

CAT 2020 Question Paper & Answer Key Download PDF



###COMMON###1###6###

Give the answers to following questions based on given caselet below.

Four institutes, A, B, C, and D, had contracts with four vendors W, X, Y, and Z during the ten calendar years from 2010 to 2019. The contracts were either multi-year contracts running for several consecutive years or single-year contracts. No institute had more than one contract with the same vendor. However, in a calendar year, an institute may have had contracts with multiple vendors, and a vendor may have had contracts with multiple institutes. It is known that over the decade, the institutes each got into two contracts with two of these vendors, and each vendor got into two contracts with two of these institutes.

The following facts are also known about these contracts.

I. Vendor Z had at least one contract in every year.

II. Vendor X had one or more contracts in every year up to 2015, but no contract in any year after that.

III. Vendor Y had contracts in 2010 and 2019. Vendor W had contracts only in 2012

IV. There were five contracts in 2012

V. There were exactly four multi-year contracts. Institute B had a 7-year contract, D had a 4-year contract, and A and C had one 3-year contract each. The other four contracts were single-year contracts.

VI. Institute C had one or more contracts in 2012 but did not have any contract in 2011

VII. Institutes B and D each had exactly one contract in 2012. Institute D did not have any contract in 2010

###DONE###

1. In which of the following years were there two or more contracts?

- A. 2015
- B. 2018
- C. 2017
- D. 2016

2. Which of the following is true?

- A. B had a contract with Y in 2019
- B. B had a contract with Z in 2017
- C. D had a contract with X in 2011
- D. D had a contract with Y in 2019

3. In how many years during this period was there only one contract?

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

4. What BEST can be concluded about the number of contracts in 2010?

- A. exactly 4
- B. exactly 3
- C. at least 3
- D. at least 4

5. Which institutes had multiple contracts during the same year?

- A. A only
- B. B only
- C. A and B only
- D. B and C only

6. Which institutes and vendors had more than one contracts in any year?

- A. B, W, X, and Z
- B. B, D, W, and X
- C. A, B, W, and X
- D. A, D, W, and Z

###COMMON###7###10###

Answer the questions based on given below information:

Ten musicians (A, B, C, D, E, F, G, H, I and J) are experts in at least one of the following three percussion instruments: tabla, mridangam, and ghatam. Among them, three are experts in tabla but not in mridangam or ghatam, another three are experts in mridangam but not in tabla or ghatam, and one is an expert in ghatam but not in tabla or mridangam. Further, two are experts in tabla and mridangam but not in ghatam, and one is an expert in tabla and ghatam but not in mridangam.

The following facts are known about these ten musicians.

- 1) Both A and B are experts in mridangam, but only one of them is also an expert in tabla.
- 2) D is an expert in both tabla and ghatam.
- 3) Both F and G are experts in tabla, but only one of them is also an expert in mridangam.
- 4) Neither I nor J is an expert in tabla.
- 5) Neither H nor I is an expert in mridangam, but only one of them is an expert in ghatam.

###DONE###

7. Who among the following is DEFINITELY an expert in tabla but not in either mridangam or ghatam?

- A. H
- B. A
- C. F
- D. C

8. Who among the following is DEFINITELY an expert in mridangam but not in either tabla or ghatam?

- A. J
- B. B
- C. G
- D. E

9. Which of the following pairs CANNOT have any musician who is an expert in both tabla and mridangam but not in ghatam?

- A. C and E
- B. A and B
- C. C and F
- D. F and G

10. If C is an expert in mridangam and F is not, then which are the three musicians who are experts in tabla but not in either mridangam or ghatam?

- A. E, G and H
- B. C, E and G
- C. E, F and H
- D. C, G and H

###COMMON###11###14###

Answer the following questions based on below given information.

The local office of the APP-CAB company evaluates the performance of five cab drivers, Arun, Barun, Chandan, Damodaran, and Eman for their monthly payment based on ratings in five different parameters (P1 to P5) as given below:

P1: timely arrival

P2: behavior

P3: comfortable ride

P4: driver's familiarity with the route

P5: value for money

Based on feedback from the customers, the office assigns a rating from 1 to 5 in each of these parameters. Each rating is an integer from a low value of 1 to a high value of 5. The final rating of a driver is the average of his ratings in these five parameters. The monthly payment of the drivers has two parts – a fixed payment and final rating-based bonus. If a driver gets a rating of 1 in any of the parameters, he is not eligible to get bonus. To be eligible for bonus a driver also needs to get a rating of five in at least one of the parameters.

The partial information related to the ratings of the drivers in different parameters and the monthly payment structure (in rupees) is given in the table below:

	P1	P2	P3	P4	P5	Fixed payment	Bonus
Arun				4		Rs.1000	Rs.250 × Final Rating
Barun	3					Rs.1200	Rs.200 × Final Rating
Chandan			2			Rs.1400	Rs.100 × Final Rating
Damodaran		3				Rs.1300	Rs.150 × Final Rating
Eman					2	Rs.1100	Rs.200 × Final Rating

The following additional facts are also known:

1) Arun and Barun have got a rating of 5 in exactly one of the parameters. Chandan has got a rating of 5 in exactly two parameters.

2) None of drivers has got the same rating in three parameters. ####DONE####

11. If Damodaran does not get a bonus, what is the maximum possible value of his final rating?

- A. 3.4
- B. 3.2
- C. 3.8
- D. 3.6

12.If Eman gets a bonus, what is the minimum possible value of his final rating?

- A. 3.4
- B. 2.8
- C. 3.2
- D. 3.0

13.If all five drivers get bonus, what is the minimum possible value of the monthly payment (in rupees) that a driver gets?

- A. 1750
- B. 1740
- C. 1700
- D. 1600

14.If all five drivers get bonus, what is the maximum possible value of the monthly payment (in rupees) that a driver gets?

- A. 1950
- B. 2050
- C. 1960
- D. 1900

###COMMON###15###20###

Answer the questions based on information given below.

In a certain board examination, students were to appear for examination in five subjects: English, Hindi, Mathematics, Science and Social Science. Due to a certain emergency situation, a few of the examinations could not be conducted for some students. Hence, some students missed one examination and some others missed two examinations. Nobody missed more than two examinations.

The board adopted the following policy for awarding marks to students. If a student appeared in all five examinations, then the marks awarded in each of the examinations were on the basis of the scores obtained by them in those examinations.

If a student missed only one examination, then the marks awarded in that examination was the average of the best three among the four scores in the examinations they appeared for.

If a student missed two examinations, then the marks awarded in each of these examinations was the average of the best two among the three scores in the examinations they appeared for.

The marks obtained by six students in the examination are given in the table below. Each of them missed either one or two examinations.

	English	Hindi	Mathematics	Science	Social Science
Alva	80	75	70	75	80
Bithi	90	80	55	85	85
Carl	75	80	90	100	90
Deep	70	80	100	90	80
Esha	80	85	95	60	55
Foni	83	72	78	88	83

The following facts are also known:

I. Four of these students appeared in each of the English, Hindi, Science, and Social Science examinations.

II. The student who missed the Mathematics examination did not miss any other examination.

III. One of the students who missed the Hindi examination did not miss any other examination. The other student who missed the Hindi examination also missed the Science examination.

####DONE###

15. Who among the following did not appear for the Mathematics examination?

- A. Foni
- B. Alva
- C. Carl
- D. Esha

16. Which students did not appear for the English examination?

- A. Alva and Bithi
- B. Cannot be determined
- C. Esha and Foni
- D. Carl and Deep

17. What BEST can be concluded about the students who did not appear for the Hindi examination?

- A. Deep and Esha
- B. Alva and Deep
- C. Two among Alva, Deep and Esha
- D. Alva and Esha

18. What BEST can be concluded about the students who missed the Science examination?

- A. Deep and Bithi
- B. Alva and Bithi
- C. Bithi and one out of Alva and Deep
- D. Alva and Deep

19. How many out of these six students missed exactly one examination? (TITA)

20. For how many students can we be definite about which examinations they missed? (TITA)

####COMMON####21####24####

Answer the following Questions based on information given below.

1000 patients currently suffering from a disease were selected to study the effectiveness of treatment of four types of medicines — A, B, C and D. These patients were first randomly assigned into two groups of equal size, called treatment group and control group. The patients in the control group were not treated with any of these medicines; instead they were given a dummy medicine, called placebo, containing only sugar and starch. The following information is known about the patients in the treatment group.

a. A total of 250 patients were treated with type A medicine and a total of 210 patients were treated with type C medicine.

b. 25 patients were treated with type A medicine only. 20 patients were treated with type C medicine only. 10 patients were treated with type D medicine only.

c. 35 patients were treated with type A and type D medicines only. 20 patients were treated with type A and type B medicines only. 30 patients were treated with type A and type C medicines only. 20 patients were treated with type C and type D medicines only.

d. 100 patients were treated with exactly three types of medicines.

e. 40 patients were treated with medicines of types A, B and C, but not with medicines of type D. 20 patients were treated with medicines of types A, C and D, but not with medicines of type B.

f. 50 patients were given all the four types of medicines. 75 patients were treated with exactly one type of medicine.

####DONE###

21. How many patients were treated with medicine type B? (TITA)

22. The number of patients who were treated with medicine types B, C and D, but not type A was; (TITA)

23. How many patients were treated with medicine types B and D only? (TITA)

24. The number of patients who were treated with medicine type D was: (TITA)

25.. If $\log_4 5 = (\log_4 y) (\log_6 5)$, then y equals,

26. An alloy is prepared by mixing three metals A, B and C in the proportion 3 : 4 : 7 by volume. Weights of the same volume of the metals A, B and C are in the ratio 5 : 2 : 6. In 130 kg of the alloy, the weight in kg, of the metal C is

- A. 96
- B. 84
- C. 70
- D. 48

27. Leaving home at the same time, Amal reaches office at 10:15 am if he travels at 8 km/hr, and at 9:40 am if he travels at 15 km/hr. Leaving home at 9:10 am, at what speed, in km/hr must he travel so as to reach office exactly at 10 am?

- A. 13
- B. 14
- C. 11
- D. 12

28. Let A, B and C be three positive integers such that the sum of A and the mean of B and C is 5. In addition, the sum of B and the mean of A and C is 7. Then the sum of A and B is

- A. 4
- B. 5
- C. 7
- D. 6

29. A solid right circular cone of height 27 cm is cut into two pieces along a parallel to its base at a height of 18 cm from the base. If the difference in volume of the two pieces is 225 cc, the volume, in cc, of the original cone is

- A. 256
- B. 232
- C. 264
- D. 243

30. Two persons are walking beside a railway track at respective speeds of 2 and 4 km per hour in the same direction. A train came from behind them and crossed them in 90 and 100 seconds, respectively. The time, in seconds, taken by the train to cross an electric post is nearest to

A. 78
B. 82
C. 87
D. 75

31. A gentleman decided to treat a few children in the following manner. He gives half of his total stock to toffees and one extra to the first child, and then the half of the remaining stock along with one extra to the second and continues giving away in this fashion. His total stock exhausts after he takes care of 5 children. How many toffees were there in his stock initially? (TITA)

32. If a , b and c are positive integers such that $ab = 432$, $bc = 96$ and $c < 9$, then the smallest possible value of $a + b + c$ is

A. 46
B. 59
C. 49
D. 56

33. Among 100 students, x_1 have birthdays in January, x_2 have birthdays in February, and so on. If $x_0 = \max(x_1, x_2, \dots, x_{12})$, then the smallest possible value of x_0 is

A. 10
B. 9
C. 12
D. 8

34. The mean of all 4-digit even natural numbers of the form 'aabb', where $a > 0$, is

A. 4466
B. 4864

C. 5050
D. 5544

35. The number of real valued solutions of the equation $2^x + 2^{-x} = 2 - (x - 2)^2$ is

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

36. How many distinct positive integer valued solutions exist to the equation $(x^2 - 7x + 11)^{(x^2 - 13x + 42)} = 1$?

A. 8
B. 2
C. 4
D. 6

37. In a group of people, 28% of the members are young while the rest are old. If 65% of the numbers are literates, and 25% of the literates are young, then the percentage of old people among the illiterates is nearest to

A. 66
B. 59
C. 62
D. 55

38. A straight road connects points A and B. Car 1 travels from A to B and Car 2 travels from B to A, both leaving at the same time. After meeting each other, they take 45 minutes and 20 minutes, respectively, to complete their journey. If Car 1 travels at the speed of 60 km/hr, then the speed of Car 2, in km/hr, is

A. 100
B. 80
C. 90
D. 70

39. A person spent Rs. 50000 to purchase a desktop computer and a laptop computer. He sold the desktop at 20% profit and the laptop at 10% loss. If overall he made a 2% profit then the purchase price, in rupees, of the desktop is

40. If $f(5 + x) = f(5 - x)$ for every real x , and $f(x) = 0$ has four distinct real roots, then the sum of these roots is

- A. 20
- B. 0
- C. 40
- D. 10

41. Veeru invested Rs. 10000 at 5% simple annual interest, and exactly after two years, Joy invested Rs. 8000 at 10% simple annual interest. How many years after Veeru's investment, will their balances, i.e., principal plus accumulated interest, be equal?

42. On a rectangular metal sheet of area 135 sq. in, a circle is painted such that the circle touches two possible sides. If the area of the sheet left unpainted is two-thirds of the painted area then the perimeter of the rectangle in inches is

- A. $5\sqrt{\pi}\left(3 + \frac{9}{\pi}\right)$
- B. $3\sqrt{\pi}\left(\frac{5}{2} + \frac{6}{\pi}\right)$
- C. $4\sqrt{\pi}\left(3 + \frac{9}{\pi}\right)$
- D. $3\sqrt{\pi}\left(5 + \frac{12}{\pi}\right)$

43. How many 3-digit numbers are there, for which the product of their digits is more than 2 but less than 7?

44. A solution, of volume 40 litres, has dye and water in the proportion 2 : 3. Water is added to the solution to change this proportion to 2 : 5. If one-fourths of this diluted solution is taken out, how many litres of dye must be added to the remaining solution to bring the proportion back to 2 : 3?

