of climate change.
B. Popularity of small-scale farming in the North will lead to greater attention to Native farming practices.
C. Global demand for food will lead to increasing efficiency of large-scale farming in the North.
D. It will be worthwhile to include a greater focus on Native farming practices in public discussions concerning the threat of climate change.

33. In the second paragraph, the information about potato-growing practices in the industrial model of agriculture serves to:
A. give an example of a potential problem that Native farming practices could help to alleviate.
B. show the likely global consequences of a possible food shortage caused by industrial farming practices.
C. show how pests and disease are less effectively resisted by crops grown in the industrial farming model.
D. give an example of how public debate has had little effect on the agricultural practices of the North

34. The passage states that which of the following is true of the small number of potato varieties that account for most of the potatoes produced on Earth currently?
A. They are grown in the Andean region.
B. They all require very similar soil and climate conditions.
C. They are no longer suited to their environment.

D. They are based on genetic material from crops developed by indigenous peoples

35. As it is used in the passage, the underlined word fabricated most nearly means:
A. woven.
B. falsely stated.
C. fully clothed.
D. manufactured.

For questions 36 – 45:

The following passage is adapted from John F. Kennedy's Inaugural address delivered Friday, January 20, 1961.

So let us begin a new remembering on both sides that civility is not a sign of weakness, and sincerity is always subject to proof. Let us never negotiate out of fear. But let us never fear to negotiate. And if a beachhead of cooperation may push back the jungle of suspicion, let both sides join in creating a new endeavor, not a new balance of power, but a new world of law, where the strong are just and the weak secure and the peace preserved.

All this will not be finished in the first one hundred days. Nor will it be finished in the first one thousand days, nor in the life of this Administration, nor even perhaps in our lifetime on this planet. But let us begin.

In your hands, my fellow citizens, more than mine, will rest the final success or failure of our course. Since this country was founded, each generation of Americans has been summoned to give testimony to its national loyalty. The graves of young Americans who answered the call to service surround the globe.

Now the trumpet summons us again; not as a call to bear arms, though arms we need; not as a call to battle, though embattled we are; but a call to bear the burden of a long twilight struggle, year in and year out, “rejoicing in hope, patient in tribulation”—a struggle against the common enemies of man: tyranny, poverty, disease and war itself. Can we forge against these enemies a grand and global alliance, North and South, East and West, that can assure a more fruitful life for all mankind? Will you join in that historic effort?

In the long history of the world, only a few generations have been granted the role of defending freedom in its hour of maximum danger. I do not shrink from this responsibility; I welcome it. I do not believe that any of us would exchange places with any other people or any other generation. The energy, the faith, the devotion which we bring to this endeavor will light our country and all who serve it—and the glow from that fire can truly light the world.

And so, my fellow Americans: ask not what your country can do for you—ask what you can do for your country. My fellow citizens of the world: ask not what America will do for you, but what together we can do for the freedom of man.

Finally, whether you are citizens of America or citizens of the world, ask of us here the same high standards of strength and sacrifice which we ask of you. With a good conscience our only sure reward, with history the final judge of our deeds, let us go forth to lead the land we love, asking His blessing and His help, but knowing that here on Earth God’s work must truly be our own.

36. **The central idea that Kennedy expresses in the speech is that Americans**

A. are better off now than they have been in any other generation.
B. have lost their faith and should renew it.
C. are selfish and should do more for the benefit of mankind.
D. should defend freedom and fight tyranny.

37. Kennedy uses the metaphor of a “beachhead” and “jungle” in the first paragraph mainly to
A. paint a visual presentation to entertain his audience.
B. emphasize the difficulty of the battle he wants people to fight in a memorable way.
C. compare politics to ecology.
D. suggest that jungles are more prevalent than beaches.

38. The second paragraph serves mainly to
A. urge a call to arms.
B. set realistic expectations.
C. reveal criticism for the prior generation.
D. detail Kennedy’s own personal opinion.

39. In paragraph 4, “common” most nearly means
A. universal.
B. ordinary.
C. unimportant.
D. unnecessary.

40. The question marks that end the final sentences of paragraph 4 have primarily which effect?
A. They invite the readers to see themselves as active participants in the fight against tyranny.
B. They are placed there to soften the message that Americans cannot independently fight wars.
C. They allude to the idea that some questions, such as how Americans should behave, have no concrete answers.
D. They help to criticize previous generations for leaving the work of freedom unfinished.

41. According to Kennedy, which of the following is somewhat unique to this generation of Americans?
A. The opportunity to defend their freedom by fighting abroad.
B. Their ability to have a clean conscience.
C. The opportunity to defend freedom at a time when it is most severely threatened.
D. Their ability to fight tyranny.

42. Which choice provides the best evidence for the answer to the previous question?
A. “Can we forge against these enemies a grand and global alliance, North and South, East and West, that can assure a more fruitful life for all mankind?” (Paragraph 4, Sentence 2)
B. “In the long history of the world, only a few generations have been granted the role of defending freedom in its hour of maximum danger.” (Paragraph 5, Sentence 1)
C. “I do not believe that any of us would exchange places with any other people or any other generation” (Paragraph 5, Sentence 3)
D. “My fellow citizens of the world: ask not what America will do for you, but what together we can do for the freedom of man.” (Paragraph 6, Sentence 2)

43. In paragraph 6, the use of the phrase “my fellow Americans” is likely intended to
A. unite the audience with Kennedy in a fight towards a common goal.
B. recruit the audience to vote for Kennedy for president.
C. to highlight the differences between Kennedy and the audience.
D. encourage the audience to join the military to fight for freedom.

44. What idea does Kennedy mention in the final paragraph that is not discussed elsewhere in the passage?
A. Citizenship
B. The world outside America

C. Religion
D. Justice

45. Overall, the tone of the passage can BEST be described as
A. logical and calculated.
B. emotional and esoteric.
C. desperate and intellectual.
D. moralistic and impassioned.

For questions 46 – 55:

The following passage is adapted from R. Smith's "The Organic Way of Life."

Compared to the atmosphere, soil is a place where temperature fluctuations are small and slow. Consequently, soil animals are generally intolerant to sudden temperature changes and may not function well over a very wide range. That's why leaving bare earth exposed to the hot summer sun often slows plant growth and why many thoughtful composters either put down a thin mulch in summer or try to rapidly establish a cooling leaf canopy to shade raised beds. Except for a few microorganisms, soil animals breathe oxygen just like other living things and so are dependent on an adequate air supply. Where soil is airless due to compaction, poor drainage, or large proportions of very fine clay, soil animals are few in number.

The soil environment is generally quite moist, and even when the soil seems dry the relative humidity of soil air usually approaches 100 percent. Soil animals consequently have not developed the ability to conserve their body moisture and are speedily killed by dry conditions. When faced with desiccation they retreat deeper into the soil if there is oxygen and pore spaces large enough to move about. So we see another reason why a thin mulch that preserves

surface moisture can greatly increase the beneficial population of soil animals. Some single-cell animals and roundworms are capable of surviving stress by encysting themselves, forming a little “seed” that preserves their genetic material and enough food to reactivate it, coming back to life when conditions improve. These cysts may endure long periods of severe freezing and sometimes temperatures of over 150 degree F.

Inhabitants of leaf litter reside close to the surface and so must be able to experience exposure to dryer air and light for short times without damage. These are called primary decomposers. They spend most of their time chewing on the thick reserve of moist leaves contacting the forest floor. Primary decomposers are unable to digest the entire leaf. They extract only the easily-assimilated substances from their food: proteins, sugars and other simple carbohydrates and fats. Cellulose and lignin are the two substances that make up the hard, permanent, and woody parts of plants; these materials cannot be digested by most soil animals. Interestingly, there are a few larvae whose digestive tract contains cellulose-decomposing bacteria but these larvae have little overall effect.

By the time the primary decomposers are finished, the leaves have been mechanically disintegrated and thoroughly moistened, worked over, chewed to tiny pieces and converted into minuscule bits of moist excrement still containing active digestive enzymes. Many of the bacteria and fungi that were present on the leaf surfaces have passed through this initial digestion process alive or as spores waiting and ready to activate. Digestive wastes of primary decomposers are thoroughly inoculated with microorganisms that can consume cellulose and lignin. Even though it looks broken down, it has not yet fully decomposed. It does have a water-retentive, granular structure that facilitates the presence of air and moisture throughout the mass creating perfect conditions for microbial digestion to proceed. Both secondary and primary decomposers are necessary to complete the composting process.

46. According to the passage, which of the following is true about primary decomposers?
A. Most of them are unable to digest cellulose and lignin.
B. Most have a digestive tract that contains cellulose-decomposing bacteria.
C. They can encyst themselves to protect against unfavorable weather conditions.
D. They desiccate leaves, creating mulch.

47. Which choice provides the best evidence for the answer to the previous question?
A. Paragraph 1, Sentences 1-3 (“Compared to the atmosphere…shade raised beds.”).
B. Paragraph 2, Sentences 3-5 (“When faced with desiccation…when conditions improve.”).
C. Paragraph 3, Sentences 4-6 (“Primary decomposers are…by most soil animals.”).
D. Paragraph 4, Sentences 2-4 (“Many of the bacteria…yet fully decomposed.”).

48. What can be inferred about the atmosphere as it is described in paragraph 1?
A. Its inhabitants do not require as much moisture as creatures that live in soil.
B. Changes in temperature can be abrupt.
C. It is not a habitat for primary decomposers.
D. Single-cell organisms cannot encyst in the atmosphere.

49. Which choice provides the best evidence for the answer to the previous question?
A. Paragraph 1, Sentences 1–2 (“Compared to the atmosphere…a very wide range.”).
B. Paragraph 1, Sentence 3 (“That’s why leaving…shade raised beds.”).

C. Paragraph 1, Sentence 4 (“Except for a few…adequate air supply.”).
D. Paragraph 1, Sentence 5 (“Where soil is…are few in number.”).

50. As used in paragraph 2, the word “encysting” most nearly means
A. encroaching.
B. embellishing.
C. encrusting.
D. enclosing.

51. Which of the following is the function of the fourth paragraph?
A. To explain how soil animals thrive in certain temperatures and humidity levels.
B. To validate the importance of both primary and secondary decomposers in composting.
C. To provide a detailed summary of the composting process.
D. To explain how both primary and secondary decomposers aid decomposition.

52. Which of the following can be inferred from the passage?
A. Primary decomposers can digest entire leaves, while secondary decomposers cannot.
B. Composting requires only secondary decomposers.
C. Secondary decomposers cannot decompose proteins, sugars, or fats.
D. Secondary decomposers come from the leaf surfaces.

53. Which choice provides the best evidence for the answer to the previous question?
A. Paragraph 4, Sentence 1 (“By the time the…active digestive enzymes.”).
B. Paragraph 4, Sentence 2 (“Many of the bacteria and…and ready to activate.”).

C. Paragraph 4, Sentences 3-5 (“Digestive wastes of primary…not yet fully decomposed.”).
D. Paragraph 4, Sentence 6 (Both secondary and…the composting process.”).

54. Which of the following is NOT necessary for the composting process?
A. Air
B. Heat
C. Primary decomposers
D. Secondary decomposers

55. The author is primarily concerned with
A. comparing the characteristics of two types of soil animals.
B. describing the habits of a class of soil-dwelling microorganisms.
C. reviewing the conditions required for an ecological process to occur.
D. examining the environmental factors necessary for composting.

For questions 56 – 66:

Passage 1 is adapted from “The Snakes of Europe” by G.A. Boulenger. Originally published in 1913. Passage 2 is adapted from a recent guidebook for “How to Identify a Snake Species.”

Passage 1

When discussing coloration, we have first to distinguish between the color and the markings. The former is very often highly variable among snakes of the same species, to say nothing of the changes which may take place with age or with the condition of the individual snakes, whether before or after exuviation; it is not unusual to find among specimens from the same locality a great range of variation, from greyish-white to brown, or red, or black, as, for instance, in our

Common Viper. The latter afford more important characters, and often furnish valuable indications for the distinction of species; but even the disposition of the markings is subject to great individual variations, more likely to mislead than to help the inexperienced student in the discrimination of species.

It is therefore always advisable to resort in the first instance to structural characters for the purpose of specific identification, and to fall back on coloration only as a means of confirmation. If we were to be guided by color and markings alone, how could we believe that an adult four-lined Coluberquatuorlineatus is of the same species as the handsomely spotted Colubersauromates. Yet, if we compare the young of these two snakes we find them to be absolutely identical in their markings, and, in the absence of any structural differences, we are forced to conclude that they only represent two forms of the same species, of which the latter is the more primitive.
It is nevertheless a fact that, with a few exceptions, the markings, however variable they may be, are reducible to certain fundamental patterns to which the innumerable variations may be traced back, and their derivation followed and scientifically explained. Let us consider, for instance, another species of Coluber, highly variable in its markings: C. leopardinus, of which the typical form, so called from having been the first described and named, is not by any means to be regarded as the most primitive.

Passage 2

Identifying snakes has little to do with the myths surrounding poisonous and non-poisonous characteristics and has more to do with body type classification. There are very few tricks that can be used when determining the venom factor, one of which is pupil shape. All snakes with slit-shaped pupils are poisonous. Not all poisonous snakes have slit-shaped pupils. This one certainty is often difficult to ascertain as it requires you to get extremely close

to the snake to make your determination. In reality, snake experts use a methodical system to categorize and identify a snake once it has been found.

The first characteristic assessed is body length. Snakes are categorized into three classes: small, medium, and large. Once length is determined, the width of the snake is also examined. If possible, actual dimensions should be gathered. A snake's head shape can tell a lot about it, but does not necessarily mean anything in regards to venomous or non-venomous. Many vipers have triangular heads, but other snakes can resemble the same shape when they deliberately flatten their heads in aggression or anxiety. Knowing if the snake has a round, long, or oval head will help in identification but is not any proof of venom or lack thereof. Eye color, pupil shape, location on the face, and eye size should all be noted. These three identifiers: body length and width, head shape, and eye characteristics will narrow down the possibilities for species identification.

