

CAT 2001 Question Paper

Time Allowed :180 Minutes	Maximum Marks :450	Total questions :150
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💡 Quick Tip

INSTRUCTIONS:

1. The Test Paper contains 150 questions. The duration of the test is 120 minutes.
2. The paper is divided into three sections. Section-I: 50 Q:, Section-II: 50 Q:, Section-III: 50 Q.
3. Wrong answers carry negative marks. There is only one correct answer for each question

Section I

Directions for questions 1 to 37: Answer the questions independently.

Q1. A student took five papers in an examination, where the full marks were the same for each paper. His marks in these papers were in the proportion of 6 : 7 : 8 : 9 : 10. In all papers together, the candidate obtained 60% of the total marks. Then the number of papers in which he got more than 50% marks is:

- (1) 2
 - (2) 3
 - (3) 4
 - (4) 5
-

Q2. A square, whose side is 2 m, has its corners cut away so as to form an octagon with all sides equal. Then the length of each side of the octagon, in metres, is:

- (1) $\frac{\sqrt{2}}{\sqrt{2}+1}$
 - (2) $\frac{2}{\sqrt{2}+1}$
 - (3) $\frac{2}{\sqrt{2}-1}$
 - (4) $\frac{\sqrt{2}}{\sqrt{2}-1}$
-

Q3. Let x , y , and z be distinct integers. x and y are odd and positive, and z is even and positive. Which one of the following statements cannot be true?

- (1) $(x - z)^2 y$ is odd
 - (2) $(x - z)y^2$ is odd
 - (3) $(x - y)^2 z$ is even
 - (4) $(x + y)^2 z$ is an odd integer
-

Q4. If $x \equiv 5$ and $y \equiv -1$, then which of the following statements is true?

- (1) $(x + 4y) \equiv 1$
 - (2) $x \equiv -4y$
 - (3) $-x \equiv 4y$
 - (4) None of these
-

Q5. A red light flashes three times per minute and a green light flashes five times in 2 minutes at regular intervals. If both lights start flashing at the same time, how many times do they flash together in each hour?

- (1) 30
- (2) 24
- (3) 20
- (4) 60

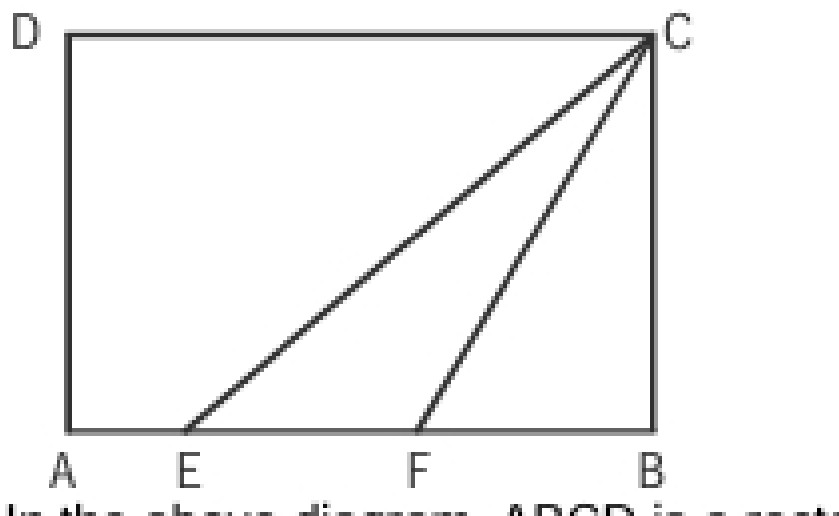
Q6. Of 128 boxes of oranges, each box contains at least 120 and at most 144 oranges. The number of boxes containing the same number of oranges is at least:

- (1) 5
- (2) 103
- (3) 6
- (4) Cannot be determined

Q7. A certain city has a circular wall around it, and this wall has four gates pointing north, south, east, and west. A house stands outside the city, 3 km north of the north gate, and it can just be seen from a point 9 km east of the south gate. What is the diameter of the wall that surrounds the city?

- (1) 6 km
- (2) 9 km
- (3) 12 km
- (4) None of these

Q8. In the above diagram, $ABCD$ is a rectangle with $AE = EF = FB$. What is the ratio of the areas of $\triangle CEF$ and that of the rectangle?



- (1) $\frac{1}{6}$
 - (2) $\frac{1}{8}$
 - (3) $\frac{1}{9}$
 - (4) None of these
-

Q9. A can complete a piece of work in 4 days. B takes double the time taken by A, C takes double that of B, and D takes double that of C to complete the same task. They are paired in groups of two each. One pair takes two-thirds the time needed by the second pair to complete the work. Which is the first pair (the faster pair)?

- (1) A and B
 - (2) A and C
 - (3) B and C
 - (4) A and D
-

Q10. In a four-digit number, the sum of the first 2 digits is equal to that of the last 2 digits. The sum of the first and last digits is equal to the third digit. Finally, the sum of the second and fourth digits is twice the sum of the other 2 digits. What is the third digit of the number?

- (1) 5
 - (2) 8
 - (3) 1
 - (4) 4
-

Q11. Two men X and Y started working for a certain company at similar jobs on January 1, 1950. X asked for an initial salary of Rs. 300 with an annual increment of Rs. 30. Y asked for an initial salary of Rs. 200 with a rise of Rs. 15 every 6 months. Assume that the arrangements remained unaltered till December 31, 1959. Salary is paid on the last day of the month. What is the total amount paid to them as salary during the period?

- (1) Rs. 93,300
 - (2) Rs. 93,200
 - (3) Rs. 93,100
 - (4) Rs. 86,400
-

Q12. Anita had to do a multiplication. Instead of taking 35 as one of the multipliers, she took 53. As a result, the product went up by 540. What is the new product?

- (1) 1050
- (2) 540
- (3) 1440
- (4) 1590

Q13. A college has raised 75% of the amount it needs for a new building by receiving an average donation of Rs. 600 from the people already solicited. The people already solicited represent 60% of the people the college will ask for donations. If the college is to raise exactly the amount needed for the new building, what should be the average donation from the remaining people to be solicited?