45. The area of the region satisfying the inequalities $|x| - y \leq 1$, $y \geq 0$ and $y \leq 1$ is (TITA)

46. A circle is inscribed in a rhombus with diagonals 12 cm and 16 cm. The ratio of the area of the circle to the area of rhombus is

- A. $6\pi/25$
- B. $2\pi/15$
- C. $3\pi/25$
- D. $5\pi/18$

47. If y is a negative number such that $2^{y^2 \log_2 5} = 5^{\log_2 3}$, then y equal

- A. $-\log_2(1/5)$
- B. $\log_2(1/3)$
- C. $\log_2(1/5)$
- D. $-\log_2(1/3)$

48. A train travelled at one thirds of its usual speed, and hence reached the destination 30 minutes after the scheduled time. On its return journey, the train initially travelled at its usual speed for 5 minutes but then stopped for 4 minutes for an emergency. The percentage by which the train must now increase its usual speed so as to reach the destination at the scheduled time, is nearest to

- A. 67
- B. 61
- C. 50
- D. 58

49. If $x = (4096)^{7+4\sqrt{3}}$, then which of the following equals 64?

A. $\frac{x^7}{x^{2\sqrt{3}}}$

B. $\frac{x^7}{x^{4\sqrt{3}}}$

C. $\frac{x^{\frac{7}{2}}}{x^{2\sqrt{3}}}$

D. $\frac{x^{\frac{7}{2}}}{x^{\frac{4}{\sqrt{3}}}}$

50. The number of distinct real roots of the equation

$$\left(x + \frac{1}{x}\right)^2 - 3\left(x + \frac{1}{x}\right) + 2 = 0 \text{ equals}$$

(TITA)

####COMMON####51####54####

Direction: The passage below is accompanied by a set of questions. Choose the best answer to each question.

In the late 1960s, while studying the northern elephant seal population along the coasts of Mexico and California, Burney LeBoeuf and his colleagues couldn't help but notice that the threat calls of males at some sites sounded different from those of males at other sites. . . . That was the first time dialects were documented in a nonhuman mammal. . . . All the northern elephant seals that exist today are descendants of the small herd that survived on Isla Guadalupe [after the near extinction of the species in the nineteenth century]. As that tiny population grew, northern elephant seals started to recolonize former breeding locations. It was precisely on the more recently colonized islands where Le Boeuf found that the tempos of the male vocal displays showed stronger differences to the ones

from Isla Guadalupe, the founder colony. In order to test the reliability of these dialects over time, Le Boeuf and other researchers visited Año Nuevo Island in California—the island where males showed the slowest pulse rates in their calls—every winter from 1968 to 1972. “What we found is that the pulse rate increased, but it still remained relatively slow compared to the other colonies we had measured in the past” Le Boeuf told me. At the individual level, the pulse of the calls stayed the same: A male would maintain his vocal signature throughout his lifetime. But the average pulse rate was changing. Immigration could have been responsible for this increase, as in the early 1970s, 43 percent of the males on Año Nuevo had come from southern rookeries that had a faster pulse rate. This led Le Boeuf and his collaborator, Lewis Petrinovich, to deduce that the dialects were, perhaps, a result of isolation over time, after the breeding sites had been recolonized. For instance, the first settlers of Año Nuevo could have had, by chance, calls with low pulse rates. At other sites, where the scientists found faster pulse rates, the opposite would have happened—seals with faster rates would have happened to arrive first. As the population continued to expand and the islands kept on receiving immigrants from the original population, the calls in all locations would have eventually regressed to the average pulse rate of the founder colony. In the decades that followed, scientists noticed that the geographical variations reported in 1969 were not obvious anymore. . . . In the early 2010s, while studying northern elephant seals on Año Nuevo Island, [researcher Caroline] Casey noticed, too, that what Le Boeuf had heard decades ago was not

what she heard now. By performing more sophisticated statistical analyses on both sets of data, [Casey and Le Boeuf confirmed that dialects existed back then but had vanished. Yet there are other differences between the males from the late 1960s and their great-great-grandsons: Modern males exhibit more individual diversity, and their calls are more complex. While 50 years ago the drumming pattern was quite simple and the dialects denoted just a change in tempo, Casey explained, the calls recorded today have more complex structures, sometimes featuring doublets or triplets.

####DONE###

51. From the passage it can be inferred that the call pulse rate of male northern elephant seals in the southern rookeries was faster because:

- A. A large number of male northern elephant seals from Año Nuevo Island might have migrated to the southern rookeries to recolonise them.
- B. The calls of male northern elephant seals in the southern rookeries have more sophisticated structures, containing doublets and triplets.
- C. The male northern elephant seals of Isla Guadalupe with faster call pulse rates might have been the original settlers of the southern rookeries.
- D. A large number of male northern elephant seals migrated from the southern rookeries to Año Nuevo Island in the early 1970s.

52. Which one of the following conditions, if true, could have ensured that male northern elephant seal dialects did not disappear?

A. The call tempo of individual male seals in host colonies changed to match the average call tempo of immigrant male seals.

B. Besides Isla Guadalupe, there was one more surviving colony with the same average male call tempo from which no migration took place.

C. Besides Isla Guadalupe, there was one more founder colony with the same average male call tempo from which male seals migrated to various other colonies.

D. The call tempo of individual immigrant male seals changed to match the average tempo of resident male seals in the host colony.

53. Which one of the following best sums up the overall history of transformation of male northern elephant seal calls?

A. Owing to migrations in the aftermath of near species extinction, the average call pulse rates in the re-colonised breeding locations exhibited a gradual increase until they matched the tempo at the founding colony.

B. Owing to migrations in the aftermath of near species extinction, the calls have transformed from exhibiting complex composition, less individual variety, and great regional variety to simple composition, less individual variety, and great regional variety.

C. The calls have transformed from exhibiting simple composition, less individual variety, and great regional variety to complex composition, great individual variety, and less regional variety.

D. The calls have transformed from exhibiting simple composition, great individual variety, and less regional variety to complex composition, less individual variety, and great regional variety.

54. All of the following can be inferred from Le Boeuf's study as described in the passage EXCEPT that :

- A. Male northern elephant seals might not have exhibited dialects had they not become nearly extinct in the nineteenth century.
- B. changes in population and migration had no effect on the call pulse rate of individual Individual male northern elephant seals.
- C. The average call pulse rate of male northern elephant seals at Año Nuevo Island increased from the early 1970s till the disappearance of dialects.
- D. the influx of new northern elephant seals into Año Nuevo Island would have soon made the call pulse rate of its male seals exceed that of those at Isla Guadalupe.

####COMMON####55####59####

Directions. The passage below is accompanied by a set of questions. Choose the best answer to each question.

The word 'anarchy' comes from the Greek anarkhia, meaning contrary to authority or without a ruler, and was used in a derogatory sense until 1840, when it was adopted by Pierre-Joseph Proudhon to describe his political and social ideology. Proudhon argued that organization without government was both possible and desirable. In the evolution of political ideas, anarchism can be seen as an ultimate projection of both liberalism and socialism, and the differing strands of anarchist thought can be related to their emphasis on one or the other of these. Historically, anarchism arose not only as an explanation of the gulf between the rich and the poor in any community, and of the

reason why the poor have been obliged to fight for their share of a common inheritance, but as a radical answer to the question 'What went wrong?' that followed the ultimate outcome of the French Revolution. It had ended not only with a reign of terror and the emergence of a newly rich ruling caste, but with a new adored emperor, Napoleon Bonaparte, strutting through his conquered territories. The anarchists and their precursors were unique on the political Left in affirming that workers and peasants, grasping the chance that arose to bring an end to centuries of exploitation and tyranny, were inevitably betrayed by the new class of politicians, whose first priority was to re-establish a centralized state power. After every revolutionary uprising, usually won at a heavy cost for ordinary populations, the new rulers had no hesitation in applying violence and terror, a secret police, and a professional army to maintain their control. For anarchists the state itself is the enemy, and they have applied the same interpretation to the outcome of every revolution of the 19th and 20th centuries. This is not merely because every state keeps a watchful and sometimes punitive eye on its dissidents, but because every state protects the privileges of the powerful. The mainstream of anarchist propaganda for more than a century has been anarchist-communism, which argues that property in land, natural resources, and the means of production should be held in mutual control by local communities, federating for innumerable joint purposes with other communes. It differs from state socialism in opposing the concept of any central authority. Some anarchists prefer to distinguish between anarchist-communism and collectivist anarchism in order to stress the obviously

desirable freedom of an individual or family to possess the resources needed for living, while not implying the right to own their sources needed by others. . . . There are, unsurprisingly, several traditions of individualist anarchism, one of them deriving from the 'conscious egoism' of the German writer Max Stirner (1806–56), and another from a remarkable series of 19th-century American figures who argued that in protecting our own autonomy and associating with others for common advantages, we are promoting the good of all. These thinkers differed from free-market liberals in their absolute mistrust of American capitalism, and in their emphasis on mutualism.

###DONE###

55. Of the following sets of concepts, identify the set that is conceptually closest to the concerns of the passage.

- A. Anarchism, State, Individual, Freedom
- B. Anarchism, Betrayal, Power, State
- C. Revolution, State, Strike, Egoism
- D. Revolution, State, Protection, Liberals

56. Which one of the following best expresses the similarity between American individualist anarchists and free-market liberals as well as the difference between the former and the latter?

- A. Both reject the regulatory power of the state; but the former favour a people's state, while the latter favour state intervention in markets.
- B. Both prioritise individual autonomy; but the former also emphasise mutual dependence, while the latter do not do so.
- C. Both are sophisticated arguments for capitalism; but the former argue for a morally upright capitalism, while the latter argue that the market is the only morality.

D. Both are founded on the moral principles of altruism; but the latter conceive of the market as a force too mystical for the former to comprehend

57. The author makes all of the following arguments in the passage, EXCEPT :

- A. The failure of the French Revolution was because of its betrayal by the new class of politicians who emerged from it.
- B. The popular perception of anarchism as espousing lawlessness and violence comes from a mainstream mistrust of collectivism
- C. For anarchists, the state is the enemy because all states apply violence and terror to maintain their control.
- D. Individualist anarchism is actually constituted of many streams, all of which focus on the autonomy of the individual.

58. The author believes that the new ruling class of politicians betrayed the principles of the French Revolution, but does not specify in what way. In the context of the passage, which statement below is the likeliest explanation of that betrayal?

- A. The anarchists did not want a new ruling class, but were not politically strong enough to stop them.
- B. The new ruling class was constituted mainly of anarchists who were against the destructive impact of the Revolution on the market.
- C. The new ruling class rode to power on the strength of the workers' revolutionary anger, but then turned to oppress that very class.
- D. The new ruling class struck a deal with the old ruling class to share power between them.

59. According to the passage, what is the one idea that is common to all forms of anarchism?

- A. They all focus on the primacy of the power of the individual.
- B. They all derive from the work of Pierre-Joseph Proudhon.
- C. There is no idea common to all forms of anarchism; that is why it is anarchic.
- D. They are all opposed to the centralisation of power in the state.

###COMMON###60###63###

Direction: The passage below is accompanied by a set of questions. Choose the best answer to each question.

Few realise that the government of China, governing an empire of some 60 million people during the Tang dynasty (618–907), implemented a complex financial system that recognized grain, coins and textiles as money. . . . Coins did have certain advantages: they were durable, recognisable and provided a convenient medium of exchange, especially for smaller transactions. However, there were also disadvantages. A continuing shortage of copper meant that government mints could not produce enough coins for the entire empire, to the extent that for most of the dynasty's history, coins constituted only a tenth of the money supply. One of the main objections to calls for taxes to be paid in coin was that peasant producers who could weave cloth or grow grain – the other two major currencies of the Tang – would not be able to produce coins, and therefore would not be able to pay their taxes. . . . As coins had advantages and disadvantages, so too did textiles. If in circulation for a long period of time, they could show signs of wear and tear. Stained, faded and torn bolts of textiles had less value than a brand new bolt. Furthermore,

a full bolt had a particular value. If consumers cut textiles into smaller pieces to buy or sell something worth less than a full bolt, that, too, greatly lessened the value of the textiles. Unlike coins, textiles could not be used for small transactions; as [an official] noted, textiles could not “be exchanged by the foot and the inch” . . . But textiles had some advantages over coins. For a start, textile production was wide spread and there were fewer problems with the supply of textiles. For large transactions, textiles weighed less than their equivalent in coins since a string of coins . . . could weigh as much as 4 kg. Furthermore, the dimensions of a bolt of silk held remarkably steady from the third to the tenth century: 56 cm wide and 12 m long . . . The values of different textiles were also more stable than the fluctuating values of coins. . . . The government also required the use of textiles for large transactions. Coins, on the other hand, were better suited for smaller transactions, and possibly, given the costs of transporting coins, for a more local usage. Grain, because it rotted easily, was not used nearly as much as coins and textiles, but taxpayers were required to pay grain to the government as a share of their annual tax obligations, and official salaries were expressed in weights of grain. . . . In actuality, our own currency system today has some similarities even as it is changing in front of our eyes. . . . We have cash – coins for small transactions like paying for parking at a meter, and banknotes for other items; cheques and debit/credit cards for other, often larger, types of payments. At the same time, we are shifting to electronic banking and making payments online

###DONE###

60. During the Tang period, which one of the following would not be an economically sound decision for a small purchase in the local market that is worth one-eighth of a bolt of cloth?

- A. Cutting one-eighth of the fabric from a new bolt to pay the amount.
- B. Using coins issued by the government to make the payment.
- C. Making the payment with the appropriate weight of grain.
- D. Paying with a faded bolt of cloth that has approximately the same value.

61. When discussing textiles as currency in the Tang period, the author uses the words “steady” and “stable” to indicate all of the following EXCEPT:

- A. reliable transportation
- B. reliable quality
- C. reliable supply
- D. reliable measurements

62. In the context of the passage, which one of the following can be inferred with regard to the use of currency during the Tang era?

- A. Copper coins were more valuable and durable than textiles
- B. Currency usage was similar to that of modern times
- C. Currency that deteriorated easily was not used for official work.
- D. Grains were the most used currency because of government requirements.

63. According to the passage, the modern currency system shares all the following features with that of the Tang, EXCEPT that:

- A. it uses different materials as currency
- B. its currencies fluctuate in value over time

C. it uses different currencies for different situations.

D. it is undergoing transformation

####COMMON####64####68####

Direction: The passage below is accompanied by a set of questions. Choose the best answer to each question.

Vocabulary used in speech or writing organizes itself in seven parts of speech (eight, if you count interjections such as Oh! and Gosh! and Fuhgeddaboudit!). Communication composed of these parts of speech must be organized by rules of grammar upon which we agree. When these rules break down, confusion and misunderstanding result. Bad grammar produces bad sentences. My favorite example from Strunk and White is this one: “As a mother of five, with another one on the way, my ironing board is always up.”

Nouns and verbs are the two indispensable parts of writing. Without one of each, no group of words can be a sentence, since a sentence is, by definition, a group of words containing a subject (noun) and a predicate (verb); these strings of words begin with a capital letter, end with a period, and combine to make a complete thought which starts in the writer’s head and then leaps to the reader’s.

Must you write complete sentences each time, every time? Perish the thought. If your work consists only of fragments and floating clauses, the Grammar Police aren’t going to come and take you away. Even William Strunk, that Mussolini of rhetoric, recognized the delicious pliability of language. “It is an old observation,” he writes, “that the best writers some times disregard the rules of rhetoric.” Yet he goes on to add this thought, which I urge you to consider: “Unless he is certain of doing

well, [the writer] will probably do best to follow the rules.”