Color is usually very helpful in determining the type of snake you have located. Many snakes have distinctive patterns. Noting the patterns and the colors is very important. Sometimes the difference between a harmless snake and a deadly viper is one ring of coloration. Blotches usually refer to patterns with no symmetry. These markings are often rectangular with darker edges. If a diamond pattern is noted, color and color pattern should be noted as well. Are there speckles (flecks of color) or spots (large or small defined, solid color circles)? Ring patterns appear like bands around the width of the snake. Stripes are patterns lengthwise down the body. Some snakes are one color on the dorsal side and a different color on the belly. Distinctive markings on the head and neck may be present. Lastly, some snakes have no markings at all and are one, solid color.

Tail characteristics are another guide to identifying a snake. The tail is defined as the length of body stretching beyond the snake's anus. Tails can end with a rattle. They can be pointed or rounded.

Some have specific patterns. Experts are able to use the number and arrangement of scales on a snake to further assist in the identification process. Some snakes are almost identical, and it is these snakes that need the assistance of habitat evaluation. If a snake cannot be identified by appearance alone, the habits of the species will come into play. Some snakes like rocky soil. Some snakes like sand. Some snakes eat only certain animals, or will only be found out at certain times of day. Not all snakes are found everywhere. Having a good, basic knowledge of the local area will help tremendously.

The important thing to remember is that most "quick" identification advice is based loosely on truth. You cannot always be certain of a snake's venom potential just by the shape of its head, the color of its body, the habitat it lives in, or the color and shape of its eyes.

56. According to Passage 1, what is true about Coluberquatuorlineatus and Colubersauromates?
A. They have identical markings.
B. The Coluberquatuorlineatus is unrelated to the Colubersauromates.
C. The adult snakes do not resemble their young.
D. Colubersauromates evolved before Coluberquatuorlineatus.

57. Which choice provides the best evidence for the answer to the previous question?
A. Paragraph 2, Sentence 1 ("It is … confirmation)
B. Paragraph 2, Sentence 3 ("Yet, if we…primitive.")
C. Paragraph 3, Sentence 1 ("It is…explained.")
D. Paragraph 3, Sentence 2 ("Let us consider…primitive.")

58. In Passage 1, the author is primarily concerned with doing which of the following?
A. Establishing a framework for additional discussion.

B. Pointing out features unique to a particular animal species.
C. Explaining evolutionary trends in snake color and markings.
D. Comparing the appearance of multiple species.

59. Which of the following inferences about snake coloring and markings is most supported by Passage 1?
A. Coloring can be classified by a finite number of reducible patterns.
B. Coloring can be as reliable an indicator of species as markings.
C. Two different species of snake will not have the same coloring and markings.
D. Coloring sometimes helps distinguish snake species.

60. Which of the following best describes the relationship of the statement about C. leopardinus in Passage 1 to the passage as a whole?
A. It presents a hypothesis that disproves an earlier statement.
B. It offers an alternate interpretation of a previous idea.
C. It distills the broader point of the passage into a specific example.
D. It answers an anticipated question that the reader might have based on prior information.

61. Unlike Passage 1, Passage 2 emphasizes that which of the following can be used to identify a snake species?
A. Color and tail characteristics.
B. Body markings and head shape.
C. Body length and markings.
D. Pupil shape and body width.

62. How are the authors of the passages different in their beliefs regarding snake classification?

A. The first believes one method of classification is less valuable than another form, while the second believes all forms of classification are helpful.
B. The first does not believe that it is possible to identify two separate species without looking at the markings, while the second believes it is.
C. The first believes it is possible to determine whether a snake is poisonous based on its physical characteristics, while the second does not.
D. The first does not believe that variable markings can be scientifically explained, while the second posits that they can be if enough analysis is done on each specific snake.

63. As used in paragraph 3 of Passage 2, the word “dorsal” most nearly means
A. anterior.
B. ventral.
C. back.
D. headmost.

64. According to Passage 2, how could it be determined that a snake is poisonous by examining it?
A. If the snake’s body has specific markings.
B. If the snakes pupils are a specific shape.
C. If the snake’s tail has a specific shape.
D. It cannot generally be determined.

65. Both the author of Passage 1 and the author of Passage 2 would agree with which of the following statements?
A. It is relatively easy to categorize a snake if you can get close enough to it.
B. Snakes can be easily categorized by the color of their skin and the markings on their bodies.

C. Snake categorization may be more challenging than it first appears.
D. Snake categorization should only be attempted by a scientific professional with experience working with reptiles.

66. Which of the following most likely describes “habitat evaluation” as mentioned in Passage 2?
A. Recording the climate, windfall, temperature, and humidity of the area in which a snake has been found.
B. Recording the length, width, and weight of each individual snake found in the habitat.
C. Recording the types of soil found in the area in which snakes have been seen.
D. Recording the regular behavior of the snake in relation to its environment.

For questions 67 – 71:

[1]O that thou wert as my brother,
that sucked the breasts of my mother!
when I should find thee without,
I would kiss thee;
yea, I should not be despised.

[2]I would lead thee,
and bring thee into my mother's house,
who would instruct me:
I would cause thee to drink of spiced wine of the juice of my pomegranate.

[6]Set me as a seal upon thine heart,
as a seal upon thine arm:
for love is strong as death;
jealousy is cruel as the grave:
the coals thereof are coals of fire,

which hath a most vehement flame.

[7]Many waters cannot quench love,
neither can the floods drown it:
if a man would give all the substance of his house for love,
it would utterly be contemned.

67. Which of the following does not express the main characteristic of love being conveyed in the passage?
A. Consuming
B. Eternal
C. Insatiable
D. Impassioned

68. Which of the following is a synonym of the word *vehement* as used in the passage?
A. Agonizing
B. Violent
C. Imperturbable
D. Ardent

69. The word *contemned* in the last line is similar in meaning with the following EXCEPT:
A. disdained
B. despised
C. condemned
D. wiped out

70. Which of the following can the passage be a metaphor for?
A. Love and its possibility of violence
B. The negative tendencies of love
C. The love between a brother and a sister
D. The characteristic intensity of love

71. Who is the persona speaking in the passage?
A. The female beloved
B. The sister of the beloved
C. God
D. The male lover

For questions 72 – 76:

72. Ang paksa ng komiks ay ukol sa
    A. paglalaro ng online games
    B. paggamit ng mga social networking sites
    C. kaalwanan ng gawain gamit ang internet
    D. pamimili online

73. Ang mga karakter sa komiks ay mahihinuhang
    A. nagsusuri ukol sa tulong ng internet sa tao
    B. namamangha sa gamit ng internet
    C. nanghihinayang sa pisikal na interaksyon sa tao
    D. naiinis sa naibibigay ng internet sa lipunan

74. Masasabing ang pangyayari ay naganap sa
    A. pamilihan.
    B. isang bahay
    C. paaralan
    D. gitna ng kalsada.

75. Ayon sa komiks, ang lahat ng gawain ay
    A. napapahirap at nagiging komplikado
    B. naiiba at nawawalan ng katapatan
    C. nagpapalayo ng damdamin ng mga tao
    D. napapadali ngunit wala nang pisikal na interaksyon

76. Ang mga karakter sa komiks ay
    A. nagsasagutan.
    B. nanlilibak.
    C. nagtatalakayan.
    D. nagtatanungan.

For questions 77 – 81:

Isang Agila ang kasalukuyang lumilipad sa kalawakan, buong yabang niyang iniladlad at ibinuka ang kanyang malalapad na pakpak. Habang patuloy siya sa kanyang paglipad ay nakasalubong niya ang isang maliit na ibong Maya at hinamon niya ito.

"Hoy Maya, baka gusto mong subukan kung sino sa ating dalawa ang mabilis lumipad?" buong kayabangan ni Agila, kaya naipasya niyang tanggapin ang hamon nito para maturuan niya ng leksyon.

"Sige! Tinatanggap ko ang hamon mo. Kailan mo gustong magsimula tayo?"

Natuwa ang Agila, hindi niya akalain na tatanggapin nito ang hamon niya.

"Aba, nasa sa iyon 'yan. Kung kailan mo gusto," buong kayabangang sagot ni Agila.

Napatingin ang Maya sa kalawakan. Nakita niyang nagdidilim ang kalangitan, natitiyak niyang ang kasunod niyon ay malakas na pag-ulan.
"Sige Agila, gusto kong umpisahan na natin ang karera ngayon na. Pero, para lalong maging masaya ang paligsahan natin ay kailangang bawat isa sa atin ay magdadala ng kahit anong bagay. Halimbawa ang dadalhin ko ay asukal ikaw naman ay bulak."

Tumawa ang Agila sa narinig na sinabi ni Maya. Tuwang-tuwa talaga siya, bakit nga naman hindi, mas hamak na magaan ang bulak na dadalhin niya kumpara sa mabigat na asukal na dadalhin naman nito.

"O ano, Agila, payag ka ba?" untag ni Maya.

"Aba oo, payag na payag ako."

"Sige doon tayo mag-uumpisa sa ilog na 'yon at doon tayo hihinto sa tuktok ng mataas na bundok na iyon," wika pa ni Maya.

Gusto nang matawa ni Agila sa katuwaan dahil tiyak na ang panalo niya, subalit hindi siya nagpahalata.

At sisimulan nga nila ang paligsahan.

Habang nasa kalagitnaan na sila ng kalawakan ay siya namang pagbuhos ng malakas na ulan. Nabasa ang bulak na dala-dala ni Agila kaya bumigat ito nang husto. Nahirapan si Agila , kaya bumagal ang lipad niya.

Samantalang ang mabigat sa asukal na dala-dala naman ni Maya ay nabasa din ng ulan kaya natunaw ito. Napabilis ang lipad ni Maya.
Dahil sa pangyayari, unang nakarating si Maya sa tuktok ng mataas na bundok at tinalo niya ang mayabang na Agila.

77. Hinamon ng agila ang maya
    A. dahil ito ay nababagot
    B. dahil gusto niyang ipakita na mas mabilis siyang lumipad
    C. dahil nais niyang may makasamang lumipad
    D. dahil nais niyang patunayan na siya ay malaki

78. Ang maya ay masasabing
    A. matino
    B. mabikas
    C. lubos na mapagtiwala
    D. matalino

79. Samantala, masasabing ang agila ay
    A. mapagmataas
    B. mapagbalatkayo
    C. malikahain
    D. matalas mag-isip

80. Ang basahing ito ay isang uri ng
    A. nobela.
    B. tula.
    C. pabula.
    D. maikling kwento.

81. Ang aral na makukuha sa kwento ay
    A. ang lahat ng binhi, gaano man kaliit, magbubunga din.

B. daig ng matulin ang masipag.
C. huwag tahakin ang bagong daan ng walang sapat na kagamitan.
D. huwag maging mayabang at huwag ding maliitin ang kakayahan ng ating kapwa.

For questions 82 – 86:

While narrativity is a type of meaning, interactivity, when put in the service of entertainment, is a type of play. The combination of narrativity and interactivity oscillates between two forms: the *narrative game*, in which narrative meaning is subordinated to the player's actions, and the *playable story*, in which the player's actions are subordinated to narrative meaning. Or, to put it differently, in a narrative game, story is meant to enhance gameplay, while in a playable story, gameplay is meant to produce story.

The concepts of narrative game and playable story reflect, in their opposition, the distinction made by the French sociologist Roger Caillois between two types of game: *ludus* and *paidia*. The best example of paidia games is building imaginary scenarios with toys, using them, in the words of Kendall Walton, as "props in a game of make-believe." These games do not aim at a specific goal, and they do not lead to losing or winning. The pleasures of paidia reside in the free play of the imagination, in adopting foreign identities, in forming social relations, in building objects, in exploring an environment, and above all in creating representation: paidia games are fundamentally mimetic activities. If there are rules, they are spontaneously created by the participants, as when a group of children decides that a certain tree will be the house of the wolf, and they can be renegotiated on the fly. Ludus games, by contrast, are strictly controlled by pre-existing rules accepted by the participants as part of a basic game contract, they lead to clearly

define states of winning or losing, and their pleasure resides in the thrill of competition and in the satisfaction of solving problems.

What I call a narrative game is a ludus activity. If there is one contribution that digital technology has made to the design of games, it is their narrativization. By this term I mean the transformation of what used to be abstract playfields (such as chess boards and football fields) into concrete fictional worlds populated by recognizable objects and indivituated characters. The main difference between an abstract game like soccer or chess and a narrativized video game like *Half-Life*, *Max Payne*, or *Grand Theft Auto* is that in an abstract game the goals of players are only made desirable by the rules of the game (Who would, in real life, be interested in kicking a ball into a net, or in moving tokens on a board?), while in a narrativized game the player pursues the kind of goals that people may form in everyday life or in their fantasies. But in the intensity of the action, players may forget whether they are terrorists or counter-terrorists, space aliens or defenders of the earth: in a narrative game, the player plays to win, to beat the game, and story is mostly a lure into the game world.

While ludus inspires narrative games, the spirit of paidia infuses playable stories. In a playable story there is no winning or losing: the purpose of the player is not to beat the game, but to observe the evolution of the story world. Playable stories induce a much more aesthetic pleasure than narrative games because the player is not narrowly focused on goals. For me the essence of the playable story is captured by what I once heard a little girl say about the game The Sims: “Guess what I managed to do with my Sims? I made the father and the mother drown in the pool, and now the kids are alone in the house and they can do whatever they want.”

82. Which of the following statements would the author be likely to agree?

A. In a playable story, the pleasure of the game did not come from reaching a state defined by rules, but in coaxing a good story out of the system.
B. The pleasure of narrative game resides in the vast imagination of the participants.
C. The users in both playable story and narrative game aim to manipulate one or more characters in the fictional world.
D. Both playable story and narrative game aim to manipulate.