- (1) Rs. 300
- (2) Rs. 250
- (3) Rs. 400
- (4) Rs. 500

Q14. x and y are real numbers satisfying the conditions $2 \leq x \leq 3$ and $-8 \leq y \leq -7$. Which of the following expressions will have the least value?

- (1) x^2y
- (2) xy^2
- (3) $5xy$
- (4) None of these

Q15. m is the smallest positive integer such that for any integer $n \geq m$, the quantity $n^3 - 7n^2 + 11n - 5$ is positive. What is the value of m ?

- (1) 4
- (2) 5
- (3) 8
- (4) 6

Q16. A ladder leans against a vertical wall. The top of the ladder is 8 m above the ground. When the bottom of the ladder is moved 2 m farther away from the

wall, the top of the ladder rests against the foot of the wall. What is the length of the ladder?

- (1) 10 m
- (2) 15 m
- (3) 20 m
- (4) 17 m

Q17. Three friends, returning from a movie, stopped to eat at a restaurant. After dinner, they paid their bill and noticed a bowl of mints at the front counter. Sita took one-third of the mints, but returned four. Fatima then took one-fourth of what was left but returned three. Eswari then took half of the remainder but threw two back. The bowl had only 17 mints left. How many mints were originally in the bowl?

- (1) 38
- (2) 31
- (3) 41
- (4) 48

Q18. If 09/12/2001 happens to be Sunday, then 09/12/1971 would have been a:

- (1) Wednesday
- (2) Tuesday
- (3) Saturday
- (4) Thursday

Q19. In a number system, the product of 44 and 11 is 3414. The number 3111 of this system, when converted to the decimal number system, becomes:

- (1) 406
- (2) 1086
- (3) 213
- (4) 691

Q20. At his usual rowing rate, Rahul can travel 12 miles downstream in a certain river in 6 hr less than it takes him to travel the same distance upstream. But if he could double his usual rowing rate for this 24 miles round trip, the

downstream 12 miles would then take only 1 hr less than the upstream 12 miles. What is the speed of the current in miles per hour?

- (1) $\frac{7}{10}$
- (2) $\frac{14}{15}$
- (3) $\frac{7}{15}$
- (4) $\frac{3}{5}$

Q21. Every 10 years the Indian Government counts all the people living in the country. Suppose that the director of the census has reported the following data on two neighbouring villages Chota Hazri and Mota Hazri:

- Chota Hazri has 4,522 fewer males than Mota Hazri.
- Mota Hazri has 4,020 more females than males.
- Chota Hazri has twice as many females as males.
- Chota Hazri has 2,910 fewer females than Mota Hazri.

What is the total number of males in Chota Hazri?

- (1) 11,264
- (2) 14,174
- (3) 5,632
- (4) 10,154

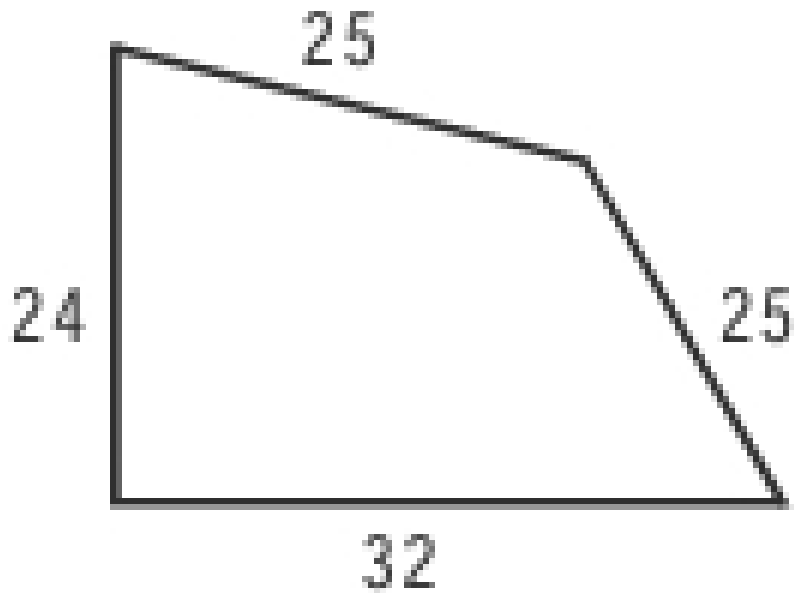
Q22. Three classes X, Y and Z take an algebra test. - The average score of class X is 83.

- The average score of class Y is 76.
- The average score of class Z is 85.
- The average score of classes X and Y together is 79.
- The average score of classes Y and Z together is 81.

What is the average for all three classes?

- (1) 81
- (2) 81.5
- (3) 82
- (4) 84.5

Q23. Two sides of a plot measure 32 m and 24 m and the angle between them is a perfect right angle. The other two sides measure 25 m each and the other three angles are not right angles. What is the area of the plot?



- (1) 768 m^2
- (2) 534 m^2
- (3) 696.5 m^2
- (4) 684 m^2

Q24. All the page numbers from a book are added, beginning at page 1. However, one page number was added twice by mistake. The sum obtained was 1000. Which page number was added twice?

- (1) 44
- (2) 45
- (3) 10
- (4) 12

Q25. Shyama and Vyom walk up an escalator (moving stairway). The escalator moves at a constant speed. Shyama takes three steps for every two of Vyom's steps. Shyama gets to the top after taking 25 steps, while Vyom takes 20 steps to reach the top. If the escalator were turned off, how many steps would they have to take to walk up?

- (1) 40
- (2) 50
- (3) 60
- (4) 80

Q26. At a certain fast food restaurant, Brian can buy 3 burgers, 7 shakes, and one order of fries for Rs. 120 exactly. At the same place it would cost Rs. 164.5 for 4 burgers, 10 shakes, and one order of fries. How much would it cost for an ordinary meal of one burger, one shake, and one order of fries?