The telling clause here is Unless he is certain of doing well. If you don’t have a rudimentary grasp of how the parts of speech translate into coherent sentences, how can you be certain that you are doing well? How will you know if you’re doing ill, for that matter? The answer, of course, is that you can’t, you won’t. One who does grasp the rudiments of grammar finds a comforting simplicity at its heart, where there need be only nouns, the words that name, and verbs, the words that act.

Take any noun, put it with any verb, and you have a sentence. It never fails. Rocks explode. Jane transmits. Mountains float. These are all perfect sentences. Many such thoughts make little rational sense, but even the stranger ones (Plums deify!) have a kind of poetic weight that’s nice. The simplicity of noun-verb construction is useful—at the very least it can provide a safety net for your writing. Strunk and White caution against too many simple sentences in a row, but simple sentences provide a path you can follow when you fear getting lost in the tangles of rhetoric—all those restrictive and nonrestrictive clauses, those modifying phrases, those appositives and compound-complex sentences. If you start to freak out at the sight of such unmapped territory (unmapped by you, at least), just remind yourself that rocks explode, Jane transmits, mountains float, and plums deify. Grammar is . . . the pole you grab to get your thoughts up on their feet and walking.

####DONE####

64. All of the following statements can be inferred from the passage EXCEPT that :

A. sentences do not always have to be complete.

B. the subject–predicate relation is the same as the noun–verb relation.

C. “Grammar Police” is a metaphor for critics who focus on linguistic rules

D. the primary purpose of grammar is to ensure that sentences remain simple

65. Inferring from the passage, the author could be most supportive of which one of the following practices?

A. A campaign demanding that a writer’s creative license should allow the breaking of grammatical rules.

B. A Creative Writing course that focuses on how to avoid the use of rhetoric.

C. The critique of standardised rules of punctuation and capitalization.

D. The availability of language software that will standardise the rules of grammar as an aid to writers.

66. “Take any noun, put it with any verb, and you have a sentence. It never fails. Rocks explode. Jane transmits. Mountains float.” None of the following statements can be seen as similar EXCEPT:

A. Take any vegetable, put some spices in it, and you have a dish.

B. A collection of people with the same sports equipment is a sports team

C. A group of nouns arranged in a row becomes a sentence.

D. Take an apple tree, plant it in a field, and you have an orchard.

67. Which one of the following statements, if false, could be seen as supporting the arguments in the passage?

A. An understanding of grammar helps a writer decide if she/he is writing well or not.

B. Regarding grammar, women writers tend to be more attentive to method and accuracy.

C. It has been observed that writers sometimes disregard the rules of rhetoric.
D. Perish the thought that complete sentences necessarily need nouns and verbs!

68. Which one of the following quotes best captures the main concern of the passage?

- A. "Nouns and verbs are the two indispensable parts of writing. Without one of each no group of words can be a sentence . . ."
B. "The telling clause here is Unless he is certain of doing well."
C. "Bad grammar produces bad sentences."
D. "Strunk and White caution against too many simple sentences in a row, but simple sentences provide a path you can follow when you fear getting lost in the tangles of rhetoric . . ."

####COMMON####69####69####

Direction: The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer:

####DONE####

69.

- 1) Tensions and sometimes conflict remain an issue in and between the 11 states in South East Asia (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste and Vietnam).
2) China's rise as a regional military power and its claims in the South China Sea have become an increasingly pressing security concern for many South East Asian states.
3) Since the 1990s, the security environment of South East Asia has seen both continuity and profound changes.

4) These concerns cause states from outside the region to take an active interest in South East Asian security.

####COMMON####70####70####

Direction:. The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer:

####DONE####

70. 1) Relying on narrative structure alone, indigenous significances of nineteenth century San folktales are hard to determine.
2) Using their supernatural potency, benign shamans transcend the levels of the San cosmos in order to deal with social conflict and to protect material resources and enjoy a measure of respect that sets them apart from ordinary people.
3) Selected tales reveal that they deal with a form of spiritual conflict that has social implications and concern conflict between people and living or dead malevolent shamans.
4) Meaning can be elicited, and the tales contextualized, by probing beneath the narrative of verbatim, original-language records and exploring the connotations of highly significant words and phrases.

####COMMON####71####71####

Direction:. The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

####DONE####

71. As Soviet power declined, the world became to some extent multi polar, and Europe strove to define an independent identity. What a journey Europe has undertaken to reach this point. It had in

every century changed its internal structure and invented new ways of thinking about the nature of international order. Now at the culmination of an era, Europe, in order to participate in it, felt obliged to set aside the political mechanisms through which it had conducted its affairs for three and a half centuries. Impelled also by the desire to cushion the emergent unification of Germany, the new European Union established a common currency in 2002 and a formal political structure in 2004. It proclaimed a Europe united, whole, and free, adjusting its differences by peaceful mechanisms.

- A. Europe has consistently changed in keeping with the changing world order and that has culminated in a united Europe.
- B. The establishment of a formal political structure in Europe was hastened by the unification of Germany and the emergence of a multi polar world.
- C. Europe has chosen to lower political and economic heterogeneity, in order to adapt itself to an emerging multi-polar world.
- D. Europe has consistently changed its internal structure to successfully adapt to the changing world order.

###COMMON###72###72###

Direction:. Five jumbled up sentences, related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd one out and key in the number of the sentence as your answer:

###DONE###

- 72. 1) Talk was the most common way for enslaved men and women to subvert the rules of their bondage, to gain more agency than they were supposed to have.
- 2) Even in conditions of extreme violence and unfreedom, their words remain

edubiquitous, ephemeral, irrepressible, and potentially transgressive.

- 3) Slaves came from societies in which oaths, orations, and invocations carried great potency, both between people and as a connection to the all-powerful spirit world.

- 4) Freedom of speech and the power to silence may have been preeminent markers of white liberty in Colonies, but at the same time, slavery depended on dialogue: slaves could never be completely muted.

- 5) Slave-owners obsessed over slave talk, though they could never control it, yet feared its power to bind and inspire—for, as everyone knew, oaths, whispers, and secret conversations bred conspiracy and revolt.

###COMMON###73###73###

Direction: The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer:

###DONE###

- 73. 1) Man has used poisons for assassination purposes ever since the dawn of civilization, against individual enemies but also occasionally against armies.

- 2) These dangers were soon recognized, and resulted in two inter nation aldeclarations—in 1874 in Brussels and in 1899 in The Hague—that prohibited the use of poisoned weapons.

- 3) The foundation of microbiology by Louis Pasteur and Robert Koch offered new prospects for those interested in biological weapons because it allowed agents to be chosen and designed on a rational basis.

4) Though treaties were all made in good faith, they contained no means of control, and so failed to prevent interested parties from developing and using biological weapons.

###COMMON###74###74###

Direction: Five jumbled up sentences, related to a topic, are given below. Four of them can be put together to form a coherent paragraph. Identify the odd one out and key in the number of the sentence as your answer:

###DONE###

74. 1) For feminists, the question of how we read is inextricably linked with the question of what we read.

2) Elaine Showalter's critique of the literary curriculum is exemplary of this work.

3) Androcentric literature structures the reading experience differently depending on the gender of the reader.

4) The documentation of this realization was one of the earliest tasks undertaken by feminist critics.

5) More specifically, the feminist inquiry into the activity of reading begins with the realization that the literary canon is androcentric, and that this has a profoundly damaging effect on women readers.

###COMMON###75###75###

Direction: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

###DONE###

75. For nearly a century most psychologists have embraced one view of intelligence. Individuals are born with more or less intelligence potential (I.Q.); this potential is heavily influenced by heredity and difficult to alter; experts in measurement

can determine a person's intelligence early in life, currently from paper-and-pencil measures, perhaps eventually from examining the brain in action or even scrutinizing his/her genome. Recently, criticism of this conventional wisdom has mounted. Biologists ask if speaking of a single entity called "intelligence" is coherent and question the validity of measures used to estimate heritability of a trait in humans, who, unlike plants or animals, are not conceived and bred under controlled conditions.

A. Biologists have started questioning psychologists' view of 'intelligence' as a measurable immutable characteristic of an individual.

B. Biologists have questioned the view that 'intelligence' is a single entity and the ways in which what is inherited.

C. Biologists have questioned the long-standing view that 'intelligence' is a single entity and the attempts to estimate its heritability.

D. Biologists have criticised that conventional wisdom that individuals are born with more or less intelligence potential.

###COMMON###76###76###

Direction: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

###DONE###

76. For years, movies and television series like Crime Scene Investigation (CSI) paint an unrealistic picture of the "science of voices." In the 1994 movie Clear and Present Danger an expert listens to a brief recorded utterance and declares that the speaker is "Cuban, aged 35 to 45, educated in the [...] eastern United States." The

recording is then fed to a supercomputer that matches the voice to that of a suspect, concluding that the probability of correct identification is 90%. This sequence sums up a good number of misimpressions about forensic phonetics, which have led to errors in real-life justice. Indeed, that movie scene exemplifies the so-called “CSI effect”—the phenomenon in which judges hold unrealistic expectations of the capabilities of forensic science.

A. Movies and televisions have led to the belief that the use of forensic phonetics in legal investigations is robust and fool proof.

B. Voice recognition as used in many movies to identify criminals has been used to identify criminals in real life also.

C. Although voice recognition is often presented as evidence in legal cases, its scientific basis can be shaky.

D. Voice recognition has started to feature prominently in crime-scene intelligence investigations because of movies and television series

###ANSWERS###

1. Ans. A.

From statement 5, we know that Institutes A, B, C and D have one 3, 7, 3 and 4 year contract respectively and the remaining four contracts are one-year contracts.

Since Vendor Z had contract in every year (statement 1), he must have 2 multi-year contracts which must include 7 year contract with Institute B. Also Vendor X had one or more contracts from 2010 to 2015 (Statement 2), he must have 2 multi-year contracts.

Both X and Z must have a contract in 2010, so two of the four multi-year contracts must start in 2010. It is given that D did not have a contract in 2010 (statement 7) and C did not have a contract in 2011 (statement 6), so both Institutes D and C cannot start a multi-year contract in 2010. Hence the only possibility is that, Institute B had a 7 year contract with Vendor Z and Institute A has a 3 year contract with Vendor X in 2010.

Since vendors X and Z have 2 multi-year contracts each, we can conclude that vendors W and Y must have only single-year contracts.

It is given that Vendor Y had contracts in 2010 and 2019 (statement 3). So we can conclude that Y had single-year contracts in 2010 and 2019 and in the remaining years, Y did not have a contract. Similarly, it is given that W has contracts only in year 2012 (statement 3), he must have 2 single-year contracts in 2012 and no contract in remaining years.

Using the above data, we can create the following table. The shaded cells in the table means the Vendor did not have a contract in that particular year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	A							
Y										
Z	B	B	B	B	B	B	B			

The second contract of Z can be a 3 year contract with C in 2017 or a 4 year contract with D in 2016. So he had only one contract in 2012. It is given that there were 5 contracts (statement 4) of which W had 2 contracts, Y had 0 contracts and Z had 1 contract. So X must have 2 contracts 2012. Hence he must have a 4 year contract with D from 2012 to 2015 and Z had a 3 year contract with C from 2017 to 2019.

Substituting this data in above table, we get

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	AD	D	D	D				
Y										
Z	B	B	B	B	B	B	B	C	C	C

Both B and D had exactly one contract in 2012 (statement 7), W must have a single-year contract each with A and C in 2012. D did not have a contract in 2010 (statement 7), so Y had a contract with B in 2010 and a contract with D in 2019.

Substituting above values, we can complete the table as given below.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			AC							
X	A	A	AD	D	D	D				
Y	B									D
Z	B	B	B	B	B	B	B	C	C	C

Using above table, we can say that among the given options, only in 2015 there were two contracts.

2. Ans. D.

From statement 5, we know that Institutes A, B, C and D have one 3, 7, 3 and 4 year contract respectively and the remaining four contracts are one-year contracts.

Since Vendor Z had contract in every year (statement 1), he must have 2 multi-year contracts which must include 7 year contract with Institute B. Also Vendor X had one or more contracts from 2010 to 2015 (Statement 2), he must have 2 multi-year contracts.

Both X and Z must have a contract in 2010, so two of the four multi-year contracts

must start in 2010. It is given that D did not have a contract in 2010 (statement 7) and C did not have a contract in 2011 (statement 6), so both Institutes D and C cannot start a multi-year contract in 2010. Hence the only possibility is that, Institute B had a 7 year contract with Vendor Z and Institute A has a 3 year contract with Vendor X in 2010.

Since vendors X and Z have 2 multi-year contracts each, we can conclude that vendors W and Y must have only single-year contracts.

It is given that Vendor Y had contracts in 2010 and 2019 (statement 3). So we can conclude that Y had single-year contracts in 2010 and 2019 and in the remaining years, Y did not have a contract.

Similarly, it is given that W has contracts only in year 2012 (statement 3), he must have 2 single-year contracts in 2012 and no contract in remaining years.

Using the above data, we can create the following table. The shaded cells in the table means the Vendor did not have a contract in that particular year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	A							
Y										
Z	B	B	B	B	B	B	B			

The second contract of Z can be a 3 year contract with C in 2017 or a 4 year contract with D in 2016. So he had only one contract in 2012. It is given that there were 5 contracts (statement 4) of which W had 2 contracts, Y had 0 contracts and Z had 1 contract. So X must have 2 contracts 2012. Hence he must had a 4 year contract with D from 2012 to 2015 and Z had a 3 year contract with C from 2017 to 2019.

Substituting this data in above table, we get

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	AD	D	D	D				
Y										
Z	B	B	B	B	B	B		C	C	C

Both B and D had exactly one contract in 2012 (statement 7), W must have a single-year contract each with A and C in 2012. D did not have a contract in 2010 (statement 7), so Y had a contract with B in 2010 and a contract with D in 2019.

Substituting above values, we can complete the table as given below.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			AC							
X	A	A	AD	D	D	D				
Y	B									D
Z	B	B	B	B	B	B	B	C	C	C

From the table, we can say that only statement D is true.

3. Ans. D.

From statement 5, we know that Institutes A, B, C and D have one 3, 7, 3 and 4 year contract respectively and the remaining four contracts are one-year contracts.

Since Vendor Z had contract in every year (statement 1), he must have 2 multi-year contracts which must include 7 year contract with Institute B. Also Vendor X had one or more contracts from 2010 to 2015 (Statement 2), he must have 2 multi-year contracts.

Both X and Z must have a contract in 2010, so two of the four multi-year contracts must start in 2010. It is given that D did not have a contract in 2010 (statement 7) and C did not have a contract in 2011 (statement 6), so both Institutes D and C cannot start a multi-year contract in 2010. Hence the only possibility is that, Institute B had a 7 year contract with Vendor Z and Institute A has a 3 year contract with Vendor X in 2010.

Since vendors X and Z have 2 multi-year contracts each, we can conclude that vendors W and Y must have only single-year contracts.