83. Which of the following ideas is NOT included in this passage?

A. Paidia games are primarily imitative activities.
B. Ludus games are strictly manipulated by a narrative created by the participants.
C. In a playable story, the purpose of the player is to observe the development of the storyworld.
D. In a narrativized game, the goals of the player are based from his/her reality and fantasy.

84. Which of the following is not a situation in a narrativized game?

A. A police rescued people in danger.
B. A girl decided that the forest will be her home.
C. A group of students saved the world from space aliens.
D. A pedestrian stole cars and killed people.

85. According to the passage, which of the following is not a characterisitc of paidia?

A. The games have no specific rules, and do not aim at specific goal.
B. The rules are instinctively created by the participants.
C. The games are confined with pre-existing rules established by the participants. The games do not lead to winning or losing.

86. Which two main organizational schemes can be identified in this passage?

A. Chronological order and compare and contrast
B. Order by topic and compare and contrast
C. Hierarchical order and order by topic
D. Hierarchical order and chronological order

For questions 87 – 93:

SA PAMILIHAN NG PUSO

Huwag kang iibig nang dahil sa pilak
pilak ay may pakpak
dagling lumilipad
pag iniwan ka na, ikaw'y maghihirap.

Huwag kang iibig nang dahil sa ganda
ganda'y nagbabawa
kapag tumanda na
ang lahat sa mundo'y sadyang nag-iiba.

Huwag kang iibig sa dangal ng irog
kung ano ang tayog
siya ring kalabog
walang taong hindi sa hukay nahulog.

Huwag kang iibig dahilan sa nasang
maging masagana
sa aliw at tuwa
pagkat ang pag-ibig ay di nadadaya...

Kung ikaw'y iibig ay yaong gusto mo
at mahal sa iyo
kahit siya'y ano,
pusong-puso lainang ang gawin mong dulo.

Kung ikàw'y masawi'y sawi kang talaga
ikaw na suminta
ang siyang magbata;
kung maging mapalad, higit ka sa iba.

Sa itong pag-ibig ay lako ng puso
di upang magtubo
kaya sumusuyo
pag-ibig ay hukay ng pagkasiphayo.

87. Sino ang persona sa loob ng tula?
    A. Isang baguhang mangingibig
    B. Isang mangingibig na nagdaan na sa maraming kasawian
    C. Isang maalam na mangingibig
    D. Isang mangingibig na puno ng hinanakit

88. Para sa persona, ang pag-ibig ay
    A. nagdudulot ng pighati.
    B. pinagmumulan ng opresyon.
    C. susi sa maluwalhating pagsasama.
    D. nagbibigay sigla sa lahat.

89. Ano ang layunin ng persona sa loob ng tula?
    A. magbigay-babala
    B. magturo
    C. magpayo
    D. maglabas ng hinanakit

90. Alin sa mga sumusunod ang hindi ipinahihiwatig ng persona?
A. Huwag iibig nang dahil sa pera.
B. Huwag iibig nang dahil sa itsura.
C. Huwag iibig nang dahil lamang sa sarling kagustuhan.
D. Huwag iibig nang dahil sa katayuan ng mangingibig.

91. Ano ang implikasyon ng “pilak ay may pakpak” sa mensahe ng tula?
A. walang mararating ang pera
B. madaling nauubos ang pera
C. hindi nawawala ang pera
D. higit na mahalaga ang pera

92. Sino ang kinakausap ng persona sa loob ng tula?
A. ang kanyang mangingibig
B. ang kanyang inibig
C. isang mangingibig
D. isang iniibig

93. Anong uri ng tula ang binasa?
A. tulang may sukat
B. tulang may tugma
C. tulang may sukat at tugma
D. malayang taludturan

For questions 94 – 100:

The Filipinos were found to be a literate people by the Spanish colonizers when they reached the islands in 1521. They found the natives with systems of writing, with language of their own in many dialects, and with education and law to wit. Father Chirino wrote that the "islanders are much given to reading and writing and there is hardly a man, much less a woman, who does not read and write

in letters proper to the island of Manila, very different from those of China, Japan and India" (1969, p. 280). The early Filipinos wrote on bamboos, barks of trees, leaves of plants which are perishable materials, hence no extant specimens exist today. The Spaniards brought the Roman alphabet which eventually superseded the old Tagalog syllabary.

The pre-Spanish Filipino had a syllabary derived from the south Indian development of the Brahmi scripts used in the Asoka Inscriptions about 300 years before Christ. According to J.R. Francisco, there are at least six theories in the introduction of the Tagalog syllabary (the sixth theory is the author's). The first theory is credited to Isaac Taylor which states that the system of writing, particularly Tagalog was introduced from the coast of Bengal sometime before the 8th century A.D. The second theory was advanced by Fletcher Gardner who said that the Philippine scripts came from India during Asoka's reign. He said that Hindu missionaries visited the islands and established Manila as the center of Vedic learning. David Diringer advanced the theory that the Indonesian script had its origin in India and that this constituted the earliest type of Philippine syllabic writing which was brought to the Philippines by the intervention of Buginese scripts from the 5th century A.D. Of interest is the theory of Constantino Lendayno who noted that the Philippine script was the invention of the Filipino people without any foreign influences. The fourth theory is called the Dravidian theory by V. A. Makarenko which states that Tagalog, both language and script originated from Tamil, an Indian language. This was further enhanced by H. Otley Beyer who said that these scripts reached the Philippines from the Asian continent about 200 B.C. The sixth theory, expounded by J. R. Francisco himself, states that the Sumatran scripts are similar to the Philippine scripts, particularly the Palawan Tagbanua and the Mindoro Mangyan and considering the movement of culture from one region to another or in reverse, this was quite possible.

The ancient Filipino syllabary was non-pictographic, and resembled closely the scripts of Buginese, Java, Batak, etc. There were sixteen scripts used by regional groups, i.e., Tagalog, Bisayan,

Pampangan, etc. The scripts show certain similarities in their origin and tradition. The Tagalog character was probably the most important script of the period. It consisted of seventeen letters–14 consonants and 3 vowels. These vowels acquire a modified pronunciation when the vowel mark is placed either above or below the consonant.

The direction of writing was sometimes from top to bottom or right to left or left to right then top to bottom horizontally. This is a problem in reading the ancient Philippine script as no one knows which direction the writers wrote. Authorities differ in their opinion on the direction of writing.

Books and Bookmaking in the Philippines by R. M. Vallejo, National Commission for the Culture and the Arts

94. What is the purpose of the author for writing the passage?
A. To describe the way of life which Filipinos had before the coming of the Spaniards to the country
B. To narrate and recount the development of writing in the Tagalog syllabary
C. To explain the different theories which surround the introduction of the Tagalog syllabary in the country
D. To inform the readers of the existing organized system of writing in the Philippines even before colonizers had arrived

95. Which statement from the passage encapsulates its main idea?
A. “The Spaniards found the natives with systems of writing, with language of their own in many dialects, and with education and law to wit.”
B. “The Spaniards brought the Roman alphabet which eventually superseded the old Tagalog syllabary.”
C. “The pre-Spanish Filipino had a syllabary derived from the South Indian development of the Brahmi
scripts used in the Asoka Inscriptions about 300 years before Christ.”

D. “Father Chirino wrote that the "islanders are much given to reading and writing and there is hardly a man, much less a woman, who does not read and write in letters proper to the island of Manila, very different from those of China, Japan, and India.""

96. Based on the passage, which of the following statements is false?
A. The pronunciation of vowels of the Tagalog characters was altered depending on the placement of the vowel mark on the consonant.
B. The ancient Filipino syllabary resembled closely the scripts of Buginese, Java, and Batac languages, which were largely pictographic.
C. Authorities are not able to arrive at an agreement as to the direction of writing that the Tagalog script had.
D. Francisco, in writing about Philippine writing, also developed his own theory on the introduction of Tagalog syllabary.

97. The structure of the passage is:
A. descriptive
B. expository
C. informative
D. argumentative

98. The word *extant* as used in the passage is similar in meaning with the word:
A. durable
B. inexistent
C. living
D. extensive

99. According to the author, which among these is not a theory on the development of the Tagalog syllabary?
A. Hindu missionaries visited the Philippine islands and established Manila as the center of Buginese
learning.
B. About 200 B.C., Tamil, an Indian language, reached the Philippines from the Asian continent and
influenced Tagalog language, and script.
C. The script of the Tagalog syllabary was solely a Filipino invention.
D. It was before the 8th century AD that the Tagalog system of writing was introduced from the coast of Bengal.

100. What is the tone of the author in the passage?
A. Objective
B. Serious
C. Melancholic
D. Evocative

For questions 101 – 110:

This passage is adapted from Edith Wharton's "The House of Mirth."

Selden paused in surprise. In the afternoon rush of the Grand Central Station his eyes had been refreshed by the sight of Miss Lily Bart.

It was a Monday in early September, and he was returning to his work from a hurried dip into the country; but what was Miss Bart doing in town at that season? If she had appeared to be catching a train, he might have inferred that he had come on her in the act of transition between one and another of the country-houses which

disputed her presence after the close of the Newport season; but her desultory air perplexed him. She stood apart from the crowd, letting it drift by her to the platform or the street, and wearing an air of irresolution which might, as he surmised, be the mask of a very definite purpose. It struck him at once that she was waiting for someone, but he hardly knew why the idea arrested him. There was nothing new about Lily Bart, yet he could never see her without a faint movement of interest: it was characteristic of her that she always roused speculation, that her simplest acts seemed the result of far-reaching intentions.

An impulse of curiosity made him turn out of his direct line to the door, and stroll past her. He knew that if she did not wish to be seen she would contrive to elude him; and it amused him to think of putting her skill to the test.

“Mr. Selden—what good luck!”

She came forward smiling, eager almost, in her resolve to intercept him. One or two persons, in brushing past them, lingered to look; for Miss Bart was a figure to arrest even the suburban traveller rushing to his last train.

Selden had never seen her more radiant. Her vivid head, relieved against the dull tints of the crowd, made her more conspicuous than in a ball-room, and under her dark hat and veil she regained the girlish smoothness, the purity of tint, that she was beginning to lose after eleven years of late hours and indefatigable dancing. Was it really eleven years, Selden found himself wondering, and had she indeed reached the nine-and-twentieth birthday with which her rivals credited her?

“What luck!” she repeated. “How nice of you to come to my rescue!”

He responded joyfully that to do so was his mission in life, and asked what form the rescue was to take.

“Oh, almost any—even to sitting on a bench and talking to me. One sits out a cotillion—why not sit out a train? It isn’t a bit hotter here than in Mrs. Van Osburgh’s conservatory—and some of the women are not a bit uglier.” She broke off, laughing, to explain that she had come up to town from Tuxedo, on her way to the Gus Trenors’ at Bellomont, and had missed the three-fifteen train to Rhinebeck. “And there isn’t another till half-past five.” She consulted the little jewelled watch among her laces. “Just two hours to wait. And I don’t know what to do with myself. My maid came up this morning to do some shopping for me, and was to go on to Bellomont at one o’clock, and my aunt’s house is closed, and I don’t know a soul in town.” She glanced plaintively about the station. “It IS hotter than Mrs. Van Osburgh’s, after all. If you can spare the time, do take me somewhere for a breath of air.”

He declared himself entirely at her disposal: the adventure struck him as diverting. As a spectator, he had always enjoyed Lily Bart; and his course lay so far out of her orbit that it amused him to be drawn for a moment into the sudden intimacy which her proposal implied.

“Shall we go over to Sherry’s for a cup of tea?”

She smiled assentingly, and then made a slight grimace.

“So many people come up to town on a Monday—one is sure to meet a lot of bores. I’m as old as the hills, of course, and it ought not to make any difference; but if I’M old enough, you’re not,” she objected gaily. “I’m dying for tea—but isn’t there a quieter place?”

He answered her smile, which rested on him vividly. Her discretions interested him almost as much as her imprudences: he was so sure that both were part of the same carefully-elaborated plan. In judging Miss Bart, he had always made use of the “argument from design.”

“The resources of New York are rather meagre,” he said; “but I’ll find a hansom first, and then we’ll invent something.” He led her through the throng of returning holiday-makers, past sallow-faced girls in preposterous hats, and flat-chested women struggling with paper bundles and palm-leaf fans. Was it possible that she belonged to the same race? The dinginess, the crudity of this average section of womanhood made him feel how highly specialized she was.

A rapid shower had cooled the air, and clouds still hung refreshingly over the moist street.

“How delicious! Let us walk a little,” she said as they emerged from the station.

They turned into Madison Avenue and began to stroll northward. As she moved beside him, with her long light step, Selden was conscious of taking a luxurious pleasure in her nearness: in the modelling of her little ear, the crisp upward wave of her hair—was it ever so slightly brightened by art?—and the thick planting of her straight black lashes. Everything about her was at once vigorous and exquisite, at once strong and fine. He had a confused sense that she must have cost a great deal to make, that a great many dull and ugly people must, in some mysterious way, have been sacrificed to produce her. He was aware that the qualities distinguishing her from the herd of her sex were chiefly external: as though a fine glaze of beauty and fastidiousness had been applied to vulgar clay. Yet the analogy left him unsatisfied, for a coarse texture will not take a high finish; and was it not possible that the material was fine, but that circumstance had fashioned it into a futile shape?

101. As used in paragraph 1, the word “refreshed” most nearly means
A. recreated.

B. reanimated.
C. repaired.
D. reinvigorated.

102. In the context of the passage, the author's use of the sentence, "There was nothing new about Lily Bart," (paragraph 2) is primarily meant to convey the idea that
A. Lily Bart's income doesn't allow her to keep up with the latest fashions.
B. Lily Bart is twenty-nine years old, and older than most of Selden's peers.
C. Selden and Lily have been acquaintances for some time, and Selden could read her behavior.
D. Lily's manner and behavior has a timeless quality in Selden's eyes.