- (1) Rs. 31
- (2) Rs. 41
- (3) Rs. 21
- (4) Cannot be determined

Q27. If a, b, c, d are four positive real numbers such that $abcd = 1$, what is the minimum value of $(1 + a)(1 + b)(1 + c)(1 + d)$?

- (1) 4
- (2) 1
- (3) 16
- (4) 18

Q28. Three friends — Asit, Arnold and Afzal — work together to get chores done. The time they take working together is 6 hours less than Asit would have taken alone, 1 hour less than Arnold would have taken alone, and half the time Afzal would have taken alone. How long did it take them to do the chores together?

- (1) 20 min
- (2) 30 min
- (3) 40 min
- (4) 50 min

Q29. Euclid has a triangle with the longest side measuring 20 units, another side measuring 10 units, and an area of 80 square units. What is the exact length of the third side?

- (1) $\sqrt{260}$
 - (2) $\sqrt{250}$
 - (3) $\sqrt{240}$
 - (4) $\sqrt{270}$
-

Q30. For a Fibonacci sequence, from the third term onwards, each term is the sum of the previous two. The difference in squares of the 7th and 6th terms of such a sequence is 517. What is the 10th term?

- (1) 147
 - (2) 76
 - (3) 123
 - (4) Cannot be determined
-

Q31. Fresh grapes contain 90% water by weight while dried grapes contain 20% water by weight. What is the weight of dry grapes available from 20 kg of fresh grapes?

- (1) 2 kg
 - (2) 2.4 kg
 - (3) 2.5 kg
 - (4) None of these
-

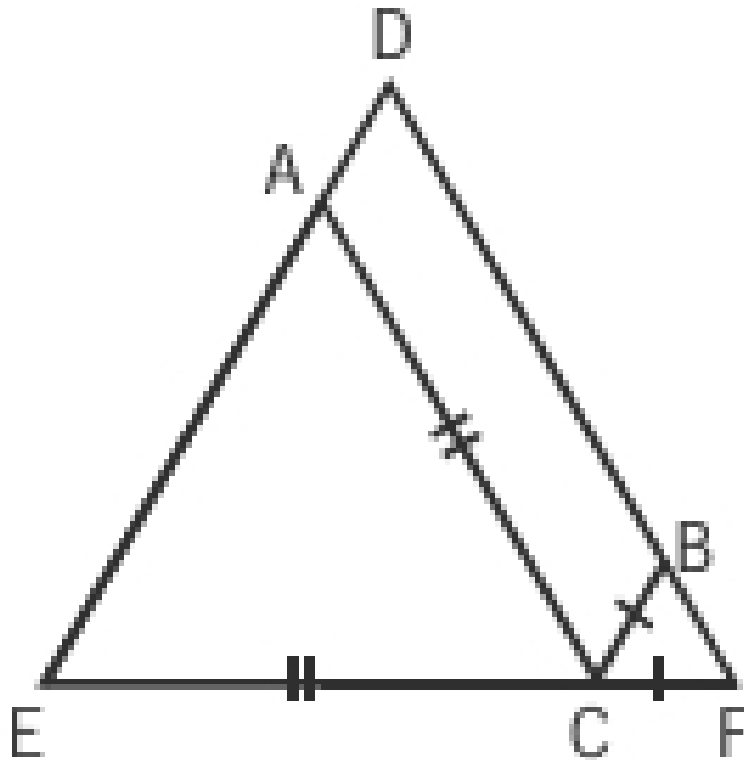
Q32. Train X departs from station A at 11 a.m. for station B, 180 km away. Train Y departs from station B at 11 a.m. for station A. Train X's speed is 70 km/h. Train Y's speed is 50 km/h but it stops for 15 minutes at station C, which is 60 km from B. Ignoring train lengths, at what distance from A do they meet?

- (1) 112 km
 - (2) 118 km
 - (3) 120 km
 - (4) 105 km
-

Q33. A set of consecutive positive integers beginning with 1 is written on the blackboard. A student erased one number. The average of the remaining numbers is $35\frac{7}{17}$. What was the number erased?

- (1) 7
 - (2) 8
 - (3) 9
 - (4) None of these
-

Q34. In $\triangle DEF$ shown, points A, B, and C are taken on DE, DF, and EF respectively such that $EC = AC$ and $CF = BC$. If $\angle D = 40^\circ$, then $\angle ACB = ?$



- (1) 140
- (2) 70
- (3) 100
- (4) None of these

Q35. The owner of an art shop conducts his business in the following manner: every once in a while he raises his prices by $X\%$, then a while later he reduces all the new prices by $X\%$. After one such up-down cycle, the price of a painting was decreased by Rs. 441. After a second up-down cycle, the painting was sold for Rs. 1,944.81. What was the original price of the painting?

- (1) Rs. 2,756.25
- (2) Rs. 2,256.25
- (3) Rs. 2,500
- (4) Rs. 2,000

Q36. Three runners A, B, C run a race. A finishes 12 m ahead of B and 18 m ahead of C. In a separate race of the same length, B finishes 8 m ahead of C. All runners run the entire distance at their own constant speeds. What was the length of the race?

- (1) 36 m
- (2) 48 m
- (3) 60 m
- (4) 72 m

Q37. Let x and y be positive numbers such that $x + y = 1$. Find the minimum value of $\left(x + \frac{1}{x}\right)^2 + \left(y + \frac{1}{y}\right)^2$.

- (1) 12
- (2) 20
- (3) 12.5
- (4) 13.3

Directions for questions 38 and 39: Answer the questions based on the following information.

The batting average (BA) of a Test batsman is computed from runs scored and innings played — completed innings and incomplete innings (not out) in the following manner:

r_1 = Number of runs scored in completed innings

n_1 = Number of completed innings

r_2 = Number of runs scored in incomplete innings

n_2 = Number of incomplete innings

$$\text{BA} = \frac{r_1 + r_2}{n_1}$$

To better assess a batsman's accomplishments, the ICC is considering two other measures MBA_1 and MBA_2 , defined as follows:

$$\text{MBA}_1 = \frac{r_1}{n_1} + \frac{n_2}{n_1} \max \left[0, \left(\frac{r_2}{n_2} - \frac{r_1}{n_1} \right) \right]$$

$$\text{MBA}_2 = \frac{r_1 + r_2}{n_1 + n_2}$$

Directions for questions 38 and 39: Answer the questions based on the following information.