It is given that Vendor Y had contracts in 2010 and 2019 (statement 3). So we can conclude that Y had single-year contracts

in 2010 and 2019 and in the remaining years, Y did not have a contract.

Similarly, it is given that W has contracts only in year 2012 (statement 3), he must have 2 single-year contracts in 2012 and no contract in remaining years.

Using the above data, we can create the following table. The shaded cells in the table means the Vendor did not have a contract in that particular year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	A							
Y										
Z	B	B	B	B	B	B	B			

The second contract of Z can be a 3 year contract with C in 2017 or a 4 year contract with D in 2016. So he had only one contract in 2012. It is given that there were 5 contracts (statement 4) of which W had 2 contracts, Y had 0 contracts and Z had 1 contract. So X must have 2 contracts 2012. Hence he must had a 4 year contract with D from 2012 to 2015 and Z had a 3 year contract with C from 2017 to 2019.

Substituting this data in above table, we get

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	AD	D	D	D				
Y										
Z	B	B	B	B	B	B	B	C	C	C

Both B and D had exactly one contract in 2012 (statement 7), W must have a single-year contract each with A and C in 2012. D did not have a contract in 2010 (statement 7), so Y had a contract with B in 2010 and a contract with D in 2019.

Substituting above values, we can complete the table as given below.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			AC							
X	A	A	AD	D	D	D				
Y	B									D
Z	B	B	B	B	B	B	B	C	C	C

There were only one contracts in years 2016, 2017 and 2018 .

4. Ans. B.

From statement 5, we know that Institutes A, B, C and D have one 3, 7, 3 and 4 year

contract respectively and the remaining four contracts are one-year contracts.

Since Vendor Z had contract in every year (statement 1), he must have 2 multi-year contracts which must include 7 year contract with Institute B. Also Vendor X had one or more contracts from 2010 to 2015 (Statement 2), he must have 2 multi-year contracts.

Both X and Z must have a contract in 2010, so two of the four multi-year contracts must start in 2010. It is given that D did not have a contract in 2010 (statement 7) and C did not have a contract in 2011 (statement 6), so both Institutes D and C cannot start a multi-year contract in 2010. Hence the only possibility is that, Institute B had a 7 year contract with Vendor Z and Institute A has a 3 year contract with Vendor X in 2010.

Since vendors X and Z have 2 multi-year contracts each, we can conclude that vendors W and Y must have only single-year contracts.

It is given that Vendor Y had contracts in 2010 and 2019 (statement 3). So we can conclude that Y had single-year contracts in 2010 and 2019 and in the remaining years, Y did not have a contract.

Similarly, it is given that W has contracts only in year 2012 (statement 3), he must have 2 single-year contracts in 2012 and no contract in remaining years.

Using the above data, we can create the following table. The shaded cells in the table means the Vendor did not have a contract in that particular year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	A							
Y										
Z	B	B	B	B	B	B	B			

The second contract of Z can be a 3 year contract with C in 2017 or a 4 year contract with D in 2016. So he had only one contract in 2012. It is given that there were 5

contracts (statement 4) of which W had 2 contracts, Y had 0 contracts and Z had 1 contract. So X must have 2 contracts 2012. Hence he must have had a 4 year contract with D from 2012 to 2015 and Z had a 3 year contract with C from 2017 to 2019.

Substituting this data in above table, we get

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	AD	D	D	D				
Y										
Z	B	B	B	B	B	B	B	C	C	C

Both B and D had exactly one contract in 2012 (statement 7), W must have a single-year contract each with A and C in 2012. D did not have a contract in 2010 (statement 7), so Y had a contract with B in 2010 and a contract with D in 2019.

Substituting above values, we can complete the table as given below.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			AC							
X	A	A	AD	D	D	D				
Y	B									D
Z	B	B	B	B	B	B	B	C	C	C

So there were exactly three contracts in the year 2010.

5. Ans. C.

From statement 5, we know that Institutes A, B, C and D have one 3, 7, 3 and 4 year contract respectively and the remaining four contracts are one-year contracts.

Since Vendor Z had contract in every year (statement 1), he must have 2 multi-year contracts which must include 7 year contract with Institute B. Also Vendor X had one or more contracts from 2010 to 2015 (Statement 2), he must have 2 multi-year contracts.

Both X and Z must have a contract in 2010, so two of the four multi-year contracts must start in 2010. It is given that D did not have a contract in 2010 (statement 7) and C did not have a contract in 2011 (statement 6), so both Institutes D and C cannot start a multi-year contract in 2010. Hence the only possibility is that, Institute

B had a 7 year contract with Vendor Z and Institute A has a 3 year contract with Vendor X in 2010.

Since vendors X and Z have 2 multi-year contracts each, we can conclude that vendors W and Y must have only single-year contracts.

It is given that Vendor Y had contracts in 2010 and 2019 (statement 3). So we can conclude that Y had single-year contracts in 2010 and 2019 and in the remaining years, Y did not have a contract.

Similarly, it is give that W has contracts only in year 2012 (statement 3), he must have 2 single-year contracts in 2012 and no contract in remaining years.

Using the above data, we can create the following table. The shaded cells in the table means the Vendor did not have a contract in that particular year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	A							
Y										
Z	B	B	B	B	B	B	B	C	C	C

The second contract of Z can be a 3 year contract with C in 2017 or a 4 year contract with D in 2016. So he had only one contract in 2012. It is given that there were 5 contracts (statement 4) of which W had 2 contracts, Y had 0 contracts and Z had 1 contract. So X must have 2 contracts 2012. Hence he must have had a 4 year contract with D from 2012 to 2015 and Z had a 3 year contract with C from 2017 to 2019.

Substituting this data in above table, we get

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	AD	D	D	D				
Y										
Z	B	B	B	B	B	B	B	C	C	C

Both B and D had exactly one contract in 2012 (statement 7), W must have a single-year contract each with A and C in 2012. D did not have a contract in 2010 (statement 7), so Y had a contract with B in 2010 and a contract with D in 2019.

Substituting above values, we can complete the table as given below.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			AC							
X	A	A	AD	D	D	D				
Y	B									D
Z	B	B	B	B	B	B	B	C	C	C

From the table, we can say that Institutes A had multiples contracts in 2012 and Institute B had multiple contracts in the 2010.

6. Ans. C.

From statement 5, we know that Institutes A, B, C and D have one 3, 7, 3 and 4 year contract respectively and the remaining four contracts are one-year contracts.

Since Vendor Z had contract in every year (statement 1), he must have 2 multi-year contracts which must include 7 year contract with Institute B. Also Vendor X had one or more contracts from 2010 to 2015 (Statement 2), he must have 2 multi-year contracts.

Both X and Z must have a contract in 2010, so two of the four multi-year contracts must start in 2010. It is given that D did not have a contract in 2010 (statement 7) and C did not have a contract in 2011 (statement 6), so both Institutes D and C cannot start a multi-year contract in 2010. Hence the only possibility is that, Institute B had a 7 year contract with Vendor Z and Institute A has a 3 year contract with Vendor X in 2010.

Since vendors X and Z have 2 multi-year contracts each, we can conclude that vendors W and Y must have only single-year contracts.

It is given that Vendor Y had contracts in 2010 and 2019 (statement 3). So we can conclude that Y had single-year contracts in 2010 and 2019 and in the remaining years, Y did not have a contract.

Similarly, it is give that W has contracts only in year 2012 (statement 3), he must

have 2 single-year contracts in 2012 and no contract in remaining years.

Using the above data, we can create the following table. The shaded cells in the table means the Vendor did not have a contract in that particular year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	A							
Y										
Z	B	B	B	B	B	B	B			

The second contract of Z can be a 3 year contract with C in 2017 or a 4 year contract with D in 2016. So he had only one contract in 2012. It is given that there were 5 contracts (statement 4) of which W had 2 contracts, Y had 0 contracts and Z had 1 contract. So X must have 2 contracts 2012. Hence he must had a 4 year contract with D from 2012 to 2015 and Z had a 3 year contract with C from 2017 to 2019.

Substituting this data in above table, we get

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			2 contracts							
X	A	A	AD	D	D	D				
Y										
Z	B	B	B	B	B	B	B	C	C	C

Both B and D had exactly one contract in 2012 (statement 7), W must have a single-year contract each with A and C in 2012. D did not have a contract in 2010 (statement 7), so Y had a contract with B in 2010 and a contract with D in 2019.

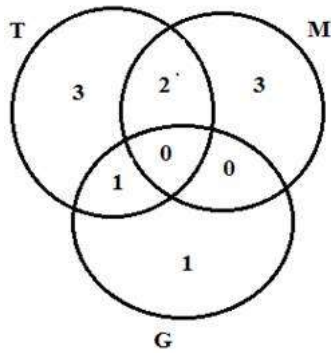
Substituting above values, we can complete the table as given below.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
W			AC							
X	A	A	AD	D	D	D				
Y	B									D
Z	B	B	B	B	B	B	B	C	C	C

Using the table, we can say that Institutes A and B and Vendors W and X had multiple contracts in the same year.

7. Ans. A.

Using the information given in the passage, we can create the following Venn diagram.

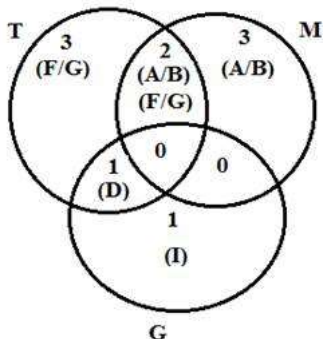


One of A or B is an expert in only Mridangam and the other is an expert in Table and Mridangam but not Ghatam (Statement 1).

The only person who is an expert in Tabla and Ghatam but not Mridangam is D. (Statement 2)

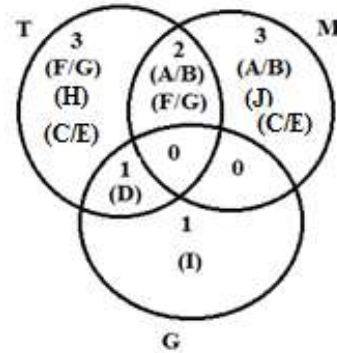
One of F or G is an expert in only Tabla while the other is an expert in Tabla and Mridangam but not Ghatam. (Statement 3)
I is not an expert in Tabla and Mridangam (statement 4 and 5), which means I is an expert in only Ghatam.

Using the above data, we get the following Venn diagram.



Since H is not an expert in Mridangam (statement 5), the only possibility left is that H is an expert in only Tabla. Similarly J is not an expert in Tabla (statement 4), So he must be an expert in only Mridangam. For remaining two persons C and E, one should be an expert in only Tabla while the other should be an expert in only Mridangam.

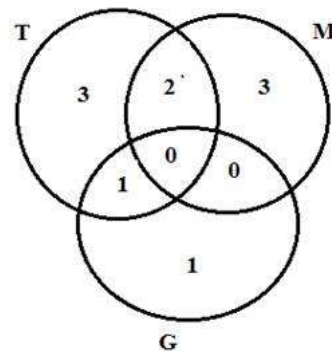
Using this data, we can complete the Venn diagram as given below:



From the above Venn diagram, we can see that H is definitely an expert in Tabla but not in Mridangam or Ghatam.

8. Ans. A.

Using the information given in the passage, we can create the following Venn diagram.

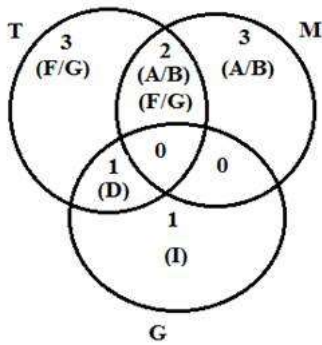


One of A or B is an expert in only Mridangam and the other is an expert in Table and Mridangam but not Ghatam (Statement 1).

The only person who is an expert in Tabla and Ghatam but not Mridangam is D. (Statement 2)

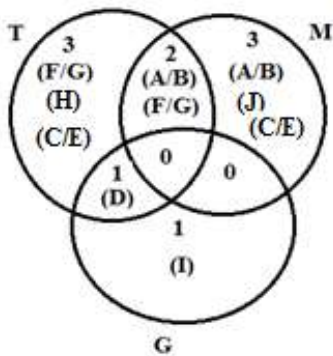
One of F or G is an expert in only Tabla while the other is an expert in Tabla and Mridangam but not Ghatam. (Statement 3)
I is not an expert in Tabla and Mridangam (statement 4 and 5), which means I is an expert in only Ghatam.

Using the above data, we get the following Venn diagram.



Since H is not an expert in Mridangam (statement 5), the only possibility left is that H is an expert in only Tabla. Similarly J is not an expert in Tabla (statement 4), so he must be an expert in only Mridangam. For remaining two persons C and E, one should be an expert in only Tabla while the other should be an expert in only Mridangam.

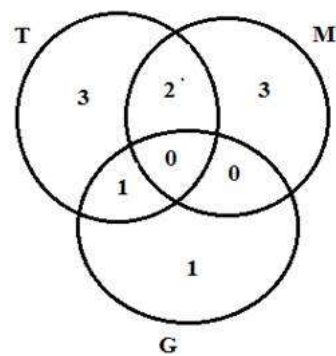
Using this data, we can complete the Venn diagram as given below:



J is definitely an expert in Mridangam but not in Tabla or Ghatam.

9. Ans. A.

Using the information given in the passage, we can create the following Venn diagram.

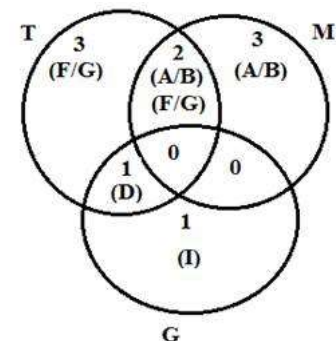


One of A or B is an expert in only Mridangam and the other is an expert in Table and Mridangam but not Ghatam (Statement 1).

The only person who is an expert in Tabla and Ghatam but not Mridangam is D. (Statement 2)

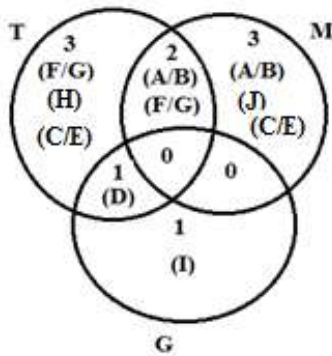
One of F or G is an expert in only Tabla while the other is an expert in Tabla and Mridangam but not Ghatam. (Statement 3)
I is not an expert in Tabla and Mridangam (statement 4 and 5), which means I is an expert in only Ghatam.

Using the above data, we get the following Venn diagram.



Since H is not an expert in Mridangam (statement 5), the only possibility left is that H is an expert in only Tabla. Similarly J is not an expert in Tabla (statement 4), so he must be an expert in only Mridangam. For remaining two persons C and E, one should be an expert in only Tabla while the other should be an expert in only Mridangam.