103. The description in the second paragraph indicates that what Selden values most about Lily is her
A. physical attractiveness.
B. ability to incite curiosity.
C. kind and generous nature.
D. way of standing out in a crowd.

104. Which choice provides the best evidence for the answer to the previous question?
A. Paragraph 2, Sentence 1 ("It was a Monday in early…in town at that season?").
B. Paragraph 2, Sentence 2 ("If she had appeared to be…desultory air perplexed him.").
C. Paragraph 2, Sentences 3–4 ("She stood apart from the…why the idea arrested him.").
D. Paragraph 2, Sentence 5 ("There was nothing new…far-reaching intentions.").

105. The author includes the following detail: “it amused him to think of putting her skill to the test” (paragraph 3) in order to
A. indicate that Lily has some experience in avoiding people she does not want to talk to.
B. imply that Lily has had numerous suitors in the past.
C. reveal that Lily has snubbed Selden on previous occasions.
D. show that Lily has a strong and stubborn sense of pride.

106. What is implied by the author’s inclusion of the detail, “she regained the girlish smoothness, the purity of tint, that she was beginning to lose after eleven years of late hours and indefatigable dancing” (paragraph 6)?
A. Though attractive, Lily Bart was not as energetic and youthful as she had once been.
B. Lily’s skin and hair always looked very smooth, and today she looked no different.
C. Selden had not seen Lily for eleven years.
D. Lily had been participating in the social activities of high society for quite some time.

107. The author’s statement that, “his course lay so far out of her orbit,” (paragraph 10) has mainly which effect?
A. It explains why Selden has not run into Lily in several years.
B. It describes how inferior Selden feels in relation to Lily.
C. It shows that they do not live in the same neighborhood in New York.
D. It reveals that they move in different social circles.

108. Details from the passage imply that the Trenors are
A. members of Lily’s social class.
B. personal friends of Selden.

C. New York acquaintances of both Lily and Selden.
D. members of Lily's extended family.

109. Why does Selden say, "The resources of New York are rather meagre… but I'll find a hansom first, and then we'll invent something" (paragraph 15)?
A. Selden is frustrated with the speed of the city's public transportation.
B. Selden is being playful and friendly for Lily's benefit.
C. Selden is confident in his ability to impress Lily.
D. There is nowhere close by where they can have tea.

110. Over the course of the passage, the main focus of the narrative shifts from the
A. curiosity that Selden has about Miss Lily Bart, who he has just run into, to a growing fondness he has for her beauty.
B. annoyance Selden feels about the volatile nature of Miss Lily Bart to the Selden's recognition of the common ground between them.
C. nervousness Selden feels regarding Miss Lily Bart to Selden's concern that his romantic feelings are not reciprocated.
D. value Selden attaches to the wonders of the natural world to a rejection of that sort of beauty in favor of human artistry.

For questions 111 – 116:

The Queen City of the South is fast becoming an ideal wedding destination.

If before, Manila was the only place being considered by foreign travelers visiting the Philippines, Cebu now comes to their mind, especially when looking for the country's most important wedding—and honeymoon—destination.

“For those who look for diverse locations, Cebu is the destination of choice,” Department of Tourism (DOT) Cebu/Region VII director Rica Bueno told the Business Mirror in an e-mail interview. “There is a variety of themes and venues available [here]—from heritage-inspired, island or beach, laid-back garden reception, or a ballroom in a fine hotel. Cebu is also an ideal jumpoff point for island-hopping in the Visayas for adventurous couples.”

The DOT has been promoting Cebu—apart from Boracay and Palawan—as a primary wedding destination for foreign tourists looking to have exotic weddings outside their home countries. This is primarily because the city gives the best of nature, culture and adventure, according to Eduardo Jarque Jr., DOT undersecretary for tourism planning and promotions.

“The rich history of the country’s past is mirrored in heritage buildings and churches. The beaches and islands are perfect destinations for nature-loving couples. There’s a myriad of activities such as heritage tours; eco-adventures such as diving, snorkeling, island-hopping, bird watching and trekking. All these can be add-ons to the couple’s main event,” he said.

In recent years, the numbers of foreign guests who visited the country for their wedding requirements significantly have increased. Records from the DOT showed that a total of 96,296 visitors in 2006 went to the Philippines to get married, which went up to 111,948 in 2007, and then to 116,653 in 2008. The figures reflect a significant 14-percent growth rate.

Local travel agencies, meanwhile, reported that they often receive requests from foreign tourists, especially Japanese and Koreans, for wedding ceremonies in Cebu. Just like markets in Asia-Pacific and North America, they find that weddings here in the Philippines are very pocket-friendly compared elsewhere.

According to Asawa (www.asawa.org), a Fil-West relationships web site, a wedding and reception held locally can run anywhere from

$1,000 to $5,000 (P50,000 to P250,000), with a median of $2,500 (P125,000). This is far beyond a very modest wedding in the United States held in just a house or a banquet hall that will not cost less than $30,000, or a lavish wedding rite that can run from $100,000 to $200,000.

Taking into account the budget most foreign guests have for their weddings, Annie Cuevas, tourism attaché in-charge of weddings and honeymoon promotions in Los Angeles, noted that holding nuptial ceremonies in the Philippines is a “costefficient option given that they can have a complete package—a carefully planned wedding and memorable reception, which allow them to take their loved ones and close friends to the Philippines’ tropical islands.”

Aside from reasonable costs, the accessibility and availability of facilities here make it a drawcard for couples looking for the best wedding locations. In fact, additional flights to Cebu from Manila, as well as other key cities in China and Taiwan, have been made available for foreign visitors.

As proof that the Queen City of the South continues to become one of the country’s anchor destinations luring couples who love nature, culture, and adventure, Cebu was acknowledged as the “Best Honeymoon Destination” in the recently concluded World Travel Fair in Shanghai, China.

The tourism department commits itself to remain active in its participation in weddings and honeymoon shows, print and online advertisements, as well as conducting familiarization tours to the Philippines for wedding planners from the US and Canada. Also, it pushes further the ongoing “Romantic Philippines”

campaign, featuring unique getaways and exhilarating thrills to capture more Asian couples. The global market size for weddings and honeymoons is estimated at being between 3 million and 6 million trips per annum. Growth of this niche segment in the next five years is expected to grow further.

However, there are certain elements of the wedding-and-honeymoon market that will experience particular growth. “Second marriages and those marrying later in life [the 35-to-45 age group] will generate demand for weddings-andhoneymoon tourism,” Cuevas revealed. “The number of remarriages is increasing, and is set to continue. Hence, the number of second honeymoons will also increase.”

To cater to this trend, Jarque said the country’s facilities and venues, as well as event planners and organizers, are all ready to welcome those who will celebrate their momentous occasion in the Philippines. “We aim to further tap this niche market through offering more programs and packages through our partners,” he added.

Say ‘I do’ in Cebu by R.L. Abad

111. This selection can most likely be found in:
A. the local news section of a newspaper
B. a tourism magazine
C. the entertainment section of a newspaper
D. a government website

112. The following are synonyms of the word *attaché* as used in the selection EXCEPT:
A. agent
B. haversack
C. envoy
D. plenipotentiary

113. A continuation of this selection would most likely expound on:
A. the advantages and disadvantages of holding weddings in cebu
B. how cebu was first advertised and promoted by the government

C. the continuous increase of foreign tourists in Cebu based on statistics and records of hotels and resorts from the place
D. the reasons why cebu is an ideal place as promoted by wedding photographers and organizers

114. In the last paragraph, the use of the word *niche* most closely pertains to a:
A. subdivision
B. fissure
C. expertise
D. rendezvous

115. It may be inferred from paragraph 7 that:
A. A modest wedding in the US will cost couples a minimum of $30,000.
B. Local travel agencies are receiving increasing booking requests for wedding ceremonies.
C. Cebu has attracted not only foreign visitors from Asia-Pacific but also foreigners coming from the
West.
D. Wedding ceremonies and receptions cost less in the Philippines compared to the United States.

116. The word *drawcard* in the ninth paragraph means:
A. a favorite spot
B. something that attracts patrons
C. an ideal getaway or place of vacation
D. something that represents their ideals

For questions 117 – 124:

The lives of Ancient Greeks revolved around *eris*, a concept by which they defined the universe. They believed that the world existed in a condition of opposites. If there was good, then there

was evil, if there was love, then there was hatred; joy, then sorrow; war then peace; and so on. The Greeks believed that good *eris* occurred when one held a balanced outlook on life and coped with problems as they arose. It was a kind of ease of living that came from trying to bring together the great opposing forces in nature. Bad *eris* was evident in the violent conditions that ruled men's lives.

Although these things were found in nature and sometimes could not be controlled, it was believed that bad *eris* occurred when one ignored a problem, letting it grow larger until it destroyed not only that person, but his family as well. The Ancient Greeks saw *eris* as a goddess: Eris, the Goddess of Discord, better known as trouble.

One myth that expresses this concept of bad *eris* deals with the marriage of King Peleus and the river goddess Thetis. Zeus, the supreme ruler, learns that Thetis would bear a child strong enough to destroy its father. Not wanting to ruin the father, Zeus convinces Thetis to marry a human, a mortal whose child could never challenge the gods. He promises her, among other things, the greatest wedding in all of Heaven and Earth and allows the couple to invite whomever they please. This is one of the most mixed marriages of Greek Mythology and the lesson learned from it still applies today. They do invite everyone . . . except Eris, the Goddess of Discord. In other words, instead of facing the problems brought on by a mixed marriage, they turn their backs on them. They refused to deal directly with their problems and the result is tragic. In her fury, Eris arrives, ruins the weddings, causes a jealous feud between the three major goddesses over a golden apple, and sets in place the conditions that lead to the Trojan War. The war would take place 20 years in the future, but it would result in the death of the only child of the bride and groom, Achilles. Eris would destroy the parents' hopes for their future, leaving the couple with no legitimate heirs to the throne.

Hence, when we are told, "If you don't invite trouble, trouble comes," it means that if we don't deal with our problems, our problems will deal with us . . . with a vengeance! It is easy to see

why the Greeks considered many of their myths learning myths, for this one teaches us the best way to defeat that which can destroy us.

117. Which of the following statements can be inferred from the passage about Zeus?

A. He feared having an affair with Thetis and, subsequently, a child by her.
B. He wanted to be the great king of mankind.
C. He had foreseen that he will be killed during the Trojan War.
D. He has a secret affair with Thetis.

118. The author makes which of the following points about the concept of *eris*?

A. It defined the universe as a series of problems.
B. It defined the universe as a condition of opposites.
C. It defined the universe a mixture of gods and man.
D. It defined the universe as a violent condition that ruled men's lives.

119. The passage suggests that Zeus did not fear a child sired by King Peleus because

A. he knew that no matter how strong a mortal child was, he could not overthrow an immortal god.
B. he knew that Thetis would never love a child from a mortal.
C. he knew that the child would be killed in the Trojan War.
D. he knew that Thetis would always love him above everyone else.

120. Most explicitly, bad *eris* is defined in the passage as

A. the problems man encounters.

B. the violent conditions of life.
C. the evil goddess who has a golden apple.
D. the source of troubles in life.

121. Based on the passage, Achilles?
A. was the illegitimate son of Peleus.
B. was one of the greatest heroes in the Trojan War.
C. dies during the Trojan War.
D. defeated Zeus during the Trojan War.

122. Which of the following statements is the message offered in the myth?
A. Do not let future circumstances control the present situation.
B. Do not hate the Greek Gods.
C. Do not consider a mixed marriage.
D. Do not ignore the problems that arise in life.

123. What main organizational scheme can be identified in the passage?
A. hierarchical order
B. chronological order
C. order by topic
D. compare and contrast

124. Which of the following statements would the author be likely to agree with?
A. Greek myths teach the people to face the problems in life which can obliterate them.
B. One can defeat bad *eris* by disregarding his problems in life.
C. Greek myths will not always be too didactic.

D. Bad *eris* recurs in one's life if he keep on accepting the difficulties in life.

For questions 125 – 131:

There was no possibility of taking a walk that day. We had been wandering, indeed, in the leafless shrubbery an hour in the morning; but since dinner (Mrs. Reed, when there was no company, dined early) the cold winter wind had brought with it clouds so sombre, and a rain so penetrating, that further outdoor exercise was now out of the question.

I was glad of it: I never liked long walks, especially on chilly afternoons: dreadful to me was the coming home in the raw twilight, with nipped fingers and toes, and a heart saddened by the chidings of Bessie, the nurse, and humbled by the consciousness of my physical inferiority to Eliza, John, and Georgiana Reed.

The said Eliza, John, and Georgiana were now clustered round their mama in the drawing-room: she lay reclined on a sofa by the fireside, and with her darlings about her (for the time neither quarrelling nor crying) looked perfectly happy. She and I had dispensed from joining the group; saying, "She regretted to be under the necessity of keeping me at a distance; but that until she heard from Bessie, and could discover by her own observation, that I was endeavouring in good earnest to acquire a more sociable and childlike disposition, a more attractive and sprightly manner—something lighter, franker, more natural, as it were—she really must exclude me from privileges intended only for contented, happy, little children."

"What does Bessie say I have done?" I asked.

"Jane, I don't like cavillers or questioners; besides, there is something truly forbidding in a child taking up her elders in that

manner. Be seated somewhere; and until you can speak pleasantly, remain silent."
A breakfast-room adjoined the drawing-room, I slipped in there. It contained a bookcase: I soon possessed myself of a volume, taking care that it should be one stored with pictures. I mounted into the window-seat: gathering up my feet, I sat cross-legged, like a Turk; and, having drawn the red moreen curtain nearly close, I was shrined in double retirement.