The batting average (BA) of a Test batsman is computed from runs scored and innings played — completed innings and incomplete innings (not out) in the following manner:

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$$MBA_2 = \frac{r_1 + r_2}{n_1 + n_2}$$

Q38. Based on the given definitions of BA , MBA_1 , and MBA_2 , which of the following is true?

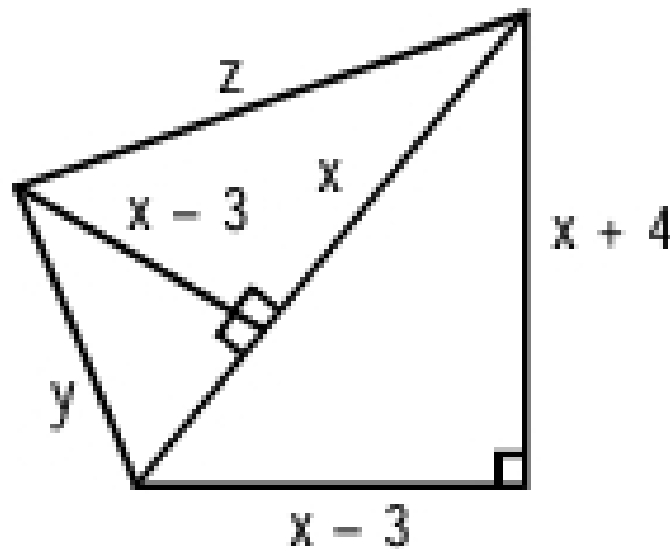
- (1) $MBA_1 \leq BA \leq MBA_2$
- (2) $BA \leq MBA_2 \leq MBA_1$
- (3) $MBA_2 \leq BA \leq MBA_1$
- (4) None of these

Q39. An experienced cricketer with no incomplete innings has a BA of 50. The next time he bats, the innings is incomplete and he scores 45 runs. It can be inferred that:

- (1) BA and MBA_1 will both increase
- (2) BA will increase and MBA_1 will decrease
- (3) BA will increase and MBA_1 may increase or decrease
- (4) BA will increase and MBA_2 will decrease

Directions for questions 40 to 48: Answer the questions independently.

Q40. Based on the figure, what is the value of x , if $y = 10$?



- (1) 10
 - (2) 11
 - (3) 12
 - (4) 6.64
-

Q41. A rectangular pool 20 m wide and 60 m long is surrounded by a walkway of uniform width. The total area of the walkway is 516 m^2 . How wide, in metres, is the walkway?

- (1) 4.3 m
 - (2) 3 m
 - (3) 3.5 m
 - (4) 4 m
-

Q42. Let b be a positive integer and $a = b^2 - b$. If $b \geq 4$, then $a^2 - 2a$ is divisible by:

- (1) 15
 - (2) 20
 - (3) 24
 - (4) All of these
-

Q43. Ashish is given Rs. 158 in one-rupee coins. He is asked to put them into a number of bags such that he can hand over any amount from Re 1 to Rs. 158 by giving a certain number of bags without opening them. What is the minimum number of bags he will need?

- (1) 7
 - (2) 8
 - (3) 13
 - (4) None of these
-

Q44. In some code, letters a, b, c, d, e represent the numbers 2, 4, 5, 6, and 10 in some order. We are given the following relationships: I. $a + c = e$, II. $b - d = d$, III. $e + a = b$. Which statement is true?

- (1) $b = 4, d = 2$
- (2) $a = 4, e = 6$
- (3) $b = 6, e = 2$
- (4) $a = 4, c = 6$

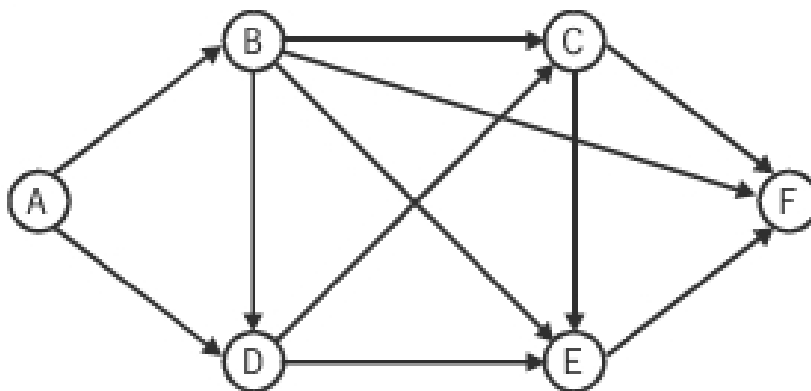
Q45. Ujagar and Keshab attempted to solve a quadratic equation. - Ujagar made a mistake in writing down the constant term and got roots (4, 3).
 - Keshab made a mistake in writing down the coefficient of x and got roots (3, 2).
 What will be the exact roots of the original quadratic equation?

- (1) (6, 1)
 - (2) $(-3, -4)$
 - (3) (4, 3)
 - (4) $(-4, -3)$
-

Q46. A change-making machine contains 1-rupee, 2-rupee, and 5-rupee coins. The total number of coins is 300 and the total value of the coins is Rs. 960. If the number of 1-rupee coins and 2-rupee coins are interchanged, the value decreases by Rs. 40. Find the total number of 5-rupee coins.

- (1) 100
 - (2) 140
 - (3) 60
 - (4) 150
-

Q47. The network diagram shows cities A, B, C, D, E, F with arrows indicating permissible one-way travel. How many distinct paths exist from A to F?