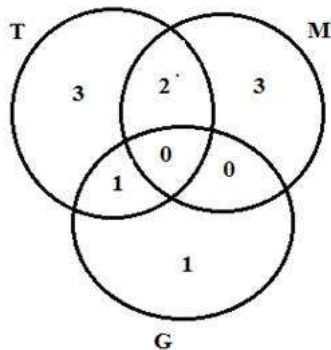
Using this data, we can complete the Venn diagram as given below:



Neither C nor E is an expert in both Tabla and Mridangam but not in Ghatam.

10. Ans. C.

Using the information given in the passage, we can create the following Venn diagram.



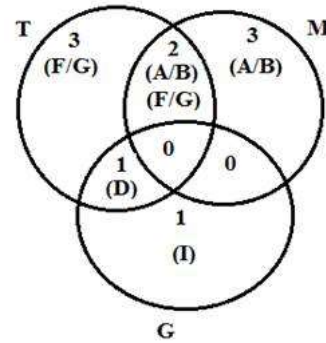
One of A or B is an expert in only Mridangam and the other is an expert in Tabla and Mridangam but not Ghatam (Statement 1).

The only person who is an expert in Tabla and Ghatam but not Mridangam is D. (Statement 2)

One of F or G is an expert in only Tabla while the other is an expert in Tabla and Mridangam but not Ghatam. (Statement 3)

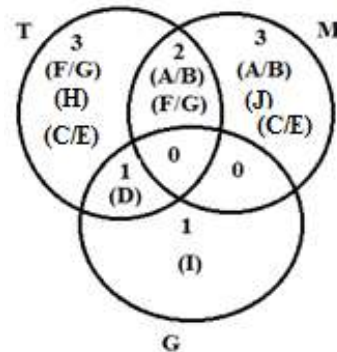
I is not an expert in Tabla and Mridangam (statement 4 and 5), which means I is an expert in only Ghatam.

Using the above data, we get the following Venn diagram.



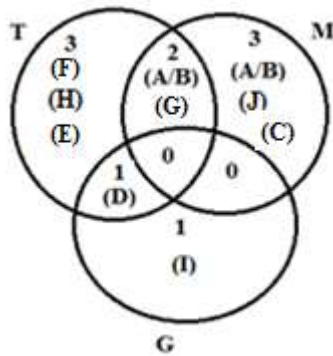
Since H is not an expert in Mridangam (statement 5), the only possibility left is that H is an expert in only Tabla. Similarly J is not an expert in Tabla (statement 4), so he must be an expert in only Mridangam. For remaining two persons C and E, one should be an expert in only Tabla while the other should be an expert in only Mridangam.

Using this data, we can complete the Venn diagram as given below:



Now, it is also given that F is not an expert in Mridangam, then F should be an expert in only Tabla and G should be an expert in both Tabla and Mridangam but not in Tabla.

Using the above data, we can complete the Venn diagram as given below:



So E, F and H are the three musicians who are experts in tabla but not in either mridangam or ghatam.

11. Ans. D.

From the table we can see that Damodaran has got a rating of 3 in P_2 . Since he did not get a bonus, we can say that he got a rating of 1 in one of the parameters.

Now, to maximize his final rating, his ratings in the remaining three parameters should be as high as possible keeping in mind that he cannot get same rating in more than two parameters.

Highest possible ratings for remaining three parameters can be 5, 5 and 4.

Highest possible final rating of Damodaran

$$\frac{1+3+4+5+5}{5} = 3.6$$

12. Ans. D.

From the table we can see that Eman got a rating of 2 in P_5 . Since Eman gets a bonus, we can say that he got a rating of 5 in one of the parameters and he did not get a rating of 1 in any of the parameters.

Now, to minimize his final rating, his ratings in the remaining three parameters should be as low as possible keeping in mind that he cannot get same rating in more than two parameters.

Minimum possible ratings for remaining three parameters can be 2, 3 and 3.

Highest possible final rating

$$\frac{2+2+3+3+5}{5} = 3.0$$

13. Ans. C.

To get the minimum payment of drivers, we need to keep the final rating as low as possible.

Considering statements 1 and 2 and the condition that no driver will get a rating of 1 as all the drivers got a bonus, we can create the below table that shows the minimum possible final ratings and the minimum possible value of monthly payment that the given drivers can get. (We can note that the bonus amount does not depend on order of ratings)

	P1	P2	P3	P4	P5	Final Rating	Bonus	Fixed Payment	Total Payment
Arun	2	2	3	4	5	3.2	$3.2 \times 250 = 800$	1000	1800
Barun	3	2	2	3	5	3	$3 \times 200 = 600$	1200	1800
Chandan	3	2	2	5	5	3.4	$3.4 \times 100 = 340$	1400	1740
Damodaran	3	3	2	2	5	3	$3 \times 150 = 450$	1300	1750
Eman	5	3	3	2	2	3	$3 \times 200 = 600$	1100	1700

Hence the minimum possible value of the monthly payment (in rupees) that a driver gets is rupees 1700.

14. Ans. C.

To get the maximum payment of drivers, we need to keep the final rating as high as possible.

Considering statements 1 and 2 and the condition that no driver will get a rating of 1 as all the drivers got a bonus, we can create the below table that shows the maximum possible value final ratings and the maximum possible value of monthly payment that the given drivers can get. (We can note that the bonus amount does not depend on order of ratings)

	P1	P2	P3	P4	P5	Final Rating	Bonus	Fixed Payment	Total Payment
Arun	5	3	3	4	4	3.8	$3.8 \times 250 = 950$	1000	1950
Barun	3	3	4	4	5	3.8	$3.8 \times 200 = 760$	1200	1960
Chandan	4	4	2	5	5	4	$4 \times 100 = 400$	1400	1800
Damodaran	4	3	4	5	5	4.2	$4.2 \times 150 = 630$	1300	1930
Eman	5	5	4	4	2	4	$4 \times 200 = 800$	1100	1900

Hence the maximum possible value of the monthly payment (in rupees) that a driver gets is rupees 1960.

15. Ans. C.

The student who missed the Mathematics examination did not miss any other examination (statement II). From the table, we can notice that only for Carl, the score in mathematics is the average of the best three among the remaining four scores. So we can conclude that Carl missed Mathematics exam.

16. Ans. C.

The student who missed the Mathematics examination did not miss any other examination (statement 2). From the table, we can notice that only for Carl, the score in mathematics is the average of the best three among the remaining four scores. So we can conclude that Carl missed Mathematics exam.

One student missed only Hindi and one student missed both Hindi and Science examinations (statement 3). Only Deep or Alva has equal scores in Hindi and science and also only for these two, the score in Hindi is the average of the best three among the remaining four scores. So both Deep and Alva missed Hindi exam and one of them also missed science exam.

It is given that 4 students appeared in each of English, Hindi, Science, and Social Science examinations (statement 1). So we can say that exactly two students missed each of four subjects English, Hindi, Science, and Social Science.

For English Exam:

We know that Alva, Carl and Deep have taken English exam. Now only one of the remaining three students has taken English exam. Since Bithi's score in English cannot be the average of best two or best three from remaining scores, he did not miss English exam.

Therefore Esha and Foni Missed English exam.

17. Ans. B.

The student who missed the Mathematics examination did not miss any other examination (statement 2). From the table, we can notice that only for Carl, the score in mathematics is the average of the best three among the remaining four scores. So we can conclude that Carl missed Mathematics exam.

One student missed only Hindi and one student missed both Hindi and Science examinations (statement 3). Only Deep or Alva has equal scores in Hindi and science and also only for these two, the score in Hindi is the average of the best three among the remaining four scores. So both Deep and Alva missed Hindi exam and one of them also missed science exam.

It is given that 4 students appeared in each of English, Hindi, Science, and Social Science examinations (statement 1). So we can say that exactly two students missed each of four subjects English, Hindi, Science, and Social Science.

For English Exam:

We know that Alva, Carl and Deep have taken English exam. Now only one of the remaining three students has taken English exam. Since Bithi's score in English cannot be the average of best two or best three from remaining scores, he did not miss English exam. Therefore Esha and Foni missed English exam.

For Hindi Exam:

We already concluded that Alva and Deep missed Hindi exam.

For Mathematics Exam:

Only Carl missed Mathematics exam.

For Science Exam:

One of Alva or Deep missed Science exam. From the remaining persons, only Bithi's score can be the average of best two or best three scores. Hence the second person who missed Science exam is Bithi.

For Social Science exam:

Only Bithi and Foni are the two persons who can miss Social Science exam and satisfy the given conditions. So Bithi and Foni missed Social Science exam.

Now, we can make the following table about the students who missed a particular subject.

	English	Hindi	Mathematics	Science	Social Science
Name of Students who missed the exam	Esha and Foni	Alva and Deep	Carl	Bithi and Alva/Deep	Bithi and Foni

So Alva and Deep missed the Hindi exam.

18. Ans. C.

The student who missed the Mathematics examination did not miss any other examination (statement 2). From the table, we can notice that only for Carl, the score in mathematics is the average of the best three among the remaining four scores. So we can conclude that Carl missed Mathematics exam.

One student missed only Hindi and one student missed both Hindi and Science examinations (statement 3). Only Deep or Alva has equal scores in Hindi and science and also only for these two, the score in Hindi is the average of the best three among the remaining four scores. So both Deep and Alva missed Hindi exam and one of them also missed science exam.

It is given that 4 students appeared in each of English, Hindi, Science, and Social Science examinations (statement 1). So we can say that exactly two students missed each of four subjects English, Hindi, Science, and Social Science.

For English Exam:

We know that Alva, Carl and Deep have taken English exam. Now only one of the remaining three students has taken English exam. Since Bithi's score in English cannot be the average of best two or best three from remaining scores, he did not miss English exam. Therefore Esha and Foni missed English exam.

For Hindi Exam:

We already concluded that Alva and Deep missed Hindi exam.

For Mathematics Exam:

Only Carl missed Mathematics exam.

For Science Exam:

One of Alva or Deep missed Science exam.

From the remaining persons, only Bithi's score can be the average of best two or best three scores. Hence the second person who missed Science exam is Bithi.

For Social Science exam:

Only Bithi and Foni are the two persons who can miss Social Science exam and satisfy the given conditions. So Bithi and Foni missed Social Science exam.

Now, we can make the following table about the students who missed a particular subject.

	English	Hindi	Mathematics	Science	Social Science
Name of Students who missed the exam	Esha and Foni	Alva and Deep	Carl	Bithi and Alva/Deep	Bithi and Foni

Bithi and one of Alva or Deep missed the Science examination.

19. Ans.

The student who missed the Mathematics examination did not miss any other examination (statement 2). From the table, we can notice that only for Carl, the score in mathematics is the average of the best three among the remaining four scores. So we can conclude that Carl missed Mathematics exam.

One student missed only Hindi and one student missed both Hindi and Science examinations (statement 3). Only Deep or Alva has equal scores in Hindi and science and also only for these two, the score in Hindi is the average of the best three among the remaining four scores. So both Deep and Alva missed Hindi exam and one of them also missed science exam.

It is given that 4 students appeared in each of English, Hindi, Science, and Social

Science examinations (statement 1). So we can say that exactly two students missed each of four subjects English, Hindi, Science, and Social Science.

For English Exam:

We know that Alva, Carl and Deep have taken English exam. Now only one of the remaining three students has taken English exam. Since Bithi's score in English cannot be the average of best two or best three from remaining scores, he did not miss English exam. Therefore Esha and Foni missed English exam.

For Hindi Exam:

We already concluded that Alva and Deep missed Hindi exam.

For Mathematics Exam:

Only Carl missed Mathematics exam.

For Science Exam:

One of Alva or Deep missed Science exam. From the remaining persons, only Bithi's score can be the average of best two or best three scores. Hence the second person who missed Science exam is Bithi.

For Social Science exam:

Only Bithi and Foni are the two persons who can miss Social Science exam and satisfy the given conditions. So Bithi and Foni missed Social Science exam.

Now, we can make the following table about the students who missed a particular subject.

	English	Hindi	Mathematics	Science	Social Science
Name of Students who missed the exam	Esha and Foni	Alva and Deep	Carl	Bithi and Alva/Deep	Bithi and Foni

From the above table we can notice that the students who missed only one exam are Carl, Esha and one of Alva or Deep. So 3 students missed only one exam.

20. Ans.

The student who missed the Mathematics examination did not miss any other examination (statement 2). From the table, we can notice that only for Carl, the score

in mathematics is the average of the best three among the remaining four scores. So we can conclude that Carl missed Mathematics exam.

One student missed only Hindi and one student missed both Hindi and Science examinations (statement 3). Only Deep or Alva has equal scores in Hindi and science and also only for these two, the score in Hindi is the average of the best three among the remaining four scores. So both Deep and Alva missed Hindi exam and one of them also missed science exam.

It is given that 4 students appeared in each of English, Hindi, Science, and Social Science examinations (statement 1). So we can say that exactly two students missed each of four subjects English, Hindi, Science, and Social Science.

For English Exam:

We know that Alva, Carl and Deep have taken English exam. Now only one of the remaining three students has taken English exam. Since Bithi's score in English cannot be the average of best two or best three from remaining scores, he did not miss English exam. Therefore Esha and Foni missed English exam.

For Hindi Exam:

We already concluded that Alva and Deep missed Hindi exam.

For Mathematics Exam:

Only Carl missed Mathematics exam.

For Science Exam:

One of Alva or Deep missed Science exam. From the remaining persons, only Bithi's score can be the average of best two or best three scores. Hence the second person who missed Science exam is Bithi.

For Social Science exam:

Only Bithi and Foni are the two persons who can miss Social Science exam and satisfy the given conditions. So Bithi and Foni missed Social Science exam.

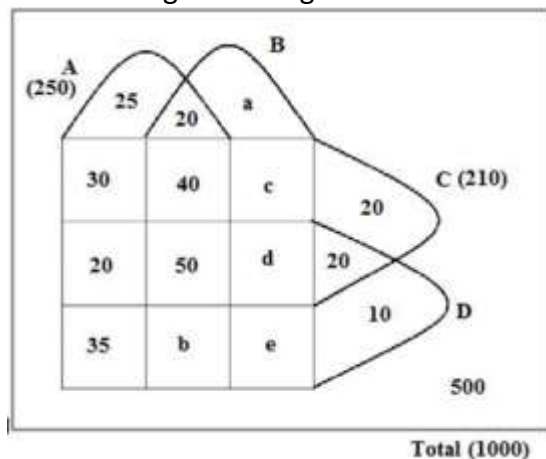
Now, we can make the following table about the students who missed a particular subject.

	English	Hindi	Mathematics	Science	Social Science
Name of Students who missed the exam	Esha and Foni	Alva and Deep	Carl	Biti and Alva/Deep	Biti and Foni

For all students except Alva and Deep, we are definite about the examinations they missed. Hence there are 4 students; we are definite about the examinations they missed.

21. Ans.

Using the given statements, we can create the following Venn diagram.