Folds of scarlet drapery shut in my view to the right hand; to the left were the clear panes of glass, protecting, but not separating me from the drear November day. At intervals, while turning over the leaves of my book, I studied the aspect of that winter afternoon. Afar, it offered a pale blank of mist and cloud; near a scene of wet lawn and stormbeat shrub, with ceaseless rain sweeping away wildly before a long and lamentable blast.

Excerpt from *Jane Eyre (Chapter 1)* by Charlotte Brontë

125. The theme of the passage is:
A. the kind and characteristics of winter that the character experiences during november
B. the emotions and situation of the character as conveyed by the setting of the narrative
C. the escape that the character seeks to have from her current situation
D. the characteristics of the place and the family to which the character is situated

126. What does the word *caviller* in the fifth paragraph most nearly means?
A. Someone who is extremely curious
B. A disrespectful child
C. A person who raises trivial objections
D. Annoyingly noisy people

127. Which of the following inferences is supported by the second and third paragraphs?
A. Jane was under the care of a family not her own.
B. Jane was scolded by their mother and was therefore secluded from the company of her siblings.
C. Bessie was speaking ill of Jane.
D. Mrs. Reed simply wanted Jane to be a happy child.

128. The word *dinner* as used in the second sentence of the first paragraph means:
A. The heavy meal taken in the evening
B. A complete meal at a fixed price in a restaurant
C. A public banquet in honor of someone
D. The main meal of the day taken at midday

129. What best describes the mood of Jane?
A. Lazy
B. Angry
C. Serious
D. Somber

130. What meaning does the phrase “shrined in double retirement” in the sixth paragraph convey?
A. To step back and sulk in a corner
B. To feel extremely depressed
C. To retreat in a closed space both literally and figuratively
D. To remain silently reading a book in a secluded place

131. The winter November afternoon described in the passage is a symbolism of what?
A. The physical inferiorities that Jane has of Eliza, John, and Georgina Reed
B. The gloominess of the character’s situation and disposition

C. The burdensome place which the Reeds inhabit
D. The desires that Jane most earnestly seeks to have

For questions 132 – 141:

The following passage is adapted from, "An Introduction to the Prose and Poetical Works of John Milton" by Hiram Corson. Originally published in 2014.

John Milton's prose works are perhaps not read, at the present day, to the extent demanded by their great and varied merits. Some of his poetical works are extensively "studied" in the schools, and a somewhat reasonable stab at the study of some of his prose works is made in departments of rhetoric, but his prose works cannot be said to be read in the best sense of the word,—that is, with all faculties focused upon the subject-matter as one of major importance, with an openness of heart, and with an accompanying interest in the general loftiness of Milton's diction. In short, everyone should train himself or herself to read any great author with the fullest loyalty to the author — by which is not meant that all the author's thoughts, opinions and beliefs are to be accepted, but that what they really are be adequately apprehended. In other words, loyalty to an author means that every reader fully attempt to understand and receive the work's intended meaning and spirit.

Mark Pattison, in his Life of Milton, while fully recognizing the grand features of the prose works as monuments of the English language, undervalues, or rather does not value at all, Milton's services to the cause of political and religious liberty as a polemic prose writer, and considers it a thing to be much regretted that he engaged at all in the great contest for political, religious, and other forms of liberty. This seems to be the one unacceptable feature of his very able life of the poet. Looking upon the life of Milton the politician merely as a sad and ignominious interlude in the life of Milton the poet, Pattison cannot be expected to entertain the idea that the poem is in any

sense the work of the politician. Yet we cannot help thinking that the tension and elevation which Milton's nature had undergone in the mighty struggle, together with the heroic dedication of his faculties to the most serious objects, must have had not a little to do both with the final choice of his subject and with the tone of his poems. Milton's great Puritan poetry could hardly have been written by anyone but a militant Puritan.

Milton was writing prose when, some think, he should have been writing poetry, and, as Pattison claims, these works of Milton had no influence whatsoever on current events. But they certainly had an influence, and a very great influence, on current events not many years after. The restoration of Charles II did not mean that the work of Puritanism was undone, and that Milton's pamphlets were to be of no effect. It was in a large measure due to that work and to those pamphlets that in a few years—only fourteen after Milton's death—the constitutional basis of the monarchy underwent a radical change for the better,—a change which would have been a great pleasure to Milton, if he could have lived to see it. A man constituted as Milton was could not have kept himself apart from the great conflicts of his time. Although the direct subjects of his polemic prose works may not hold a huge interest for the general reader in the present-day, they are all, independently of their subjects, charged with inherent truth and as profoundly expressive as his poetry. All of Milton's work, both poetry and prose, are full of bright gems of enduring truth.

132. The main purpose of the first paragraph is
A. to describe a failure to appreciate Milton's prose.
B. to explain how readers can understand what an author intends.
C. to criticize Pattison for missing the importance Milton's politics had on his poetry.
D. to explain the lasting impact and value of Milton prose.

133. Why does the author use quotation marks around the word "studied" in sentence 2?
A. To show that most English teachers are not qualified for their positions.
B. To explain why Milton is little understood by the general public.
C. To indicate students rarely complete their homework on poets such as Milton.
D. To emphasize the incompleteness with which Milton is understood and examined.

134. As used in the first sentence of paragraph 2, "polemic" most nearly means
A. having an intricate or exquisite quality.
B. covering many different topics.
C. socially engaged in activism.
D. incongruously political.

135. Which sentence(s) best detail(s) the author's criticism of Mark Pattison's work?
A. Paragraph 2, Sentence 1 ("Mark…liberty.")
B. Paragraph 2, Sentences 2–3 ("This…politician.")
C. Paragraph 2, Sentence 4 ("Yet…poems.")
D. Paragraph 2, Sentence 5 ("Milton's…Puritan.")

136. The author included the sentence, "But they certainly had an influence, and a very great influence, on current events not many years after" (2nd sentence of paragraph 3) in order to
A. refute the sentence immediately before it.
B. change to a new topic before ending the essay.
C. praise the far-reaching impact of Pattison's work.
D. introduce a criticism that has not yet been discussed.

137. The primary purpose of this passage is to
A. compare Milton's poetry to his prose works, and emphasize the latent value of the latter.
B. decry the unwarranted criticism Milton's prose works have received.
C. recommend a reevaluation of Milton's prose works by Pattison and similar scholars.
D. criticize Pattison's interpretation of Milton's motives and emphasize the true value of his prose work.

138. Which of the following best summarizes the author's interpretation of Pattison's work on Milton?
A. It does not appreciate Milton's writing.
B. It is regrettable and ignominious.
C. It is notable but inadequate.
D. It fails to consider both Milton's poetical and prose contributions.

139. The author of the passage implies all of the following about Milton EXCEPT
A. Milton's polemical writing favored the ideals of the Puritan movement.
B. Milton's interest in polemic prose did not influence his poetry.
C. Milton was actively engaged in the politics of his day.
D. Milton likely opposed monarchism and totalitarian rule.

140. Which choice provides the best evidence for the answer to the previous question?
A. Paragraph 2, Sentence 4 ("Yet…poems.")
B. Paragraph 3, Sentences 1–2 ("Milton…after.")
C. Paragraph 3, Sentences 3–4 ("The restoration…it.")
D. Paragraph 3, Sentences 5–6 ("A man…poetry.")

141. As used in paragraph 3, the word “constituted” most nearly means
A. with a repetitive behavioral pattern.
B. initiated in a particular manner.
C. with a certain predisposition.
D. in a position of leadership.

For questions 142 – 145:

Discipline for the Young from *Cebu Daily News* (9 August 2011)

142. What emotion is conveyed by the editorial cartoon?
A. Fear
B. Cynicism
C. Grief
D. Ambiguity

143. What issue or situation is being depicted through the editorial cartoon?

A. Children's rights
B. Corporal punishment
C. Child trafficking
D. Delinquency in children

144. What may be inferred about the government through the situation depicted in this editorial cartoon?
A. The government apathetically creates laws which exploit children instead of protecting them.
B. The government is deaf to the implorations of children's rights advocates to write laws protecting
children.
C. The government has the power to intervene between parents' disciplinary methods and children's rights.
D. The government is on its way to crafting laws which respond to the implorations of children's rights
advocates.

145. The belt held by the adult in the editorial cartoon is representative of what?
A. Corrective measures of older people to the young
B. Cruelties incurred by parents/guardians
C. Impositions of discipline to children
D. Physical punishment as tools for chastisement

For questions 146 – 147:

All mammals feed their young. Beluga whale mothers, for example, nurse their calves for
some twenty months, until they are about to give birth again and their young are able to find their own food. The behavior of feeding of the young is built into the reproductive
Line system. It is a nonelective part of parental care and the defining feature of a mammal, the
(5) most important thing that mammals-- whether marsupials, platypuses, spiny anteaters, or placental mammals -- have in common.

But not all animal parents, even those that tend their offspring to the point of hatching or birth, feed their young. Most egg-guarding fish do not, for the simple reason that their young are so much smaller than the parents and eat food that is also much smaller than the food eaten by adults. In reptiles, the crocodile mother protects her young after they have hatched and takes them down to the water, where they will find food, but she does not actually feed them. Few insects feed their young after hatching, but some make other arrangement, provisioning their cells and nests with caterpillars and spiders that they have paralyzed with their venom and stored in a state of suspended animation so that their larvae might have a supply of fresh food when they hatch.

For animals other than mammals, then, feeding is not intrinsic to parental care. Animals add it to their reproductive strategies to give them an edge in their lifelong quest for descendants. The most vulnerable moment in any animal's life is when it first finds itself completely on its own, when it must forage and fend for itself. Feeding postpones that moment until a young animal has grown to such a size that it is better able to cope. Young that are fed by their parents become nutritionally independent at a much greater fraction of their full adult size. And in the meantime those young are shielded against the vagaries of fluctuating of difficult-to-find supplies. Once a species does take the step of feeding its young, the young become totally dependent on the extra effort. If both parents are removed, the young generally do no survive.

146. What does the passage mainly discuss?
- A. *The care that various animals give to their offspring.*
- B. The difficulties young animals face in obtaining food.
- C. The methods that mammals use to nurse their young.
- D. The importance among young mammals of becoming independent.

147. The author lists various animals in line 5 to
- A. contrast the feeding habits of different types of mammals
- B. describe the process by which mammals came to be defined
- C. *emphasize the point that every type of mammal feeds its own young*
- D. explain why a particular feature of mammals is nonelective

For questions 148 – 149:

The first peoples to inhabit what today is the southeastern United States sustained themselves as hunters and gathers. Sometimes early in the first millennium A.D., however, they began to cultivate corn and other crops. Gradually, as they became more skilled at

Line gardening, they settled into permanent villages and developed a rich culture, characterized
(5) by the great earthen mounds they erected as monuments to their gods and as tombs for their distinguished dead. Most of these early mound builders were part of the Adena-Hopewell culture, which had its beginnings near the Ohio River and takes its name from sites in Ohio. The culture spread southward into the present-day states of Louisiana, Alabama, Georgia, and Florida. Its peoples became great traders, bartering jewellery,
(10) pottery, animal pelts, tools, and other goods along extensive trading networks that stretched up and down eastern North America and as far west as the Rocky Mountains.

About A.D. 400, the Hopewell culture fell into decay. Over the next centuries, it was supplanted by another culture, the Mississippian, named after the river along which many of its earliest villages were located. This complex civilization dominated the Southeast from
(15) about A.D. 700 until shortly before the Europeans began arriving in the sixteenth century. At the peak of its strength, about the year 1200, it was the most advanced culture in North America. Like their Hopewell predecessors, the Mississippians became highly skilled at growing food, although on a grander scale. They developed an improved strain of corn, which could survive in wet soil and a relatively cool climate, and also learned to cultivate
(20) beans. Indeed, agriculture became so important to the Mississippians that it became closely associated with the Sun – the guarantor of good crops. Many tribes called themselves "children of the Sun" and believed their omnipotent priest-chiefs were descendants of the great sun god.

Although most Mississippians lived in small villages, many others inhabited large towns.
(25) Most of these towns boasted at least one major flat-topped mound on which stood a temple that contained a sacred flame. Only priests and those charged with guarding the flame could enter the temples. The mounds also served as ceremonial and trading sites, and at times they were used as burial grounds.

148. What does the passage mainly discuss?

A. The development of agriculture
B. The locations of towns and villages
C. *The early people and cultures of the United States*
D. The construction of burial mounds

149. Why does the author mention that many Mississippians tribes called themselves "children of the Sun" (line 22)?

A. To explain why they were obedient to their priest-chiefs.
B. To argue about the importance of religion in their culture.
C. To illustrate the great importance they placed on agriculture.
D. To provide an example of their religious rituals.