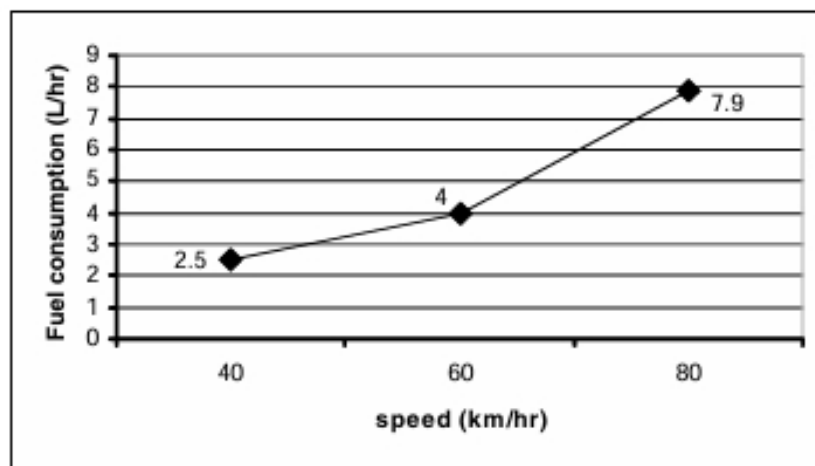
- (1) 9
 - (2) 8
 - (3) 11
 - (4) None of these
-

Q48. Let n be the number of different five-digit numbers, divisible by 4, that can be formed using the digits 1, 2, 3, 4, 5, and 6, with no repetition of digits. What is the value of n ?

- (1) 144
- (2) 168
- (3) 192
- (4) None of these

Directions for questions 49 and 50: Answer the questions based on the following information.

The petrol consumption rate of a new model car 'Palto' depends on its speed and may be described by the graph below.



Q49. Manasa makes a 200 km trip from Mumbai to Pune at a steady speed of 60 km/hr. What is the volume of petrol consumed for the journey?

- (1) 12.5 L
- (2) 13.33 L
- (3) 16 L
- (4) 19.75 L

Q50. Manasa would like to minimize the fuel consumption for the trip by driving at the appropriate speed. How should she change the speed?

- (1) Increase the speed
- (2) Decrease the speed
- (3) Maintain the speed at 60 km/hr
- (4) Cannot be determined

Section II

Directions for questions 51 to 55: Answer the questions based on the following information. For the word given at the top of each table, match the dictionary definitions on the left (A, B, C, D) with their corresponding usage on the right (E, F, G, H). Out of the four possibilities given in the boxes below the table, select the one that has all the definitions and their usages correctly matched.

Q51. Match the dictionary definitions (A–D) of the word “Exceed” with the correct usage (E–H).

Dictionary definition	Usage
A. To extend outside of or enlarge beyond used chiefly in strictly physical relations	E. The mercy of God exceeds our finite minds
B. To be greater than or superior to	F. Their accomplishments exceeded our expectation.
C. Be beyond the comprehension of	G. He exceeded his authority when he paid his brother’s gambling debts with money from the trust.
D. To go beyond a limit set by (as an authority or privilege)	H. If this rain keeps up, the river will exceed its banks by morning.

- (1) a: A–H, B–F, C–E, D–G
(2) b: A–H, B–E, C–F, D–G
(3) c: A–G, B–F, C–E, D–H
(4) d: A–G, B–H, C–F, D–E

Q52. Match the dictionary definitions (A–D) of the word “Infer” with the correct usage (E–H).

Dictionary definition	Usage
A. To derive by reasoning or implication	E. We see smoke and infer fire.
B. To surmise	F. Given some utterance, a listener may infer from it all sorts of things which neither the utterance nor the utterer implied.
C. To point out	G. I waited all day to meet him. From this you can infer my zeal to see him.
D. To hint	H. She did not take part in the debate except to ask a question inferring that she was not interested in the debate.

- (1) a: A–G, B–E, C–H, D–F
(2) b: A–F, B–H, C–E, D–G
(3) c: A–H, B–G, C–F, D–E
(4) d: A–E, B–F, C–G, D–H

Q53. Match the dictionary definitions (A–D) of the word “Mellow” with the correct usage (E–H).

Dictionary definition	Usage
A. Adequately and properly aged so as to be free of harshness	E. He has mellowed with age.
B. Freed from the rashness of youth	F. The tones of the old violin were mellow.
C. Of soft and loamy consistency	G. Some wines are mellow.
D. Rich and full but free from stridency	H. Mellow soil is found in the Gangetic plains. (Corrected usage)

- (1) a: A–E, B–G, C–H, D–F
(2) b: A–E, B–F, C–G, D–H
(3) c: A–G, B–E, C–H, D–F
(4) d: A–H, B–G, C–F, D–E

Q54. Match the dictionary definitions (A–D) of the word “Relief” with the correct usage (E–H).

Dictionary definition	Usage
A. Removal or lightening of something distressing	E. A ceremony follows the relief of a sentry after the morning shift.
B. Aid in the form of necessities for the indigent	F. It was a relief to take off the tight shoes.
C. Diversion	G. The only relief I get is by playing cards.
D. Release from the performance of duty	H. Disaster relief was offered to the victims.

- (1) a: A–F, B–H, C–E, D–G
(2) b: A–F, B–H, C–G, D–E
(3) c: A–H, B–F, C–G, D–E
(4) d: A–G, B–E, C–H, D–F

Q55. Match the dictionary definitions (A–D) of the word “Purge” with the correct usage (E–H).

- (1) a: A–E, B–G, C–F, D–H
(2) b: A–F, B–H, C–E, D–G
(3) c: A–H, B–F, C–G, D–E
(4) d: A–F, B–H, C–E, D–G

Dictionary definition	Usage
A. Remove a stigma from the name of	E. The opposition was purged after the coup.
B. Make clean by removing whatever is superfluous, foreign	F. The committee heard his attempt to purge himself of a charge of heresy.
C. Get rid of	G. Drugs that purge the bowels are often bad for the brain.
D. To cause evacuation of	H. It is recommended to purge water by distillation.

Directions for questions 56 to 60: The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph.

Q56. Arrange the sentences to form a coherent paragraph:

- A. Although there are large regional variations, it is not infrequent to find a large number of people sitting here and there and doing nothing.
 B. Once in office, they receive friends and relatives who feel free to call any time without prior appointment.
 C. While working, one is struck by the slow and clumsy actions and reactions, indifferent attitudes, procedure rather than outcome orientation, and the lack of consideration for others.
 D. Even those who are employed often come late to the office and leave early unless they are forced to be punctual.
 E. Work is not intrinsically valued in India.
 F. Quite often people visit ailing friends and relatives or go out of their way to help them in their personal matters even during office hours.