Number of people treated with exactly one type of medicine = 75

$$\Rightarrow 25 + a + 20 + 10 = 75$$

$$\Rightarrow a = 20.$$

Number of people treated with medicine A = 250

$$\Rightarrow 25 + 20 + 30 + 40 + 20 + 50 + 35 + b = 250$$

$$\Rightarrow b = 30$$

Number of people treated with exactly three types of medicine = 100

$$\Rightarrow 40 + 20 + b + d = 100$$

$$\Rightarrow 40 + 20 + 30 + d = 100$$

$$\Rightarrow d = 10$$

Number of people treated with medicine C = 210

$$\Rightarrow 30 + 20 + 50 + 40 + c + d + 20 + 20 = 210$$

$$\Rightarrow 30 + 20 + 50 + 40 + c + 10 + 20 + 20 = 210$$

$$\Rightarrow c = 20$$

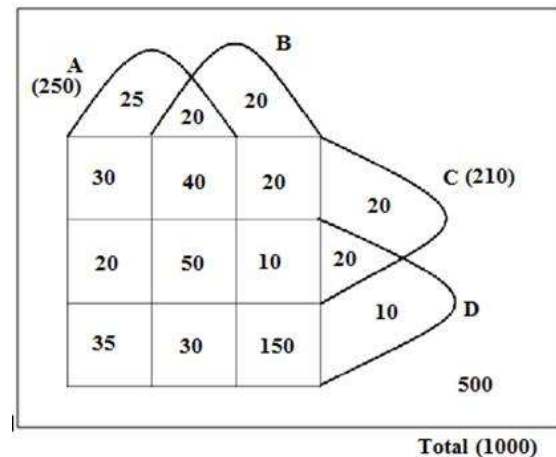
Total number of people = 1000

$$\Rightarrow 25 + 20 + a + 30 + 40 + c + 20 + 20 + 50 + d + 20 + 35 + b + e + 10 + 500 = 1000$$

$$\Rightarrow 25 + 20 + 20 + 30 + 40 + 20 + 20 + 20 + 50 + 10 + 20 + 35 + 30 + e + 10 + 500 = 1000$$

$$\Rightarrow e = 150$$

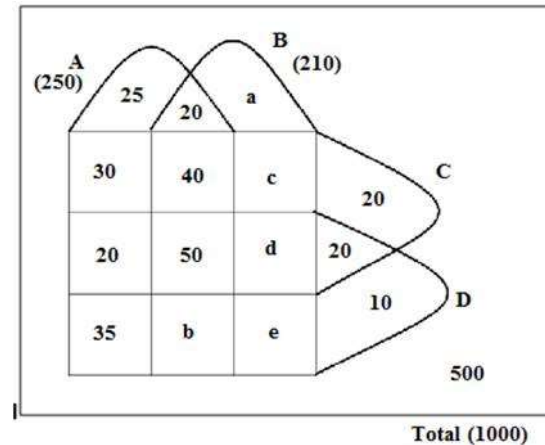
Substituting above values, we can complete the Venn diagram as given below.



Number of patients were treated with medicine type B = 20 + 20 + 40 + 20 + 50 + 10 + 30 + 150 = 340

22. Ans.

Using the given statements, we can create the following Venn diagram.



Number of people treated with exactly one type of medicine = 75

$$\Rightarrow 25 + a + 20 + 10 = 75$$

$$\Rightarrow a = 20.$$

Number of people treated with medicine A = 250

$$\Rightarrow 25 + 20 + 30 + 40 + 20 + 50 + 35 + b = 250$$

$$\Rightarrow b = 30$$

Number of people treated with exactly three types of medicine = 100

$$\Rightarrow 40 + 20 + b + d = 100$$

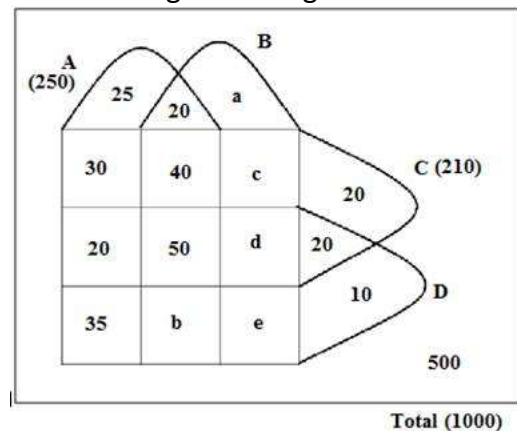
$$\Rightarrow 40 + 20 + 30 + d = 100$$

$$\Rightarrow d = 10$$

The number of patients who were treated with medicine types B, C and D, but not type A = $d = 10$

23. Ans.

Using the given statements, we can create the following Venn diagram.



Number of people treated with exactly one type of medicine = 75

$$\Rightarrow 25 + a + 20 + 10 = 75$$

$$\Rightarrow a = 20.$$

Number of people treated with medicine A = 250

$$\Rightarrow 25 + 20 + 30 + 40 + 20 + 50 + 35 + b = 250$$

$$\Rightarrow b = 30$$

Number of people treated with exactly three types of medicine = 100

$$\Rightarrow 40 + 20 + b + d = 100$$

$$\Rightarrow 40 + 20 + 30 + d = 100$$

$$\Rightarrow d = 10$$

Number of people treated with medicine C = 210

$$\Rightarrow 30 + 20 + 50 + 40 + c + d + 20 + 20 = 210$$

$$\Rightarrow 30 + 20 + 50 + 40 + c + 10 + 20 + 20 = 210$$

$$\Rightarrow c = 20$$

Total number of people = 1000

$$\Rightarrow 25 + 20 + a + 30 + 40 + c + 20 + 20 + 50 +$$

$$d + 20 + 35 + b + e + 10 + 500 = 1000$$

$$\Rightarrow 25 + 20 + 20 + 30 + 40 + 20 + 20 + 20 +$$

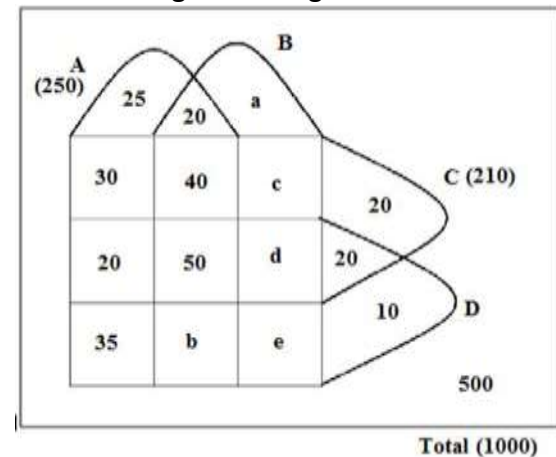
$$50 + 10 + 20 + 35 + 30 + e + 10 + 500 = 1000$$

$$\Rightarrow e = 150$$

Number of patients were treated with medicine type B and D only = $e = 150$

24. Ans.

Using the given statements, we can create the following Venn diagram.



Number of people treated with exactly one type of medicine = 75

$$\Rightarrow 25 + a + 20 + 10 = 75$$

$$\Rightarrow a = 20.$$

Number of people treated with medicine A = 250

$$\Rightarrow 25 + 20 + 30 + 40 + 20 + 50 + 35 + b = 250$$

$$\Rightarrow b = 30$$

Number of people treated with exactly three types of medicine = 100

$$\Rightarrow 40 + 20 + b + d = 100$$

$$\Rightarrow 40 + 20 + 30 + d = 100$$

$$\Rightarrow d = 10$$

Number of people treated with medicine C = 210

$$\Rightarrow 30 + 20 + 50 + 40 + c + d + 20 + 20 = 210$$

$$\Rightarrow 30 + 20 + 50 + 40 + c + 10 + 20 + 20 = 210$$

$$\Rightarrow c = 20$$

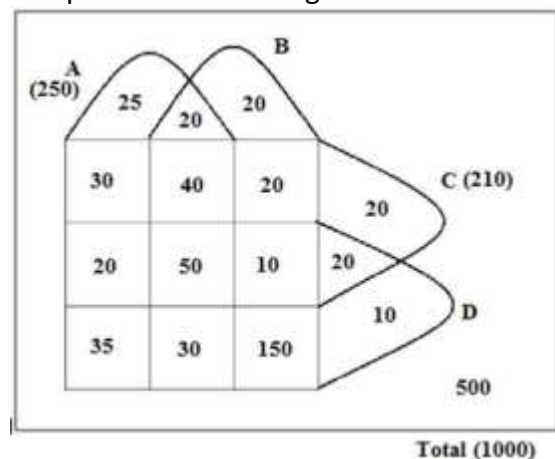
Total number of people = 1000

$$\Rightarrow 25 + 20 + a + 30 + 40 + c + 20 + 20 + 50 + d + 20 + 35 + b + e + 10 + 500 = 1000$$

$$\Rightarrow 25 + 20 + 20 + 30 + 40 + 20 + 20 + 20 + 50 + 10 + 20 + 35 + 30 + e + 10 + 500 = 1000$$

$$\Rightarrow e = 150$$

Substituting above values, we can complete the Venn diagram.



Number of patients were treated with medicine type D = $20 + 35 + 50 + 30 + 10 + 150 + 20 + 10 = 325$

25. Ans.

$$\log_4 5 = (\log_4 y)(\log_6 \sqrt{5})$$

$$\Rightarrow \frac{\log 5}{\log 4} = \frac{\log y}{\log 4} \times \frac{\log \sqrt{5}}{\log 6}$$

$$\Rightarrow \frac{\log 5 \times \log 6}{\frac{1}{2} \log 5} = \log y$$

$$\Rightarrow 2 \log 6 = \log y$$

$$\Rightarrow \log 6^2 = \log y$$

$$\Rightarrow y = 36$$

26. Ans. B.

Ratio of volumes of A, B, C in the Alloy = 3 : 4 : 7

Ratio of weights of the same volumes of A, B, C = 5 : 2 : 6

Ratio of weights of A, B, C in the Alloy = $3 \times 5 : 4 \times 2 : 7 \times 6 = 15 : 8 : 42$

Total weight of Alloy = 130 kg

$$\text{Weight of metal C} = \frac{42}{15+8+42} \times 130 = 84 \text{ kg}$$

27. Ans. D.

Let the distance between home and office be d km

According to question, the difference of time taken at the speed of 8km/hr and 15 km/hr is 35 mins. So

$$\frac{d}{8} - \frac{d}{15} = \frac{35}{60}$$

$$\Rightarrow \frac{7d}{120} = \frac{35}{60}$$

$$\Rightarrow d = 10 \text{ km}$$

Now he should reach the office in 50 mins (9:10 am – 10:00 am).

$$d = 10 \text{ km}$$

$$t = 50 \text{ mins} = \frac{5}{6} \text{ hrs}$$

$$\text{Required speed} = \frac{10}{5/6} = 12 \text{ km/hr}$$

28. Ans. D.

The given equations are

$$A + \frac{B+C}{2} = 5 \Rightarrow 2A + B + C = 10$$

..... (1)

$$B + \frac{A+C}{2} = 7 \Rightarrow A + 2B + C = 14$$

..... (2)

Subtracting equation (1) from equation (2), we get

$$B - A = 4$$

..... (3)

Since A, B and C are positive integers, the minimum possible value of B should be 5 (using equation 3) and maximum possible value of B should be 6 (using equation 2).

Case 1: If B = 5

$$A = 1 \text{ (from equation 3)}$$

$$C = 3 \text{ (from equation 1)}$$

Case 2: If B = 6

$$A = 2 \text{ (from equation 3)}$$

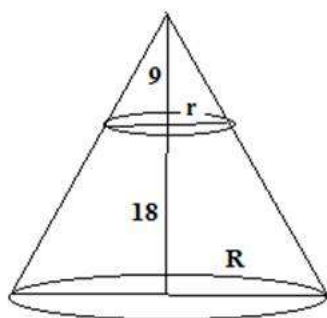
$$C = 0 \text{ (from equation 1)}$$

But C cannot be zero as C is a positive integer.

So the only possible solution is A = 1, B = 5, C = 3

$$\therefore A + B = 6$$

29. Ans. D.



Height of original cone = 27 cm

Height of smaller cone = 27 - 18 = 9 cm

Ratio of height of original cone and smaller cone = 27:9 = 3:1

Using similarity of triangles,

The ratio of the radius of original cone to

that of smaller cone $\frac{R}{r} = \frac{3}{1}$

$$\frac{\frac{1}{3}\pi R^2(27)}{\frac{1}{3}\pi r^2(9)} = \left(\frac{R}{r}\right)^2 \times \frac{3}{1} = \frac{27}{1}$$

Ratio of volumes =

Let the volume of original cone = 27k

And volume of smaller cone = k

Volume of frustum = 26k

26k - k = 225 cc

$\Rightarrow k = 9$

\therefore volume of original cone = 27k = 27 x 9 = 243 cc

30. Ans. B.

Let the length of train be x meters and speed of train be s km/hr.

Relative speed between train and first person = (s - 2) km/hr

Relative speed between train and second person = (s - 4) km/hr

Since the distance (length of train) is same in both the cases

$$\frac{S_1}{S_2} = \frac{T_2}{T_1}$$

$$\Rightarrow \frac{s-2}{s-4} = \frac{100}{90} \Rightarrow s = 22 \text{ km/hr}$$

Let the time taken by train to cross an electric post is t.

Comparing this case with the crossing of train with first person.

$$\Rightarrow \frac{s-2}{s} = \frac{t}{90}$$

$$\Rightarrow \frac{20}{22} = \frac{t}{90} \Rightarrow t \approx 82 \text{ sec}$$

31. Ans.

We can solve this question by reverse calculations i.e. starting with the final number of toffees and calculating the number of toffees in the previous step. Since the man gave half of the remaining toffees and one extra to every child, in the reverse calculation we will take one toffee and then double the number of toffees to get the number of toffees in the previous step.

Number of toffees left in the end = 0

Number of toffees before giving toffees to the 5th Child = (0 + 1) x 2 = 2

Number of toffees before giving toffees to the 4th child = (2 + 1) x 2 = 6

Number of toffees before giving toffees to the 3rd child = (6 + 1) x 2 = 14

Number of toffees before giving toffees to the 2nd child = (14 + 1) x 2 = 30

Number of toffees before giving toffees to the 1st child = (30 + 1) x 2 = 62

So there were 62 toffees initially.

32. Ans. A.

Given

ab = 432, bc = 96

since a, b, c are positive integers and c < 9, we can calculate the possible values of a, b, c

(i) If c = 1, then b = 96, a = 4.5

This case is not possible as 'a' should be integral.

(ii) if c = 2, then b = 48, a = 9.

So a + b + c = 59

(iii) if c = 3, then b = 32, a = 13.5.

This case is not possible as 'a' should be integral.