6

Language Answer Key

1. B
2. B
3. A
4. D
5. C
6. B
7. A
8. B
9. D
10. A
11. C
12. D
13. A
14. C
15. A
16. C
17. B
18. A
19. C
20. C
21. C
22. B
23. A
24. D
25. C
26. A
27. C

28. D

29. A

30. B

31. B

32. B

33. D

34. A

35. C

36. C

37. A

38. A

39. D

40. C

41. D

42. B

43. A

44. D

45. C

46. D

47. B

48. A

49. C

50. C

51. D

52. A

53. B

54. C

55. C

56. A

57. D

58. A

59. D

60. A

61. D

62. D

63. C

64. A

65. B

66. A

67. A

68. C

69. C

70. C

71. D

72. B

73. D

74. D

75. B

76. D

77. D

78. B

79. C

80. A

81. D

82. A

83. A

84. B

85. B

86. C

87. D

88. A

89. B

90. B

91. D

92. B

93. A

94. D

95. D

96. A

97. B

98. C

99. B

100. A

101. D

102. B

103. A

104. A

105. A

106. D

107. A

108. B

109. A

110. D

111. B

112. A

113. A

114. D

115. A

116. B

117. A

118. C

119. A

120. C

121. D

122. C

123. A

124. D

125. B

126. A

127. A

128. D

129. B

130. C

131. B

132. B

133. C

134. D

135. A

136. D

137. B

138. C

139. A

140. C

141. C

142. B

143. A

144. C

145. D

146. D

147. C

148. D

149. B

150. A

7

Science Answer Key

1. D
2. A
3. A
4. A
5. D
6. B
7. A
8. A
9. D
10. D
11. B
12. D
13. D
14. A
15. B
16. C
17. C
18. A
19. D
20. A
21. C
22. A
23. B
24. B
25. A
26. D
27. C

28. C

29. D

30. A

31. B

32. B

33. A

34. C

35. D

36. A

37. D

38. B

39. D

40. B

41. C

42. B

43. D

44. B

45. A

46. A

47. A

48. C

49. D

50. C

51. B

52. C

53. D

54. D

55. C

56. A

57. B

58. C

59. C

60. A

61. D

62. A

63. D

64. B

65. D

66. B

67. A

68. B

69. B

70. C

71. A

72. A

73. A

74. B

75. D

76. B

77. D

78. D

79. D

80. A

81. A

82. D

83. C

84. A

85. C

86. A

87. C

88. D

89. D

90. B

91. A

92. A

93. A

94. D

95. A

96. B

97. A

98. C

99. A

100. A

8

Mathematics Answer Key

1. **Answer: A.**

If you think of distance above sea level as a positive number, then you must think of going below sea level as a negative number. Going up is in the positive direction, while going down is in the negative direction. Give all the descending distances a negative sign and the ascending distances a positive sign.

The resulting numerical expression would be as follows: −80 + +25 + −12 + +52

Because addition is commutative, you can associate like-signed numbers: (−80 + −12) + (+25 + +52)

Evaluate the numerical expression in each parentheses: [−80 + −12 = −92] [+25 + +52 = +77]

Substitute the values into the numerical expression: (−92) + (+77)

Signs different? Subtract the value of the numbers and give the result the sign of the higher value number. [92 − 77 = 15]

The diver took his rest stop at −15 feet.

2. Answer: D.

Substitute the values for the variables into the expression.

$(\frac{1}{2})\{(\frac{(6)}{2} - 3) - 4(3)\}$

Evaluate the expression in the innermost parentheses.

$[(\frac{(6)}{2} - 3) = \frac{6}{2} - 3]$

PEMDAS: Division before subtraction. Substitute the result into the numerical expression.

$[\frac{6}{2} - 3 = 3 - 3 = 0]$

$(\frac{1}{2})\{(0) - 4(3)\}$

Evaluate the expression inside the parentheses.

$[\{0 - 4(3)\} = 0 - 4 \cdot 3]$

PEMDAS: Multiply before subtraction.

$[0 - 4 \cdot 3 = 0 - 12]$

Change subtraction to addition and the sign of the term that follows.

$[0 - 12 = 0 + -12 = -12]$

Substitute the result into the numerical expression

$(\frac{1}{2})\{-12\} = \frac{1}{2} \cdot -12$

Signs different? Multiply numbers and give the result a negative sign.

$[\frac{1}{2} \cdot 12 = 6]$

$\frac{1}{2} \cdot -12 = -6$

The simplified value of the expression is as follows: $y\{(\frac{x}{2} - 3) - 4a\}$ = -6

3. Answer: D.

To solve this problem, choose an even integer for x and an odd integer for y and evaluate each of the answer choices. Set x = 0 and y = 1 → only x + y + 2 will evaluate to an odd integer.

4. Answer: A.

35% of 15% of a number is 0.35 * 0.15 of that number:
0.35 * 0.15 = 0.0525x

5. Answer: C.

This question is really asking for the perimeter of the field. Add up all of the sides to find the perimeter:
(125 * 2) + (200 * 2) = 650

6. Answer: B.

Let x = the number of months. The number of months (x), times 12 (pounds per month), plus the starting weight (20), will be equal to 200 pounds.

An equation that represents these words would be 12x + 20 = 200.

Subtract 20 from both sides of the equation. 12x + 20 − 20 = 200 − 20

Associate like terms. 12x + (20 − 20) = 200 − 20

Perform numerical operations. 12x + (0) = 180

Divide both sides of the equation by 12.

$\frac{12x}{12} = \frac{180}{12}$

x = 15

The farmer would have to wait 15 months before selling his hog.

7. Answer: C.

Let x = the number of boys who participate in interscholastic sports. The question tells us that $\frac{2}{3}$ the number of boys plus 25 is equal to the number of girls who participate.

An equation that represents this statement is $\frac{2}{3}$ x + 25 = 105.
Subtract 25 from both sides of the equation. $\frac{2}{3}$ x + 25 − 25 = 105 – 25
Perform numerical operations. $\frac{2}{3}$ x = 80
Multiply by the reciprocal of $\frac{2}{3}$
$\frac{3}{2}$ ($\frac{2}{3}$ x) = $\frac{3}{2}$ (80)

x = 120

The number of boys who participate is 120.

8. Answer: B.

Only one line can pass through a point and be parallel to an existing line.

9. Answer: B.
An infinite number of lines can pass through any given point in space—only one line can pass through a point and be perpendicular to an existing line. In this case, that point is on the line; however, this rule also applies to points that are not on the line.

10. Answer: A.
When intersecting lines create right angles, they are perpendicular.

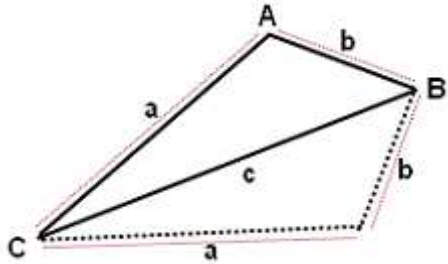
11. Answer: B.
Lines are straight; they cannot backtrack or bend (if they could bend, they would be a curve, not a line). Consequently, when two lines intersect, they can share only one point.

12. Answer: B.
When two lines intersect, they share a single point in space. That point is technically on both lines.

13. Answer: D.
In order to be a transversal, a line must cut across two other lines at different points. Line o crosses lines m and l at the same point; it is not a transversal

14. Answer: A.

One approach this question is to draw it.



For the resulting parallelogram A'BAC, length c will not be included in the perimeter (since CB is the diagonal of the parallelogram, not a side).
All the answer choices with length c can be eliminated -- which leaves us with just (A) and (E).

The perimeter can be found by adding up the lengths of the sides:
a + a + b + b
= 2a + 2b
= 2(a + b)

15. Answer: D.

Translate the given expressions into equations:
x * 0.6 = 12
x = 20
20 * 1.65 = 33

16. Answer: C.

Write the applicable formula. $A = \frac{1}{2} h(b_1 + b_2)$

A = 7,200
b_1 = 40
b_2 = 80
h = ?

Substitute the given values into the formula: 7,200 = $\frac{1}{2}$ · h · (40 + 80)

Simplify the expression: 7,200 = $\frac{1}{2}$ · h · 120 7,200 = 60 h

Divide both sides of the equation by 60. $\frac{7200}{60} = \frac{60h}{60}$

Simplify the expression. 120 = h

Include the units. 120 ft = h

17. Answer: D.
Write the applicable formula. V = πr2h

List the values for the variables.

V = 13,565
r = 12
h = ?
π = 3.14

Substitute the given values into the formula. 13,565 = (3.14)(12^2)h

Simplify the expression. 13,565 = 452.16h

Divide both sides of the equation by 452.16.

$$\frac{13565}{452.16} = \frac{452.16h}{452.16}$$

Simplify the expression. 30 = h

Include the units. 30 feet = h

18. Answer: B.
Write the applicable formula. $S = 2\pi r(r + h)$

List the values for the variables.
$S = 2{,}512$
$r = x$
$h = 3x$
$\pi = 3.14$

Substitute the given values into the formula. $2{,}512 = 2(3.14)(x)(x + 3x)$

Simplify the expression. $2{,}512 = 6.28x(4x)$

Divide both sides of the equation by 25.12.

$\frac{2{,}512}{25.12} = \frac{25.12x2}{25.12}$

Simplify the expression.

$100 = x^2$

Solve for x.

$10 = x$

Substitute the value for x into the values list.

$r = x = 10$ feet

$h = 3x = 3(10) = 30$ feet

19. Answer: C.
Add 5 to both sides of the inequality. $\frac{4}{3}x - 5 + 5 > x - 2 + 5$

Simplify. $\frac{4}{3}$ x > x + 3

Subtract 1x from both sides of the inequality.

$\frac{4}{3}$ x − x > x − x + 3

$\frac{4}{3}$ x − $\frac{3}{3}$ x > x − x + 3

Simplify the expressions.

$\frac{1}{3}$ x > 3

Multiply both sides of the inequality by 3.

3($\frac{1}{3}$ x) > 3(3)

$\frac{3}{1}$ ($\frac{1}{3}$ x) > 3 (3)

Simplify the expressions. x > 9

20. Answer: D.

A right triangle has a right angle and two acute angles; it does not have any obtuse angles.

21. Answer: D.

Divide both sides of the equation by 3.

$\frac{24x^2}{3} = \frac{3(43x-15)}{3}$

Simplify terms. $8x^2 = 43x – 15$

Add (15 − 43x) to both sides of the equation. $8x^2 + 15 − 43x = 43x − 15 + 15 − 43x$

Combine like terms. $8x^2 + 15 − 43x = 0$

Use the commutative property to move terms. $8x^2 − 43x + 15 = 0$

Factor the trinomial expression. $(8x − 3)(x − 5) = 0$

Using the zero product property, add 3 to both sides and divide by 8.

$8x − 3 = 0$

$\frac{8x}{8} = \frac{3}{8}$

Simplify terms. $x = \frac{3}{8}$

Now let the second factor equal zero. $x − 5 = 0$

Add 5 to both sides. $x = 5$

The solutions for the quadratic equation $24x^2 = 3(43x − 15)$ are $x = \frac{3}{8}$ and $x = 5$.

22. Answer: A.
The problem provides the lengths of two legs and an unknown angle. You could solve for a hypotenuse using the Pythagorean theorem, and then use sine or cosine. But the least amount of work uses what the question provides. Only the trigonometric ratio sin uses the lengths of two legs. Divide 13.9 by 20 and match the answer on the chart.

23. Answer: B.
Horizontal lines are of the form y = constant and vertical lines are of the from x = constant and therefore the two lines are neither horizontal nor vertical. Let us find the slopes of the two given lines

y = 2x has a slope equal to 2

2y = - x is equivalent to y = -(1/2) x and its slope is equal to -(1/2)
Since the slopes are not equal, the two lines are not parallel. The product of the two slopes is given by

2*-(1/2) = - 1

and hence the two lines are perpendicular.

24. Answer: B.
If the price is no less than 100 Dollars, then the price is either equal to or greater than 100 Dollars.

$x \geq 100$

25. Answer: D.
Substitute the coordinates of the given points in the given equation and check which one gives a false statement.

Point (9,- 6) : - 6 = -(9) + 3 , - 6 = - 6 , true , point lies on the line

Point (3,0) : 0 = - (3) + 3 , 0 = 0 , true , point lies on the line

Point (-2,5) : 5 = - (-2) + 3 , 5 = 5 , true , point lies on the line

Point (2,2) : 2 = - (2) + 3 , 2 = 1 , false , point DOES NOT lie on the line

26. Answer: C.
For the relation in C, when x = 2, there are two possible values of y: 3 or 7 and therefore the relation in C is not a function.

27. Answer: D.
We may use the Associative property of multiplication to write

$3(x\ y) = (3\ x)y$

28. Answer: D.

Solve the inequality

$-7x + 6 \le -8$, given

$-7x + 6 - 6 \le -8 - 6$, add - 6 to both sides

$-7x \le -14$, simplify

$-7x / -7 \ge -14 / -7$, divide by - 7 and CHANGE symbol of inequality

$x \ge 2$, solution set

The answer to the question is D since 2 is greater that or equal to 2.

29. Answer: A.

We first rewrite the given equation in the form

$|-2x - 5| = k + 3$

The term $|-2x - 5|$ is either positive or equal to zero. Therefore the above equation has no solutions whenever the expression k + 3 is negative. The values of k for which the above equation has no solutions are solutions of the inequality

k + 3 < 0 or k < - 3

The answer is A since - 5 is less than - 3.

30. Answer: C.

The slope of the given (in slope intercept form) line is equal to - 5. Let m be the slope of the line perpendicular to the given line. Two lines are perpendicular if the product of their slopes is equal to -1. Hence

m*(-5) = - 1

Solve for m. Hence

m = 1/5 is the slope of a line perpendicular to the given line.

31. Answer: D.

I. $\sqrt{x} < x$: if $x = \frac{1}{4}$, $\sqrt{\frac{1}{4}} < \frac{1}{4} \rightarrow \frac{1}{2} < \frac{1}{4}$ (false)

II. $x^2 > x$: if $x = \frac{1}{2}$, $(\frac{1}{2})^2 > \frac{1}{2} \rightarrow \frac{1}{4} > \frac{1}{2}$ (false)

III. $x^2 > \sqrt{x}$: if $x = \frac{1}{4}$, $(\frac{1}{4})^2 > \sqrt{\frac{1}{4}} \rightarrow \frac{1}{16} > \frac{1}{2}$ (false)

None of the above is true.