- (1) ECADBF
 (2) EADCFB
 (3) EADBCF
 (4) ABFCEB

Q57. Arrange the sentences to form a coherent paragraph:

- A. But in the industrial era destroying the enemy's productive capacity means bombing the factories which are located in the cities.
 B. So in the agrarian era, if you need to destroy the enemy's productive capacity, what you want to do is burn his fields, or if you're really vicious, salt them.
 C. Now in the information era, destroying the enemy's productive capacity means destroying the information infrastructure.
 D. How do you do battle with your enemy?
 E. The idea is to destroy the enemy's productive capacity, and depending upon the economic foundation, that productive capacity is different in each case.
 F. With regard to defence, the purpose of the military is to defend the nation and be prepared to do battle with its enemy.

- (1) FDEBAC
 (2) FCABED

- (3) DEBACF
(4) DFEBAC
-

Q58. Arrange the sentences to form a coherent paragraph:

- A. Michael Hofman, a poet and translator, accepts this sorry fact without approval or complaint.
B. But thanklessness and impossibility do not daunt him.
C. He acknowledges too — in fact, he returns to the point often — that best translators of poetry always fail at some level.
D. Hofman feels passionately about his work and this is clear from his writings.
E. In terms of the gap between worth and rewards, translators come somewhere near nurses and street-cleaners.

- (1) EACDB
(2) ADEBC
(3) EACBD
(4) DCEAB
-

Q59. Arrange the sentences to form a coherent paragraph:

- A. Passivity is not, of course, universal.
B. In areas where there are no lords or laws, or in frontier zones where all men go armed, the attitude of the peasantry may well be different.
C. So indeed it may be on the fringe of the unsubmitive.
D. However, for most of the soil-bound peasants the problem is not whether to be normally passive or active, but when to pass from one state to another.
E. This depends on an assessment of the political situation.

- (1) BEDAC
(2) CDABE
(3) EDBAC
(4) ABCDE
-

Q60. Arrange the sentences to form a coherent paragraph:

- A. The situations in which violence occurs and the nature of that violence tends to be clearly defined at least in theory, as in the proverbial Irishman's question: "Is this a private fight or can anyone join in?"
B. So the actual risk to outsiders, though no doubt higher than in our societies, is calculable.
C. Probably the only uncontrolled applications of force are those of social superiors to social inferiors and even here there are probably some rules.
D. However, binding the obligation to kill, members of feuding families engaged in mutual massacre will be genuinely appalled if by some mischance a bystander or outsider is killed.

- (1) DABC
- (2) ACDB
- (3) CBAD
- (4) DBAC

Directions for questions 61 to 65: In each of the following sentences, parts of the sentence are left blank. Beneath each sentence, four different ways of completing the sentence are indicated. Choose the best alternative from among the four.

Q61. But ---- are now regularly written not just for tools, but for well-established practices, organisations and institutions, not all of which seem to be ---- away.

- (a) reports ... withering
- (b) stories ... trading
- (c) books ... dying
- (d) obituaries ... fading

Q62. The Darwin who --- is most remarkable for the way in which he --- the attributes of the world class thinker and head of the household.

- (a) comes ... figures
- (b) arises ... adds
- (c) emerges ... combines
- (d) appeared ... combines

Q63. Since her face was free of --- there was no way to --- if she appreciated what had happened.

- (a) make-up ... realise
- (b) expression ... ascertain
- (c) emotion ... diagnose
- (d) scars ... understand

Q64. In this context, the --- of the British labour movement is particularly ----.

- (a) affair ... weird
- (b) activity ... moving
- (c) experience ... significant
- (d) atmosphere ... gloomy

Q65. Indian intellectuals may boast, if they are so inclined, of being ___ to the most elitist among the intellectual ___ of the world.

- (a) subordinate ... traditions
- (b) heirs ... cliques
- (c) ancestors ... societies
- (d) heirs ... traditions

Direction for questions 66 to 70: For each of the words below, a contextual usage is provided. Pick the word from the alternatives given that is most inappropriate in the given context.

Q66. Specious: A specious argument is not simply a false one but one that has the ring of truth.

- (a) Deceitful
- (b) Fallacious
- (c) Credible
- (d) Deceptive

Q67. Obviate: The new mass transit system may obviate the need for the use of personal cars.

- (a) Prevent
- (b) Forestall
- (c) Preclude
- (d) Bolster

Q68. Disuse: Some words fall into disuse as technology makes objects obsolete.

- (a) Oblivion
- (b) Desuetude
- (c) Obsolescence
- (d) Prevalent

Q69. Parsimonious: The evidence was constructed from very parsimonious scraps of information.

- (a) Frugal

- (b) Meager
 - (c) Thrifty
 - (d) Generous
-

Q70. Facetious: When I suggested that war is a method of controlling population, my father remarked that I was being facetious.

- (a) Serious
 - (b) Jocular
 - (c) Flippant
 - (d) Joking
-

Directions for questions 71 to 100: Each of the six passages given below is followed by questions. Choose the best answer for each question.

Passage – 1

The Union Government's present position vis-a-vis the upcoming United Nations conference on racial and related discrimination world-wide seems to be the following: discuss race please, not caste; caste is our very own and not at all as bad as you think. The gross hypocrisy of that position has been lucidly underscored by *Kancha Ilaiah*. Explicitly, the world community is to be cheated out of considering the matter on the technicality that caste is not, as a concept, tantamount to a racial category. Internally, however, allowing the issue to be put on agenda at the said conference would, we are patriotically admonished, damage the country's image. Somehow, India's virtual beliefs elbow out concrete actualities. Inverted representations, as we know, have often been deployed in human histories as balm for the forsaken — religion being the most persistent of such inversions. Yet, we would humbly submit that if globalising our markets is thought as good for the 'national' pocket, globalising our social inequities might not be so bad for the mass of our people. After all, racism was as uniquely institutionalised in South Africa as caste discrimination has been within our society; why then can't we permit the world community to express itself on the latter with a fraction of the zeal with which, through the years, we pronounced on the former?