(iv) if c = 4, then b = 24, a = 18

So $a + b + c = 46$

(v) if $c = 6$, then $b = 16$, $a = 27$

So $a + b + c = 49$

(v) if $c = 8$, then $b = 12$, $a = 36$

So $a + b + c = 56$

Considering all possibilities, the smallest possible value of $a + b + c = 46$.

33. Ans. B.

For smallest possible value of x_0 all $(x_1, x_2, x_3, \dots, x_{12})$ should be equal or closest to each other. Hence eight of the given 12 variables should be equal to 8 and each of the remaining four variables should be equal to 9.

$$x_0 = \max(8, 8, 8, 8, 8, 8, 8, 8, 9, 9, 9, 9) = 9$$

Hence the smallest possible value of $x_0 = 9$.

34. Ans. D.

The numbers satisfying the given conditions are

1100, 1122, 1144, 1166, 1188

2200, 2222, 2244, 2266, 2288

.....

.....

9900, 9922, 9944, 9966, 9988

We can notice that the numbers in each row are in AP. So the middle number of each row will be the mean of that row.

So the mean of the rows are 1144, 2244, 3344, 4444, 5544, 6644, 7744, 8844, 9944.

Now the mean of these numbers is 5544.

Hence the mean of all 4-digit even natural numbers of the form 'aabb' is 5544.

35. Ans. B.

$$2^x + 2^{-x} = 2 - (x - 2)^2$$

$2^x > 0$ for all real values of x .

We know that the sum of a positive number and its reciprocal is always greater than equal to 2.

$$\therefore 2^x + 2^{-x} \geq 2$$

$$\text{Also } 2 - (x - 2)^2 \leq 2$$

Now the only possible solution is when both the LHS and RHS are equal to 2 simultaneously.

But $2^x + 2^{-x} = 2$ when $x = 0$

$$\text{And } 2 - (x - 2)^2 = 2 \text{ when } x = 2$$

So there is no value of x for which LHS = RHS.

Hence the given equation does not have a solution.

36. Ans. D.

$(x^2 - 7x + 11)^{(x^2 - 13x + 42)} = 1$ in the following cases.

Case 1:

$$x^2 - 13x + 42 = 0 \Rightarrow x = 7, 6$$

Case 2:

$$x^2 - 7x + 11 = 1$$

$$\Rightarrow x^2 - 7x + 10 = 0 \Rightarrow x = 2, 5$$

Case 3:

$$x^2 - 7x + 11 = -1 \text{ and } x^2 - 13x + 42 \text{ is even}$$

$$\Rightarrow x^2 - 7x + 12 = 0$$

$$\Rightarrow x = 3, 4.$$

For both values of x , $x^2 - 13x + 42$ is even.

Considering all cases, there are 6 distinct positive integral solutions

$$\text{for } (x^2 - 7x + 11)^{(x^2 - 13x + 42)} = 1$$

37. Ans. A.

Let the total members in the group = $100x$

Number of literates in the group = 65% of $100x = 65x$

Number of illiterates in the group = $100x - 65x = 35x$

Total number of young persons in the group = 28% of $100x = 28x$

Number of young persons among literates = 25% of $65x = 16.25x$

Number of young persons among illiterates = $28x - 16.25x = 11.75x$

Number of old persons among illiterates = $35x - 11.75x = 23.25x$

Percentage of old people among the

$$\text{illiterates} = \frac{23.25x}{35x} \times 100 \approx 66\%$$

38. Ans. C.



Let the two cars meet at point M and the time they took to meet is t mins.

Also assume the speed of car 1 be S_1 and that of car 2 is S_2 .

Time taken by car 1 to travel from A to M = t mins.

Time taken by car 2 to travel from M to A = 20 mins

Since distance is same in both cases

$$\frac{S_1}{S_2} = \frac{20}{t} \dots\dots\dots(1)$$

Similarly,

Time taken by car 1 to travel from M to B = 45 mins.

Time taken by car 2 to travel from B to M = t mins

Since distance is same in both cases

$$\frac{S_1}{S_2} = \frac{t}{45} \dots\dots\dots(2)$$

From (1) and (2)

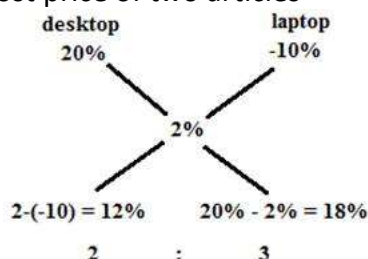
$$\frac{20}{t} = \frac{t}{45} \Rightarrow t = 30 \text{ mins}$$

Substituting $t = 30$ and $S_1 = 60$ in first equation, we get

$$\frac{60}{S_2} = \frac{20}{30} \Rightarrow S_2 = 90 \text{ km / hr}$$

39. Ans.

Using alligations, we can find the ratio of cost price of two articles



Ratio of the cost prices of desktop to that of computer = 2 : 3

Purchase price of desktop

$$\frac{2}{2+3} \times 50000 = \text{Rs. } 20000$$

40. Ans. A.

$$f(5+x) = f(5-x)$$

$$\text{let } x = 5 - y$$

$$\text{then } f(10 - y) = f(y)$$

.....
(1)

Now let a and b are two of the four roots of $f(x) = 0$.

$$\text{Then } f(a) = f(b) = 0$$

Substituting $y = a$ in equation (1) we get

$$f(10 - a) = f(a) = 0$$

Which means $10 - a$ is a root of the given equation.

Substituting $y = b$ in equation (1) we get

$$f(10 - b) = f(b) = 0$$

So $(10 - b)$ is a root of the given equation.

Hence the four roots of the given equation are $a, b, 10 - a$ and $10 - b$.

$$\text{Sum of roots} = a + b + 10 - a + 10 - b = 20$$

41. Ans.

Let the required time period be t years after Veeru's investment. So Joy invested for $(t - 2)$ years.

$$\text{Veeru's balance} = 10000 + \frac{10000 \times 5 \times t}{100}$$

$$\text{Joy's balance} = 8000 + \frac{8000 \times 10 \times (t - 2)}{100}$$

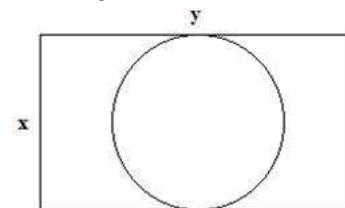
$$\therefore 10000 + \frac{10000 \times 5 \times t}{100} =$$

$$8000 + \frac{8000 \times 10 \times (t - 2)}{100}$$

$$\Rightarrow 2000 = 800(t - 2) - 500t$$

$$\Rightarrow 3600 = 300t \Rightarrow 12 \text{ years} = t$$

42. Ans. D.



Let the dimensions of rectangle are x and y where $x < y$. Then

$$xy = 135 \quad \text{.....(1)}$$

Radius of circle = $x/2$

$$\text{Painted area of sheet} = \pi \left(\frac{x}{2}\right)^2$$

$$135 - \pi \left(\frac{x}{2}\right)^2$$

Unpainted area of sheet =

According to question

$$135 - \pi \left(\frac{x}{2}\right)^2 = \frac{2}{3} \times \pi \left(\frac{x}{2}\right)^2$$

$$\Rightarrow 135 = \frac{5}{3} \times \pi \left(\frac{x}{2}\right)^2$$

$$\Rightarrow \frac{81}{\pi} = \left(\frac{x}{2}\right)^2 \Rightarrow x = \frac{18}{\sqrt{\pi}} \text{ inches}$$

Substituting x in equation (1), we get

$$y = \frac{135\sqrt{\pi}}{18} = \frac{15\sqrt{\pi}}{2} \text{ inches}$$

Perimeter of rectangle = $2x + 2y$

$$= \frac{36}{\sqrt{\pi}} + 15\sqrt{\pi} = 3\sqrt{\pi} \left(5 + \frac{12}{\pi}\right)$$

43. Ans.

Let us assume the three digit number be abc.

Since $2 < a \times b \times c < 7$. Product of digits can be 3, 4, 5 or 6.

The possible combinations are (1, 1, 3), (1, 1, 4), (1, 1, 5), (1, 1, 6), (1, 2, 2), (1, 2, 3).

Total number of 3 digit numbers which can be formed using above combinations

$$= 5 \times \frac{3!}{2!} + 3! = 21$$

44. Ans.

For Initial Solution

Total volume = 40 litres

Volume of dye = $2/5$ of 40 = 16 litres

Volume of water = $3/5$ of 40 = 24 litres

Now we add water to change the proportion to 2 : 5. So volume of dye will not change.

Volume of dye in the new solution = 16 litres

Volume of water in new solution = $5/2$ of 16 = 40 litre

Total volume of new solution = 56 litres

Now $1/4^{\text{th}}$ of the solution is removed.

Total volume left = $3/4$ of 56 = 42 litres

Volume of dye left = $3/4$ of 16 = 12 litre

Volume of water left = $3/4$ of 40 = 30 litre

Now we add dye to the above solution, so volume of water will be same.

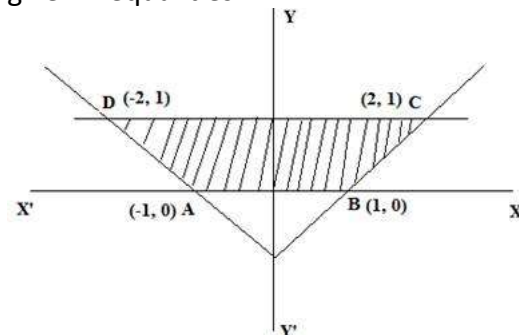
Volume of water = 30 litres

Volume of dye = $2/3$ of 30 = 20 litres

Volume of dye added = 20 – 12 = 8 litres.

45. Ans.

We can draw the following graph by using given inequalities.

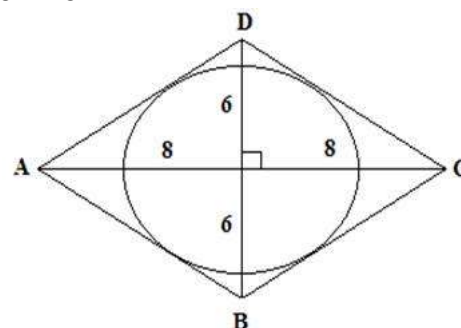


The required region is the area of trapezium ABCD shown in the graph.

AB = 2 unit, CD = 4 unit, h = 1 unit

$$\text{Area} = \frac{1}{2} \times (2 + 4) \times 1 = 3 \text{ sq. unit}$$

46. Ans. A.



We know that diagonals of rhombus bisect each other at 90° . Therefore

$$\text{Side of rhombus} = \sqrt{\left(\frac{12}{2}\right)^2 + \left(\frac{16}{2}\right)^2} = 10 \text{ cm}$$

$$\text{Area of Rhombus} = \frac{1}{2} \times 12 \times 16 = 96 \text{ cm}^2$$

Also Area of Rhombus = $s \times r$ where s is semi-perimeter and r is radius of incircle.

$$96 = 20 \times r$$

$$r = 24/5 \text{ cm}$$

$$\frac{\text{Area of circle}}{\text{Area of rhombus}} = \frac{\pi \left(\frac{24}{5}\right)^2}{96} = \frac{6\pi}{25}$$

47. Ans. B.

$$2^{Y^2(\log_3 5)} = 5^{\log_2 3}$$

Taking log both sides, we get

$$\log 2^{Y^2(\log_3 5)} = \log 5^{\log_2 3}$$

$$\Rightarrow Y^2 (\log_3 5) \times \log 2 = \log_2 3 \times \log 5$$

$$\Rightarrow Y^2 \times \frac{\log 5}{\log 3} \times \log 2 = \frac{\log 3}{\log 2} \times \log 5$$

$$\Rightarrow Y^2 = (\log_2 3)^2$$

$$\Rightarrow Y = \pm \log_2 3$$

Since it is given that y is negative

$$\Rightarrow Y = -\log_2 3 = \log_2 1/3$$

Hence option B is correct answer.

48. Ans. A.

Let the scheduled time be T .

If speed is $1/3$ of the usual speed, then time should be 3 times the scheduled time.

$$\text{So new time} = 3T$$

$$3T - T = 30 \Rightarrow T = 15 \text{ mins.}$$

In the return journey, the train has travelled at usual speed for 5 mins. So the remaining distance should be covered in 10 mins at usual speed. Since 4 mins are wasted, the distance should be covered in 6 mins.

The remaining time is $6/10 = 3/5$ of the usual time

So speed should be $5/3 = 166.67\%$ of the usual speed.

So speed should increase by 67% approx.

49. Ans. C.

$$x = (4096)^{7+4\sqrt{3}}$$

$$\Rightarrow x^{7-4\sqrt{3}} = (4096)^{(7+4\sqrt{3})(7-4\sqrt{3})}$$

$$\Rightarrow x^{7-4\sqrt{3}} = (64^2)^1$$

$$\Rightarrow 64 = (x^{7-4\sqrt{3}})^{\frac{1}{2}}$$

$$\Rightarrow 64 = x^{\frac{7}{2}-2\sqrt{3}}$$

$$\Rightarrow 64 = \frac{x^{\frac{7}{2}}}{x^{2\sqrt{3}}}$$

Hence option C is the correct answer.

50. Ans.

Substituting $x + \frac{1}{x} = y$ in the given equation, we get

$$y^2 - 3y + 2 = 0$$

$$\Rightarrow (y-1)(y-2) = 0$$

$$\Rightarrow y = 1 \text{ or } 2$$

Case 1: If $y = 1$

$$x + \frac{1}{x} = 1$$

$$x^2 - x + 1 = 0$$

$$D = (-1)^2 - 4 \times 1 \times 1 = -3 < 0$$

No real root in this case.

Case 2: If $y = 2$

$$x + \frac{1}{x} = 2$$

$$x^2 - 2x + 1 = 0$$

$$D = (-2)^2 - 4 \times 1 \times 1 = 0$$

Exactly one distinct real root in this case.

Hence the given equation has only 1 distinct real root.

51. Ans. C.

Option A is not backed by the passage. Since passage suggests that "43 percent of the males on Año Nuevo had come from southern rookeries that had a faster pulse rate." So it too gets ruled out. Option B too does not explain the reason behind the observation and therefore eliminated. Option C is supported by the passage. "At

other sites, where the scientists found faster pulse rates, the opposite would have happened—seals with faster rates would have happened to arrive first.” And is therefore the correct answer. Option D does not explain the reason behind faster call pulse rate. So gets dismissed.

52. Ans. D.

The question asks for an option which if true would have not led to the disappearance of the dialects (means the dialects would have persisted). The passage suggests that as the population kept increasing and recolonizing the former breeding locations immigrants from the original population, which caused the average dialects of the host to match those of the original colonies leading to the disappearance of dialects with time. The dialects of the host colony changed to match those of visitors from the original colony. So, disappearance of dialects would not have happened if the converse phenomenon happened, where the visitors dialects changed to match the host colony. This is best captured in Option D. Option A is exactly what happened and this would result in disappearance of the dialects.