32. Answer: D.
$4x^2 + 7x + 3 = 2k$

a = 4
b = 7
c = 3 – 2 k

$b^2 – 4ac = 0$

$7^2 – 4(4)(3 - 2k) = 0$

$49 – 48 + 32k = 0$

$k = -\frac{1}{32}$

33. Answer: A.

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{8-1}{6-0} = \frac{7}{6}$

34. Answer: D.

Let 2r = radius of smallest circle and 5r = radius of the largest circle

$A_{small} = \pi (2r)^2$

$36 \pi = 4 \pi r^2$

$9 = r^2$

$3 = r$

$A_{large} = \pi (5r)^2$

$= \pi (5 \times 3)^2$

$= \pi (15)^2$

$= 225\pi$

35. Answer: A.

Here we are given a system of equations and asked to solve in terms of one of the given variables. It is important to note that we are looking for 3b and not solving for b alone. We will begin by solving for c in terms of a using the first equation. We will then substitute this value into the second equation so as to eliminate the c variable and be left with only a's and b's. We will then solve for 3b:

$$\frac{a+4}{3} = c$$

$$\rightarrow b = 2\left(3 - \left(\frac{a+4}{3}\right)\right)$$

$$= 2\left(\frac{9}{3} - \frac{a+4}{3}\right)$$

$$= 2\left(\frac{5-a}{3}\right)$$

Here we will multiply both sides by 3 so we have our target value of 3b on one side, and we will then simplify the expression on the other side:

3b = 2(5 − a)

= 10 − 2a

36. Answer: C.

A. The sum of two odd integers. 15 + 15 = 30, 30 ÷ 10 = 3 (odd integer)

B. The product of two prime numbers. 2 x 5 = 10, 10 ÷ 10 = 1 (odd integer)

C. The product of two odd integers. 3 x 5 = 15, 15 ÷ 10 = 1.5 (**not an integer**)

D. The sum of three consecutive integers. 9 + 10 + 11 = 30, 30 ÷ 10 = 3 (odd integer)

37. Answer: B.

$2^{-|-2|} = 2^{-2}$, since | - 2 | = 2

$= 1 / 2^{2}$, since $a^{-n} = 1 / a^{n}$

= 1/4 = 0.25

38. Answer: B.

Substitute x by -2 in f(x) as follows

$f(-2) = 4(-2)^{3} - 4(-2)^{2} + 10$

= 4(-8) - 4(4) + 10 = - 32 - 16 + 10 = - 38

39. Answer: D.

The two lines intersect at the point (3 , -4) which is in quadrant IV.

40. Answer: A.

The three denominators are different and therefore we need to find a common denominator.

We first find the lowest common multiple (LCM) of the two denominators 8, 12 and 16.

8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80,...

12: 12, 24, 36, 48, 60, 72, 84, 96,...

16: 16, 32, 48, 64, 80, 96...

The lowest common denominator is 48 and we now convert all 3 denominators to the common denominator 48 and simplify as follows:

$$\frac{5}{8}+\frac{1}{12}-\frac{5}{16}=\frac{5\cdot 6}{8\cdot 6}+\frac{1\cdot 4}{12\cdot 4}-\frac{5\cdot 3}{16\cdot 3}=\frac{30}{48}+\frac{4}{48}-\frac{15}{48}=\frac{30+4-15}{48}=$$

41. Answer: D.

The two rational expressions have different denominators. In order to add the rational expressions above, we need to convert them to a common denominator. We factor completely the two denominators $x^2 + 6x + 5$ and $x^2 + 11x + 30$ and find the LCD.

$x^2 + 6x + 5 = (x + 1)(x + 5)$

$x^2 + 11x + 30 = (x + 6)(x + 5)$

LCD = $(x + 1)(x + 5)(x + 6)$

We also factor the numerators.

$x^2 + 3x + 2 = (x + 1)(x + 2)$

$x^2 + 4x - 12 = (x + 6)(x - 2)$

We rewrite the given expression with numerators and denominators in factored form and simplify if possible.

$$\frac{x^2+3x+2}{x^2+6x+5}-\frac{x^2+4x-12}{x^2+11x+30}=\frac{(x+1)(x+2)}{(x+1)(x+5)}-\frac{(x+6)(x-2)}{(x+6)(x+5)}$$

$$= \frac{\cancel{(x+1)}(x+2)}{\cancel{(x+1)}(x+5)} - \frac{\cancel{(x+6)}(x-2)}{\cancel{(x+6)}(x+5)} = \frac{x+2}{x+5} - \frac{x-2}{x+5}$$
$$= \frac{x+2-(x-2)}{x+5} = \frac{4}{x+5}$$

42. Answer: D.

Apply the multiplication rule.

$$\frac{2x+4}{x-5} \cdot \frac{3x-15}{x+2} = \frac{(2x+4)(3x-15)}{(x-5)(x+2)}$$

Factor if possible

$$= \frac{2(x+2)3(x-5)}{(x-5)(x+2)}$$

Simplify if possible

$$= \frac{2\cancel{(x+2)}3\cancel{(x-5)}}{\cancel{(x-5)}\cancel{(x+2)}} = 6 \text{ for } x \neq -2 \text{ and } x \neq 5$$

43. Answer: C.

We first convert (x - 2) into a rational expression. Hence

$$\frac{-2x+4}{x-1} \div (x-2) = \frac{-2x+4}{x-1} \div \frac{x-2}{1}$$

The division of two rational expressions is done by multiplying the first

by the reciprocal of the second as follows (see divison rule above). Hence

$$= \frac{-2x+4}{x-1} \cdot \frac{1}{x-2}$$

Multiply numerators and denominators (multiplication rule) but do not expand.

$$= \frac{(-2x+4) \cdot 1}{(x-1)(x-2)}$$

Factor the terms - 2 x + 4 included in the numerator as follows:

- 2 x + 4 = -2(x - 2)

and use - 2 x + 4 in factored form in the rational expression to simplify

$$= \frac{-2(x-2) \cdot 1}{(x-1)(x-2)} = \frac{-2\cancel{(x-2)} \cdot 1}{(x-1)\cancel{(x-2)}} = \frac{-2}{x-1} \quad \text{for} \quad x \neq 2$$

44. Answer: D.

Use the distributive property of multiplication. 3(1) − 3(3x) ≥ −3(x) − 3(27)

Simplify terms. 3 − 9x ≥ −3x − 81

Add 9x to both sides. 3 − 9x + 9x ≥ 9x − 3x − 81

Combine like terms. 3 ≥ 6x − 81

Add 81 to both sides of the inequality. 3 + 81 ≥ 6x − 81 + 81

Combine like terms. 84 ≥ 6x

Divide both sides of the inequality by 6. $\frac{84}{6} \geq \frac{6x}{6}$

Simplify. $14 \geq x$

45. Answer: C.

Multiply the exponents of each factor inside the parentheses by the exponent outside the parentheses.

$3^2x^2y^{10} - 11x^2y^24^2y^8$

Use the commutative property of multiplication.

$3^2x^2y^{10} - 11 \times 4^2x^2y^2y^8$

When similar factors, or bases, are multiplied, add the exponents of the variables.

$3^2x^2y^{10} - 11 \times 16\ x^2y^{10}$

Evaluate numerical factors.

$9x^2y^{10} - 176x^2y^{10}$

Combine like terms.

$-167x^2y^{10}$

46. Answer: A.

This expression can be factored using the trinomial method.

The factors of v4 are $(v^2)(v^2)$, and the factors of 48 are (1)(48) or (2)(24) or (3)(16) or (4)(12) or (6)(8).

Only the product of a positive and a negative numerical term will result in −48. The only factors of 48 that can be added or subtracted in any way to equal 13 are 3 and 16.

Use 3 and 16 and a positive and negative sign in the terms of the trinomial factors. Check your answer using FOIL.

$(v^2 + 3)(v^2 - 16) = v^4 - 16v^2 + 3v^2 - 48 = v^4 - 13v - 48$
You may notice that one of the two factors of the trinomial expression can itself be factored. The second term is the difference of two perfect squares.

Factor $(v^2 - 16)$ using the form for factoring the difference of two perfect squares.

$(v + 4)(v - 4) = v^2 - 4v + 4v - 16 = v^2 - 16$

This now makes the complete factorization of $v^4 - 13v^2 - 48 = (v^2 + 3)(v + 4)(v - 4)$.

47. Answer: D.

For this expression, use the product property of radicals and combine the factors in the radicand and outside the radical signs.

$(9\sqrt{a^2b})(3a\sqrt{b}) = 9 \times 3a\sqrt{a^2b \times b} = 27a\sqrt{a^2b^2} = 27a \times ab = 27a^2b$

48. Answer: D.

A line, a line segment, and a ray are sets of points. How many points make a set? An infinite number. Since a limit cannot be put on infinity, not one of the answer choices has more than the other.

49. Answer: D.

Always assume that in plane geometry a line is a straight line unless otherwise stated. Process of elimination works well with this question: Lines have one dimension, length, and no substance; they are definitely not solid. Lines extend to infinity; they are not finite. Finally, we defined noncollinear as a set of points that "do not line up"; we take our cue from the last part of that statement. Choice c is not our answer.

50. Answer: D.

Collinear points are also coplanar. Choice a is not the answer because noncollinear points determine planes, not a single line of collinear points.

51. Answer: B.

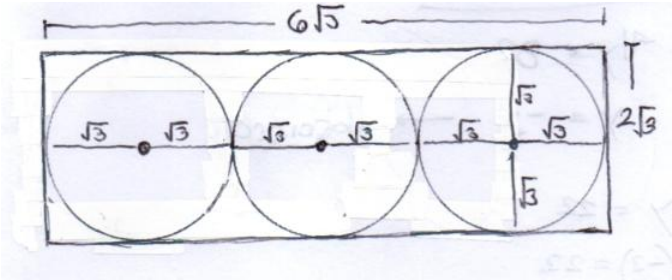
A line segment is the shortest distance between any two points.

52. Answer: B.

$16 - x^2 \geq 0$

$x^2 - 16 \leq 0 \rightarrow (x - 4)(x + 4) \leq 0 \rightarrow -4 \leq x \leq 4$

53. Answer: B.



A = LW
$(6\sqrt{3})(2\sqrt{3})$
12 (3) = 36

54. Answer: B.
P = 2L + 2W
L = (P – 2W) ÷ 2
= [(16x + 8y) – 2 (5x – 2y)] ÷ 2
= [16x + 8y – 10x + 4y] ÷ 2
= [6x + 12y] ÷ 2
L = 3x + 6y

55. Answer: C.
Because we are provided only the ratio of boys to girls, we can provide our own number of boys and girls so long as it satisfies the provided ratio. We will assume there are 10 girls, which means there are 20 boys. Now, ¾ of the boys would be 15 and ½ of the girls would be 5. The ratio of 15:5 is 3:1.

56. Answer: A.
1st: 7:00 A.M., Sunday
2nd: 2:00 P.M., Sunday
3rd: 9:00 P.M., Sunday
4th: 4:00 A.M., Monday
5th: 11:00 A.M., Monday
6th: 6:00 P.M., Monday

57. Answer: A.
Red = x
Green = 3x
White = 2(3x) = 6x
Total: 10x

P(white) = $\frac{6x}{10x} = \frac{3}{5}$

58. Answer: C.
$\frac{x^2}{k}$ - kx + k = 0 → a = $\frac{1}{k}$, b = - k, c = k
It has two real roots if $b^2 - 4ac > 0$
$(- k)^2 - 4(\frac{1}{k})(k) > 0 \rightarrow k^2 - 4 > 0 \rightarrow (k - 2)(k + 2) > 0 \rightarrow$ **k < - 2 or k > 2**

59. Answer: D
The most straightforward method for solving problems of this type is to begin by supplying our own initial value prior to any increase or decrease in profits. Because percents are essentially a division by 100, choosing 100 as our starting value for any percent problem is wise. We are told that for the first year, the percent rose by 12%, so:

100 * 0.12 = 12

So at the start of 2011, the company now has 112, for which there is another increase of 18%, so:

112 * 0.18 = 20.16

Final amount in 2012 = 112 + 20.16 = 132.16

To find the overall percent increase, we find the total increase, then divide this value by the original amount, so:

132.16 − 100 = 32.16

32.16 ÷ 100 = 0.32

= 32%.

60. Answer: D.

$9^{2x+5} = 81^{x+1} \rightarrow 9^{2x+5} = (9^2)^{x+1}$

$\rightarrow 9^{2x+5} = (9)^{2x+2}$

$2x + 5 = 2x + 2$

$5 = 2$ (no solution)

61. Answer: C.

In order to find the average of the set of solutions, we must first solve the inequality:

$-6 < -2x + 4 < 6$

$\rightarrow -10 < -2x < 2$

$\rightarrow 5 > x > -1$

There are a few things to remember when working with absolute values and inequalities. In order to eliminate the absolute value lines, we must be sure that we are considering both the positive and negative distance from 0 in the inequality, an easy way to take care of this is to remove the absolute value lines and treat the expression as if it is also greater than the opposite of the value it is smaller than, for example: $-6 < -2x + 4 < 6$.

Another important thing to remember is that when multiplying or dividing an inequality by a negative value, we must switch the directions of any/all inequality signs, for example:

$$-10 < -2x < 2$$

$$\rightarrow -\frac{10}{-2} > x > \frac{2}{-2}$$

Now that we have the solution set, we can find its average by summing the extreme values and dividing by 2:

$$\frac{5+(-1)}{2} = \frac{4}{2} = 2$$

62. Answer: A.

Three noncollinear points determine a plane. In this case, we know level X is a plane and Ann, Bill, and Carl represent points on that plane. Ann and Bill together are not enough points to define the plane; Dan isn't on plane X and choice d doesn't make sense. Choice a is the only option.

63. Answer: D.

Unlike a plane, an office floor can hold only so many people; however, imagine the office floor extending infinitely in every direction. How many people could it hold? An infinite number.

64. Answer: D.

Just as the office floor can represent a plane, Ann and Bill can represent points. They acquire the characteristics of a point; and as we know, points have no dimension, and two points make a line.

65. Answer: B.

Ann, Bill, and Carl are all on the same floor, which means they are all on the same plane, and they are not lined up. That makes them noncollinear but coplanar.

66. Answer: D.

Carl and Dan represent two points; two points make a line; and all lines are collinear and coplanar. Granted, Dan and Carl are on two different floors; but remember points exist simultaneously on multiple planes.