As to the technicality about whether or not caste is admissible into an agenda about race (that the conference is also about 'related discriminations' tends to be forgotten), a reputed sociologist has recently argued that where race is a 'biological' category caste is a 'social' one. Having earlier fiercely opposed implementation of the Mandal Commission Report, the said sociologist is at least to be complimented now for admitting, however tangentially, that caste discrimination is a reality, although, in his view, incompatible with racial discrimination. One would like quickly to offer the hypothesis that biology, in important ways that affect the lives of many millions, is in itself perhaps a social construction. But let us look at the matter in another way.

If it is agreed — as per the position today at which anthropological and allied scientific determinations rest — that the entire race of *homo sapiens* derived from an originary black

African female (called 'Eve'), then one is hard put to understand how, on some subsequent ground, ontological distinctions are to be drawn either between races or castes. Let us also underline the distinction between the supposition that we are all god's children and the rather more substantiated argument about our descent from 'Eve', lest both positions are thought to be equally diversionary. It then stands to reason that all subsequent distinctions are, in modern parlance, 'constructed' ones, and like all ideological constructions, attributable to changing equations between knowledge and power among human communities through contested histories here, there, and elsewhere.

This line of thought receives, thankfully, extremely consequential buttress from the findings of the Human Genome project. Contrary to earlier (chiefly 19th-century colonial) persuasions on the subject of race, as well as, one might add, the somewhat infamous Jensen offerings in the 20th century from America, those findings deny genetic difference between 'races'. If anything, they suggest that environmental factors impinge on gene-function, as a dialectic seems to unfold between nature and culture. It would thus seem that 'biology' as the constitution of pigmentation enters the picture first only as a part of that dialectic. Taken together, the originary mother stipulation and the Genome findings ought indeed to furnish ground for human equality across the board, as well as yield policy initiatives towards equitable material dispensations aimed at building a global order where, in Hegel's stirring formulation, only the rational constitutes the right. Such, sadly, is not the case as everyday fresh arbitrary grounds for discrimination are constructed in the interests of sectional dominance.

Q71. When the author writes 'globalising our social inequities', the reference is to:

- (a) taking the issue of caste discrimination to an international forum.
- (b) dealing with internal poverty through the economic benefits of globalisation.
- (c) allowing the world community to examine the uniqueness of caste discrimination.
- (d) achieving disadvantaged people's empowerment, globally.

Q72. According to the author, 'inverted representations as balm for the forsaken':

- (a) is a balm that is no longer available to the forsaken.
- (b) is a representation that is there for all, but used by the forsaken.
- (c) is a representation of the forsaken that inverts their real-life subordinate status.
- (d) is a representation of the forsaken that is generally deployed by the forsaken.

Q73. The author mentions the Human Genome Project to support the argument that:

- (a) all distinctions between races are constructed.
- (b) the originary black African female is the mother of all humanity.
- (c) biology is a social construction.
- (d) Hegel's formulation of the rational is the right basis for a global order.

Q74. According to the author, the sociologist who argued that race is a 'biological' category and caste is a 'social' one:

- (a) has a view that is incompatible with the findings of the Human Genome Project.
- (b) has been a fierce opponent of the Mandal Commission Report.
- (c) admits indirectly that caste-based discrimination and racial discrimination exist.
- (d) is right when he states that race and caste are not compatible categories.

Q75. The official Indian position on the issue of caste at the UN conference is that:

- (a) caste is a social issue and not a racial one.
 - (b) caste is not as bad as is being made out.
 - (c) globalising caste issues will harm the country's image.
 - (d) caste is an internal matter of India.
-

Passage – 2

Studies of the factors governing reading development in young children have achieved a remarkable degree of consensus over the past two decades. The consensus concerns the causal role of 'phonological skills in young children's reading progress. Children who have good phonological skills, or good 'phonological awareness' become good readers and good spellers. Children with poor phonological skills progress more poorly. In particular, those who have a specific phonological deficit are likely to be classified as dyslexic by the time that they are 9 or 10 years old.

Phonological skills in young children can be measured at a number of different levels. The term phonological awareness is a global one, and refers to a deficit in recognising smaller units of sound within spoken words. Development work has shown that this deficit can be at the level of syllables, of onsets and rimes, or phonemes. For example, a 4-year old child might have difficulty in recognising that a word like *valentine* has three syllables, suggesting a lack of syllabic awareness. A five-year-old might have difficulty in recognising that the odd word out in the set of words *fan, cat, mat, hat, mat* is *fan*. This task requires an awareness of the sub-syllabic units of the *onset* and the *rime*. The onset corresponds to any initial consonants in a syllable word, and the rime corresponds to the vowel and to any following consonants. Rimes correspond to rhyme in single-syllable words, and so the rime in *fan* differs from the rime in *cat, hat* and *mat*. In longer words, rime and rhyme may differ. The onsets in *val:en:tine* are /v/ and /t/, and the rimes correspond to the selling patterns 'al', 'en' and 'ine'. A six-year-old might have difficulty in recognising that *plea* and *pray* begin with the same initial sound. This is a *phonemic* judgement. Although the initial phoneme /p/ is shared between the two words, in *plea* it is part of the onset 'pl' and in *pray* it is part of the onset 'pr'.