Option B is incorrect since according to the passage immigration was a prerequisite towards a change in the dialects. So if no immigration took place dialects could not have persisted. therefore it gets dismissed. Option C would not bring any change in the result and therefore dismissed. Therefore, Option D is the correct answer.

53. Ans. C.

Since the question asks for an overall history entire passage has to be taken into consideration. The last paragraph of the passages helps to sum up all. “Modern males exhibit more individual diversity..... sometimes featuring doublets or triplets.”

This is best captured in Option C. Option B suggests transformation to “simple composition, less individual variety, and great regional variety.” which is incorrect according to the passage. So, it gets dismissed. Option D also suggests transformation “to complex composition, less individual variety, and great regional variety.” which again is incorrect and therefore dismissed. Option A though is supported by the passage does not sum it up. So it gets dismissed. Option C is therefore the correct answer.

54. Ans. D.

The question asks for an option that cannot be inferred from the passage.

Option A can be inferred from the passage. As the passage suggests “dialects were, perhaps, a result of isolation over time”, after the breeding sites had been recolonized. So, had near extinction not occurred the possibility of isolation and difference in dialects would have been ruled out. Therefore, it gets dismissed. Option B is backed by the passage. The passage suggests that migration caused a variation in the average pulse but at an individual level the pulse of the calls remained the same. Therefore, it gets dismissed.

Option C is also supported by the passage “In order to test the reliability.... other colonies we had measured in the past” Le Boeuf told me.” Therefore, it too gets dismissed.

Option D however is not backed by the passage. The passage suggests that the call rates” eventually regressed to the average pulse rate of the founder colony.” But it nowhere indicates that migration could have resulted in call pulse rate of its male seals *exceed* that of the seal at Isla Guadalupe. Therefore option D cannot be inferred and is the correct answer.

55. Ans. A.

The passage is centric to Anarchism; its origin, evolution, etc. So, the correct option must have it as the key idea. And this helps eliminate Options C and D as they miss out on Anarchism. The passage discusses Anarchism in the context of "desirable freedom of an individual or family to possess the resources needed for living, "and "individual". These ideas are best captured in Option A and therefore it is the correct answer.

56. Ans. B.

The last paragraph of the passage gives an insight to Individualist anarchism. It mentions one of the traditions of individualist anarchism, borrowed from American thinkers was "protecting our own autonomy and associating with others for common advantages, we are promoting the good of all." But these thinkers "differed from free-market liberals in their absolute mistrust of American capitalism, and in their emphasis on mutualism". Which clearly suggests that the individual anarchists and free-market thinkers concurred with the importance of individual autonomy but differed in opinions pertaining to capitalism. Anarchists emphasis on mutualism while free-market thinkers did not. This is best captured in Option B.

Option A brings in the idea of "state intervention in markets." which is not supported by the passage and therefore dismissed. Option C talks about "morally upright capitalism" which again is extraneous and therefore dismissed. Option D talks about "moral principles of altruism" which again is an outside piece of information and is therefore ruled out.

57. Ans. B.

Option A is also corroborated by the passage. Passage mentions that the French

Revolution had ended not only with a reign of terror and the emergence of a newly rich ruling caste and "workers and peasants, grasping the chance that arose to bring an end to centuries of exploitation and tyranny, were inevitably betrayed by the new class of politicians..." So it too gets dismissed.

Option C is backed by the passage. Author in the third and the fourth paragraph states about the states "applying violence and terror, a secret police, and a professional army to maintain their control." and in keeping "a watchful and sometimes punitive eye on its dissidents". So it too gets dismissed.

Option D is supported by the passage. The passage states "There are, unsurprisingly, several traditions of individualist anarchism" which stresses "the obviously desirable freedom of an individual or family to possess the resources needed for living". So option A gets dismissed.

But the passage does not factor in "mainstream mistrust of collectivism" on the contrary the passage claims that the mainstream of anarchist propaganda was mutual control by local communities. Therefore option B is the correct answer.

58. Ans. C.

The third paragraph of the passage discusses the aftermath of French Revolution. The paragraph highlights that it resulted not only with a reign of terror and the emergence of a newly rich ruling caste who betrayed the very principles of the Revolution. The workers and the peasants got together to bring an end to tyranny and exploitation but were betrayed by a new ruling class, which had "no hesitation in applying violence and terror, a secret police, and a professional army to maintain their control". This has been best captured in Option C. Option A is

beyond the scope of the passage and thus, dismissed. Option B brings in a different dimension "destructive impact of the Revolution on the market." which is unrelated and therefore dismissed. Option D also is extraneous and therefore ruled out. Therefore, Option C is the correct answer.

59. Ans. D.

The fourth paragraph of the passage shares the ideology of anarchists in general. It states that for anarchists state itself is the enemy not because "every state keeps a watchful and sometimes punitive eye on its dissidents, but because every state protects the privileges of the powerful". The following paragraph sheds more light on the ideology of the anarchists. It states that "The mainstream of anarchist propaganda for more than a century" has been on "mutual control by local communities" and in "opposing the concept of any central authority." So this is best stated in Option D. Option A is converse to their ideology and therefore ruled out. Option B again has no relevance and therefore ruled out. Option C is unrelated and therefore dismissed. Therefore Option D is the correct answer.

60. Ans. A.

In the context of the passage in order to make a transaction worth one-eighth of a bolt of cloth paying by grain, using coins or paying with a faded cloth(which registers a depreciation in value because of wear and tear) would be appropriate, while cutting one eighth of the fabric from new bolt will not be a wise move. Therefore, option A is the correct answer.

61. Ans. A.

The words "steady" and "stable" have been used by the author in "Furthermore, the dimensions of a bolt.....more stable than the fluctuating values of coins." So the two

words indicate reliable supply, measurements and quality but transportation as such is not indicated. Therefore, option A is correct.

62. Ans. B.

Option C is not supported by the passage as the passage states that grains and cloth both perishable goods were used to pay taxes by the peasants. "One of the main objections would not be able to pay their taxes." So, option C gets dismissed. Option A is not supported by the passage. So it get ruled out. Option D is also not supported by the passage and therefore dismissed. Option B is supported by the passage; "In actuality, our own currency system.....never use cash do not know how to write a cheque. Therefore option B is correct.

63. Ans. D.

The last paragraph of the passage highlights the similarities between the modern currency system with that of Tang. It is stated that our currency system uses different modes of transactions, Cash, cheques, debit and credit cards. So, options A,B,C are supported by the passage. But the currency system is not "undergoing transformation." The transformation and the change is happening in front of our eyes. It is not latent. Therefore, option D is the correct answer.

64. Ans. D.

The question asks for an option that cannot be inferred from the passage. Option B can be inferred from "since a sentence is, by definition,begin with a capital letter, end with a period", therefore it gets dismissed. Option A can be inferred from "Must you write complete sentences each time, every time? Perish the thought. "therefore it too gets dismissed. Option C is also backed by the passage and can be

inferred from "If your work consists only.....Grammar Police aren't going to come and take you away." So, it too gets dismissed. Only option D is not supported by the passage. Though the passage does state that there is "comforting simplicity" at the heart of grammar, it does not mean that the purpose of grammar is to make sentences simple. Therefore option D is the correct answer.

65. Ans. D.

Option B gets out rightly dismissed as the author of the passage is not against the use of rhetoric, the fundamentals of grammar. So it gets eliminated. Option C limits itself to rules of punctuation and capitalization and does not talk about grammar rules in general and therefore it gets dismissed. Option A again talks about breaking the rules of grammar, which is beyond the scope of the passage and gets dismissed. Option D is supported by the passage. Author asks the readers to consider the quote by William Strunk which states that though best writers may disregard the rules of grammar. But unless a writer is sure of doing well he does his best to follow the stick to the rules. So this suggests author would recommend; "The availability of language software that will standardize the rules of grammar as an aid to writers". Therefore option D is the correct answer.

66. Ans. A.

The question asks to look for an option which is similar to the ones given as examples. Now we have to look for sentences which are less complicated, use minimum parts of speech and have an evident interplay between the Noun and Verb. So option B and C get dismissed in a go. Option D and A resemble the structure of the examples given in the question. However, Option D is a sheer exaggeration

since One apple tree in a field does not make an orchard and therefore gets dismissed on account of logic. Option A matches the construction of the examples and is therefore the correct answer.

67. Ans. D.

The question asks for an option which if false will support the argument made in the passage. Option A when true seems to support the passage not otherwise. So, it gets dismissed. Option C again when true supports the argument made in the passage and not otherwise. So it gets dismissed. Option B is beyond the scope of the passage. So it gets dismissed. Option D if untrue/false happens to support the argument in the passage. Which means it establishes (when untrue)the importance of nouns and verbs in complete sentences which is in sync with what has been stated in the passage" Nouns and verbs are the two indispensable parts of writing." Therefore, option D is correct.

68. Ans. C.

Through the passage the author tries to establish the role that Grammar plays and the last line of the passage; "Grammar is . . . the pole you grab to get your thoughts up on their feet and walking." Reiterates it. The passage maintains that grammar is fundamental to language and when rules break down "confusion and misunderstanding result". So, this idea has been best captured in option C.

Option A limits itself to the role of Nouns and Verbs and does not capture the bigger idea of the passage. Hence, dismissed. Option D talks about the using simple sentences when "you fear getting lost in the tangles of rhetoric", this is not the main idea of the passage and thus, dismissed. Option B talks about a caveat by the author wherein he states that only when a writer is certain of doing well then is when he

takes a chance to flout the rules of grammar. So the limiting clause here is unless and one who is unsure of the fundamentals of grammar may not know he is doing well. All in all this option too highlights the importance of grammar in language but limits itself to a writer's perspective, while option C is more generic. Therefore option C is the best answer.

69. Ans.

Sentence 3 is the best initiator of the sequence as it sets the context and the background. Sentence 1, with the phrase "remain an issue" add to the word "continuity" in sentence 3. So it follows 3. Sentence 2 further leads the idea by bringing in the role of China and sentence 4 sums up the entire state that all these "concerns" collectively have invited "states from outside the region to take an active interest in South East Asian security." Therefore, sequence 3124 is correct

70. Ans.

The sentences are about "San folk tales" Sentence 1 initiates the link as it suggests that by relying on the narrative structure alone it was hard to determine their indigenous significance. Sentence 4 continues the idea by stating that the significance or the "meaning" could be elicited by probing beneath the narrative, exploring the connotation (a feeling or an idea that is suggested by a word or thing, which may not be a part of its original meaning). Sentence 3 mentions about those implications or connotations. It states that selected tales reveal a "spiritual conflict"...and sentence 2 takes the idea forward, describe more about the revelation. Therefore, sequence 1432 is correct.

71. Ans. C.

The key ideas are

- After the decline of the Soviet power Europe strived to establish its independent identity.
- Europe took measures to change its internal structure and invented new ways of thinking about the nature of international order.
- In order to be a part of the culmination era Europe decided to put aside its political mechanisms through which it had conducted its affairs for three and a half centuries.
- Also driven by the desire to mitigate the effects generated by the unification of Germany, the new European Union established a common currency in 2002 and a formal political structure in 2004.
- It proclaimed a Europe united, whole, and free, adjusting its differences by peaceful mechanisms.

Options A, B and D do not capture all points, they do not mention that Europe did away with the political mechanisms through which it had conducted its affairs for three and a half centuries. So, they get dismissed. Option C best captures the main idea, that in order to be a part of the culmination era, it put away the political mechanisms, and projected itself as a united, whole, and free Europe adjusting its differences by peaceful mechanisms.

72. Ans.

Sentences 1-2-4-5 are linked. Sentence 4 states slavery depended on dialogue, slaves could never be muted, they could overthrow situations (subvert rules) by sharing dialogues, stated in sentence 1. They connected with each other "even in conditions of extreme violence and unfreedom". Their words remained "ubiquitous and irrepressible" as stated in

sentence 2 and slave owners feared the "slave talk" as they felt it bred conspiracy and revolt stated in sentence 5. So, all of the sentences primarily revolve around the slave talks, their repercussions. While only sentence 3 talks about the importance of oaths, orations among people and the spirit world in the societies where slaves came from. So, it is the odd one out.

73. Ans.

Sentence 1 is the initiator of the sequence. It sets the backdrop, the context. It suggests that the use of poisons against armies has been there "since the dawn of civilization". Sentence 3 continues the idea by suggesting that the foundation of "microbiology" gave a new way, offered "new prospects" which allowed the agents to be chosen and "designed on a rational basis." Sentence 2 further leads the idea by suggesting that the "dangers" attached to use of biological weapons were soon recognized and "two international declarations" were passed and Sentence 4 refers to these declarations as "treaties" which eventually failed. So, link 1324 is correct.

74. Ans.

Sentences 1-2-4-5 are linked. To begin with we must understand what the term "literary canon" signifies. It refers to the body of books, narratives and other texts considered to be the most important and influential in a particular time period. So, sentence 5 establishes that the feminists "activity of reading begins with the realization that the literary canon is androcentric" i.e. focused or centered around men. And Sentence 4 seems to take the idea forward "The documentation of this realization" was taken up by feminist critics. Sentence 2 sets an example for a work by a "feminist critic". And idea suggested in sentence 1 also goes well with

the definition of "literary canon". So, sentence 3 with talks about "androcentric literature" instead of "literary canon": the narrative being androcentric are two different ideas and therefore sentence 3 is odd one out.

75. Ans. C.

The main ideas include

- It has been believed for long that individuals are born with intelligence potential which is influenced by heredity and difficult to alter.
- Intelligence can be measured by paper-and-pencil measures, examining the brain and even studying the genome.
- Recently this approach has been criticized and biologists have questioned if considering intelligence a single entity is logical
- Also they question validity of measures used to estimate heritability of intelligence in humans who are not kept under controlled environments during study.

Option A brings in an outside idea. It calls intelligence as immutable while the passage calls it difficult to alter and it therefore gets dismissed. Option B serves as a blend of correct and incorrect information. The latter half of the option talks about questioning "the ways in which intelligence is inherited" instead of questioning the "validity of measures used to estimate heritability of intelligence". So, it gets dismissed. Option D conveys something which is beyond the scope of the passage and therefore dismissed. Option C best captures all the key ideas well and is therefore the correct answer.

76. Ans. A.

The main ideas are

- For years movies and television series have painted an unrealistic picture around "science of voices."
- Supercomputers declared that the probability of correct identification is 90%.
- This sequence is an example of a good number of misimpressions about forensic phonetics, which have led to errors in real-life justice.
- This movie sequence somewhere is a specimen of the "CSI effect" in which judges hold unrealistic expectations of the "capabilities of forensic science."

Options B and D do not bring out the demerit of the placing reliance on the capabilities of forensic science. So, they get dismissed. Option C limits itself to "voice recognition" alone and not to the forensic science in general. Also, it fails to cover the role played by movies and television series. So, it gets dismissed. Only option A captures all main ideas properly and is therefore the best answer.