67. Answer: C.

The first term a_1 is 2 and the common difference is equal to: 5 - 2 = 8 - 5 = 3

Hence using the formula for the nth term, $a_n = a_1 + (n - 1)d$ to the term equal to 227, we can write the equation:

$227 = 2 + (n - 1)3$

Solve the above for n

$n - 1 = (227 - 2) / 3 = 75$ and $n = 76$

The 76th term is equal to 227.

68. Answer: D.

The first term $a_1 = 9$ and $d = 2$ (the difference between any two consecutive odd integers). Hence the sum S_n of the n terms may be written as follows

$S_n = (n/2)[2*a_1 + (n - 1)d] = 15,960$

With $a_1 = 9$ and $d=2$, the above equation in n may be written as follows

$n^2 + 8 n - 15860 = 0$

Solve the above for n

n = 122 and n = -130

The solution to the problem is that 122 consecutive odd numbers must be added in order to obtain a sum of 15,860.

69. Answer: B.

Let r be the radius of the semicircle. Area of the semicircle is known; hence

$1250Pi = (1/2)\ Pi\ r^2$ (note the 1/2 because of the semicircle)

Solve for r: r = 50

Length of rectangle = 2r = 100 (semicircle inscribed)

Width of rectangle = r = 50 (semicircle inscribed)

Area = 100 * 50 = 5000

70. Answer: A

A probability is always greater than or equal to 0 and less than or equal to 1, hence only A above cannot represent probabilities.

71. Answer: C.

We construct a table of frequencies for the the blood groups as follows

group	**frequency**
a	50

B	65
O	70
AB	15

We use the empirical formula of the probability

$$P(E) = \frac{\text{Frequency for O blood}}{\text{Total frequencies}}$$

= 70 / 200 = 0.35

72. Answer: D.

To solve this, set x = 100 and perform the operations. One hundred is a great number to choose here because 1% of 100 is 1.

100 − 0.4 * 100 = 60

60 + 0.25 * 60 = 75

Because x = 100 was our initial value, we want to choose the answer choice that gives us 75 when we substitute 100 for x, 0.75 * 100 = 75, so answer choice (D) is correct.

73. Answer: B.

Recall order of operations and the distributive property to answer this question. The second bracket simplifies to z − x + y and to this we multiply (x + y). Begin by distributing the x through (z − x + y) and to this add the distribution of y through (z − x + y) to get the answer.

74. Answer: C.

The probability of selecting a red marble on the first draw is 10⁄32 because there are 10 red marbles and 32 total marbles. After removing the first red marble there are now 9 red marbles and 31 total marbles left so 9⁄31 chance of selecting the second red marble. To find the probability of both events occurring, we multiply the probabilities to get 9 * 10⁄32 * 31 which reduces to 45⁄496.

75. Answer: B.

We can either use the system of equations to solve for x and y individually to find that x = 5 and y = 2 which gives 25 − 4 = 21, or we can see that if we multiply (x + y) and (x − y) we will be left with x2 − y2, 7 * 3 = 21.

76. Answer: D.

Recall that the circumference is the distance around a circle. If the cake is divided into 12 equal slices, each arc length will be 5. Summing 5 of these slices will give 25.

77. Answer: A.

To solve this problem we will substitute (x + h) for every x in our function $f(x)$:
$f(x+h) = (x+h)^2 + 2(x+h) + 2$.

Evaluate the expression using the distributive property to arrive at:
$x^2 + 2x + 2xh + 2h + h^2 + 2$.

78. Answer: C.

Since vertical angles are congruent, the angle vertical to the 35-degree angle also has a measure of 35 degrees. The supplement of the 120-degree angle has a measure of 60 degrees, so we then have a triangle with angles measuring 35, 60, and x degrees, as shown in the figure provided. Since the angles of a triangle add to 180 degrees:
35 + 60 + x = 180
x = 180 − 35 − 60
x = 85 degrees

79. Answer: C.

Recall that when provided with a point and the slope of a line, we can use point-slope formula to write an equation for the line. The point slope formula is y − y1 = m(x − x1) where (x1, y1) is the point provided and m is the slope. Plug in the point and slope provided and solve for y:
y − 3 = −⅓ (x − 2)
y = −⅓x + $\frac{11}{3}$

80. Answer: C.

Recall midpoint formula is the average of the x values and the average of the y values in (x,y) coordinate form.

First find the x coordinate midpoint:
(10 + (−2)) ÷ 2
= 4

Then find the y coordinate midpoint:
(9 + (−4)) ÷ 2
=2.5

Add them together to get the sum:
4 + 2.5 = 6.5

81. Answer: D.

In approaching this problem, consider the number of options the students have for each role. As a role is taken up, there is 1 less student to fill the next role. For President there are 6 options, for Vice President 5 options, for Secretary 4 options, and for Treasurer 3 options. Multiply each of these to find 360 different groups:
6 * 5 * 4 * 3 = 360

82. Answer: B.

Solve this by process of elimination.

A: True: AB and EF are both perpendicular to line BCF.
C: True: Angle F is a right angle, so the two lines are perpendicular.
D: True: Angle BCA and angle DCF are vertical angles, so they must be equal.
E: True: Angle ABC = angle CDF (they are both right angles).

Angle BCA = angle DCF (see statement D). Therefore, angle BAC must equal angle DFC (since the other two angles are equal, and the three angles total to 180). Since the two triangles have three corresponding angles, they are similar. B can be false.

Although we know that triangles ABC and CDF are similar, we do not know that they are congruent. So these sides may be unequal.

83. Answer: A.

Recall that the angles of a triangle sum to 180 degrees:
$3x + 10 + -2x + 40 + x + 40 = 180$
$2x + 90 = 180$
$2x = 90$
$x = 45$

84. Answer: C.

Begin by rounding the number to the nearest hundredth: 89.88. Now add the tenths place, 8, and the hundredths, 8, to get 16.

85. Answer: C.

Use an equation to represent the situation, $x + x + 2 + x + 4 + x + 6 = 36$. Solve for x to find 6, but recognize that this is the smallest integer in the set, the 3rd largest would be 10.

86. Answer: A.

Because we are presented with a pie chart, we know the percentages spent on each department will add up to 100%, meaning the remaining expenditures represent 26% of all expenditures. We can set up a proportion between the 19% spent on R&D and the 26% spent on others. 19/26 = x/12,250. Cross multiply to solve for x to find 8951.9 which rounds to 8952.

87. Answer: A.

Note that $\log_b b^x = x$, $\log_b b^0 = 0$ and $\log_b 1 = 0$

$\log 16^x = \log_8 1 = 0$

$\log 16^x = 0$

$16^x = 10^0 = 1$

$16^x = 16^0$

$x = 0$

88. Answer: B.

As this question requires a couple spatial relationships, it may prove useful to draw a picture representing the situation. We are given that the diameter, which is the same as the diagonal of a cube, is equal to

5 inches. We also know that the diagonal of a cube is the hypotenuse of the right triangle constructed from one of the cube's side lengths as well as the diagonal of one of the square faces of the cube.

Using this information we will set up an equation for the known relationships (Pythagorean's Theorem) before solving for the target variable s, which represents the cube's side length. We know that the hypotenuse of a cube's square face is $s\sqrt{2}$ (recall that 45°, 45°, 90° right triangles have a side length relationship of x, x, $x\sqrt{2}$). We also know that one side length of the cube is s. Consequently:

$$5^2 = \left(s\sqrt{2}\right)^2 + s^2$$

$$\rightarrow 25 = 2s^2 + s^2$$

$$\rightarrow 25 = 3s^2$$

$$\rightarrow \frac{25}{3} = s^2$$

$$\rightarrow s = 5/\sqrt{3}$$

However, this answer choice is not found, so we must remove the radical from the denominator:

$$\frac{5}{\sqrt{3}} * \frac{\sqrt{3}}{\sqrt{3}} = \frac{5\sqrt{3}}{3} \text{ in.}$$

89. Answer: C.

Find n:

$a_n = a_1 + (n - 1)d$

$-29 = 91 + (n-1)(-6)$

$6(n - 1) = 91 + 29$

$n - 1 = 120 \div 6$

$n = 21$

S = sum

$= n\ (a_1 + a_n) \div 2$

= 21 (91 + [- 29]) ÷ 2
= 21 (62) ÷ 2
= 21 (31)
S = 651

90. Answer: D.
Since in this case the number of scores is even, the median is the average of the two middlemost scores.
median = $\frac{50 + 51}{2} = \frac{101}{2} = 50.5$

91. Answer: A.
Recall that the x-intercept of a function is where the function output $f(x) = 0$. So we begin by setting our function equal to 0 and solving for the target variable x:
$f(x) = 0 = x^3 + 3x^2 - x - 3$

The problem here is that we are most familiar with solving for x when given a linear or a quadratic function and may not easily recall how to factor polynomials of degree 3. However, with some rearranging of terms, we may get a better idea of how to proceed:
$(x^3 + 3x^2) + (-x - 3)$
$\rightarrow x^2(x + 3) - 1(x + 3)$
$\rightarrow (x + 3)(x^2 - 1) = 0$

By grouping our terms together we can find commonalities to factor out to finally arrive at an expression that enables us to directly solve for x. Setting each of the parentheses equal to 0:
$x + 3 = 0, x^2 - 1 = 0$
$\rightarrow x = -3, x = -1, x = 1$
Recall that $x^2 - 1$ is a difference of squares.

Alternatively, if 'a' is a root of a polynomial function, then $f(a) = 0$. We can plug the answer choices into the function to see which answer choice has three values that all yield zero when plugged into the function. Only answer choice (A) works.

92. Answer: C.
The number of ways of arranging **n** objects in a round table is (n – 1)! Ways. For the five students the number of arrangements is (5 – 1)! = 4! = 24

93. Answer: B.
Solve this problem by setting up a proportion. We are told the ratio of milk to juice is 13:x and that there are 39 milk and 18 juice so → 13/x = 39/18, cross multiply and solve for x to get 6.

94. Answer: B.
$\frac{tan^2\theta - sin^2\theta}{tan^2\theta\ sin^2\theta} = \frac{tan^2\theta}{tan^2\theta\ sin^2\theta} - \frac{sin^2\theta}{tan^2\theta\ sin^2\theta} = \frac{1}{sin^2\theta} - \frac{1}{tan^2\theta} = \csc^2\theta - \cot^2\theta = 1$

95. Answer: C.
Here we are required to initially substitute the known values of a and b into the expressions provided before finding the difference.
Substituting the values of a and b into the first expression gives:
(−13)(4) + 3(4)
= −4 + 12
= 8

Substituting the values of a and b into the second expression gives:
(−13)(4) + 3(4)0
= −4 + 3(1)
= −4 + 3
= −1

The difference between the two expressions is 8 − (−1) = 9

Recall that any number (other than 0) to the 0 power is 1 and that subtracting a negative is the same as adding.

96. Answer: B.

Evaluate the expression to find the most simplified form. First evaluate the coefficients:

$4 * 2 * 1/3 * 1/4 = 2/3$

$x * x^2 = x^3$

$y * y^2 * y^2 = y^5$

$z * z^3 * z = z^5$

Combine each of these terms to get answer choice (B).

97. Answer: C.

$\frac{P_1}{P_2} = \sqrt{\frac{A_1}{A_2}} = \sqrt{\frac{64}{729}} = \frac{8}{27} = 8 : 27$

98. Answer: C.

$\frac{a+b+c}{3} = \frac{a+b}{2} \rightarrow 2(a + b + c) = 3 (a + b) \rightarrow 2a + 2b + 2c = 3a + 3b \rightarrow 2c = a + b \rightarrow c = \frac{a+b}{2}$

99. Answer: B.

Let n be the number of tickets.

$n = 4 + \frac{(n-4)}{2} + 12 + 15 \rightarrow n = \frac{(n-4)}{2} + 31 \rightarrow 2n = n - 4 + 62 \rightarrow n = 58$

100. Answer: B.

Let x = original number of candies

Catherine: $\frac{1}{6}x$

Farah: $\frac{2}{5}x$

Wendy: 4

Jane: 100

$x = \frac{1}{6}x + \frac{2}{5}x + 4 + 100$

$x = \frac{1}{6}x + \frac{2}{5}x + 104$

$30x = 5x + 12x + 3120$

$13x = 3120$

$x = 240$

9

Reading Answer Key

1. A
2. C
3. B
4. C
5. D
6. B
7. D
8. A
9. C
10. B
11. D
12. C
13. C
14. D
15. C
16. B
17. D
18. B
19. D
20. B
21. C
22. A
23. D
24. B
25. D
26. C

27. A
28. D
29. B
30. C
31. A
32. D
33. A
34. B
35. D
36. D
37. B
38. B
39. A
40. A
41. C
42. B
43. A
44. C
45. D
46. A
47. C
48. B
49. A
50. D
51. D
52. D
53. B
54. B
55. C
56. D
57. B
58. A
59. D
60. B
61. D
62. A
63. C
64. B

65. C

66. D

67. B

68. C

69. C

70. D

71. A

72. C

73. A

74. B

75. D

76. C

77. B

78. D

79. A

80. C

81. D

82. A

83. B

84. B

85. C

86. B

87. B

88. B

89. C

90. C

91. B

92. C

93. C

94. D

95. A

96. B

97. C

98. C

99. A

100. A

101. D

102. C

103. B

104. D

105. A

106. D

107. D

108. A

109. B

110. A

111. B

112. B

113. D

114. A

115. C

116. B

117. A

118. B

119. A

120. B

121. C

122. D

123. C

124. A

125. B

126. C

127. A

128. D

129. D

130. C

131. B

132. A

133. D

134. C

135. B

136. A

137. D

138. C

139. B

140. A

141. C

142. D

143. B

144. C

145. D

146. A

147. C

148. C

149. C