Until children can segment the onset (or the rime), such phonemic judgements are difficult for them to make. In fact, a recent survey of different developmental studies has shown that the different levels of phonological awareness appear to emerge sequentially. The awareness of syllables, onsets, and rimes appears to merge at around the ages of 3 and 4, long before most children go to school. The awareness of phonemes, on the other hand, usually emerges at around the age of 5 or 6, when children have been taught to read for about a year. An awareness of onsets and rimes thus appears to be a precursor of reading, whereas an awareness of phonemes at every serial position in a word only appears to develop as reading is taught. The onset-rime and phonemic levels of phonological structure, however, are not distinct. Many onsets in English are single phonemes, and so are some rimes (e.g. *sea*, *go*, *zoo*). The early availability of onsets and rimes is supported by studies that have compared the development of phonological awareness of onsets, rimes, and phonemes in the same subjects using the same phonological awareness tasks. For example, a study by Treiman and Zudowski used a same/different judgement task based on the beginning or the end sounds of words. In the beginning sound task, the words either began with the same onset, as in *plea* and *plank*, or shared only the initial phoneme, as in *plea* and *pray*. In the end-sound task, the words either shared the entire rime, as in *spit* and *wit*, or shared only the final phoneme, as in *rat* and *wit*. Treiman and Zudowski showed that four- and five-year-old children found the onset-rime version of the same/different task significantly easier than the version based on phonemes. Only the six-year-olds, who had been learning to read for about a year, were able to perform both versions of the tasks with an equal level of success.

Q76. From the following statements, pick out the true statement according to the passage.

- (a) The rhyme of a word is constituted of a rime and an onset.
- (b) A mono-syllabic word can have only one rhyme but more than one rime.
- (c) A mono-syllabic word can have more than one onset.
- (d) The onset in the word *val:en:tine* are /v/ and /t/.

Q77. Which one of the following is likely to emerge last in the cognitive development of a child?

- (a) Rhyme awareness
- (b) Rime awareness
- (c) Syllabic awareness
- (d) Phonemic awareness

Q78. A phonological deficit in which of the following is likely to be classified as dyslexia?

- (a) Syllabic awareness
- (b) Onset-rime awareness
- (c) Phonemic awareness

(d) Any one or more of the above

Q79. The Treiman and Zudowski experiment found evidence to support which of the following conclusions?

- (a) At age six, reading instruction helps children perform both, the same-different judgement task equally well.
- (b) The development of onset-rime awareness precedes the development of an awareness of phonemes.
- (c) At age four to five children find the phoneme-based version of the same/different task significantly easier.
- (d) The development of onset-rime awareness is a necessary and sufficient condition for the development of an awareness of phonemes.

Q80. The single-syllable words *Rhyme* and *Rime* are constituted by the exact same set of:

- (A) rime(s)
 - (B) onset(s)
 - (C) rhyme(s)
 - (D) phoneme(s)
-
- (a) A and B
 - (b) A and C
 - (c) A, B and C
 - (d) B, C and D

Passage – 3

Billie Holiday died a few weeks ago. I have been unable until now to write about her, but since she will survive many who receive longer obituaries, a short delay in one small appreciation will not harm her or us. When she died we — the musicians, critics, all who were ever transfixed by the most heart-rending voice of the past generation — grieved bitterly. There was no reason to. Few people pursued self-destruction more whole-heartedly than she, and when the pursuit was at an end, at the age of 44, she had turned herself into a physical and artistic wreck. Some of us tried gallantly to pretend otherwise, taking comfort in the occasional moments when she still sounded like a ravaged echo of her greatness. Others had not even the heart to see and listen any more. We preferred to stay home and, if old and lucky enough to own the incomparable records of her heyday from 1937 to 1946, many of which are not even available on British LP, to recreate those coarse-textured, sinuous, sensual

and unbearable sad noises which gave her a sure corner of immortality. Her physical death called, if anything, for relief rather than sorrow. What sort of middle age would she have faced without the voice to earn money for her drinks and fixes, without the looks — and in her day she was hauntingly beautiful — to attract the men she needed, without business sense, without anything but the disinterested worship of ageing men who had heard and seen her in her glory?

And yet, irrational though it is, our grief expressed Billie Holiday's art, that of a woman for whom one must be sorry. The great blues singers, to whom she may be justly compared, played their game from strength. Lionesses, though often wounded or at bay (did not Bessie Smith call herself 'a tiger, ready to jump'?), their tragic equivalents were Cleopatra and Phaedra; Holiday's was an embittered Ophelia. She was the Puccini heroine among blues singers, or rather among jazz singers, for though she sang a cabaret version of the blues incomparably, her natural idiom was the pop song. Her unique achievement was to have twisted this into a genuine expression of the major passions by means of a total disregard of its sugary tunes, or indeed of any tune other than her own few delicately crying elongated notes, phrased like Bessie Smith or Louis Armstrong in sackcloth, sung in a thin, gritty, haunting voice whose natural mood was an unresigned and voluptuous welcome for the pains of love. Nobody has sung, or will sing, Bess's songs from *Porgy* as she did. It was this combination of bitterness and physical submission, as of someone lying still while watching his legs being amputated, which gives such a blood-curdling quality to her *Strange Fruit*, the anti-lynching poem which she turned into an unforgettable art song. Suffering was her profession; but she did not accept it.

Little need be said about her horrifying life, which she described with emotional, though hardly with factual, truth in her autobiography *Lady Sings the Blues*. After an adolescence in which self-respect was measured by a girl's insistence on picking up the coins thrown to her by clients with her hands, she was plainly beyond help. She did not lack it, for she had the flair and scrupulous honesty of John Hammond to launch her, the best musicians of the 1930s to accompany her — notably Teddy Wilson, Frankie Newton and Lester Young — the boundless devotion of all serious connoisseurs, and much public success. It was too late to arrest a career of systematic embittered self-immolation. To be born with both beauty and self-respect in the Negro ghetto of Baltimore in 1915 was too much of a handicap, even without rape at the age of 10 and drug-addiction in her teens. But, while she destroyed herself, she sang, unmelodious, profound and heartbreaking. It is impossible not to weep for her, or not to hate the world which made her what she was.

Q81. Why will Billie Holiday survive many who receive longer obituaries?

- (a) Because of her unique and immortal recordings.
- (b) Because she was not as self-destructive as some other blues exponents.
- (c) Because of her hauntingly beautiful looks.
- (d) Because her autobiography was a best-seller.

Q82. According to the author, if Billie Holiday had not died in her middle age:

- (a) she would have gone on to make a further mark.
- (b) she would have become even richer than what she was when she died.

- (c) she would have had a very difficult and painful life.
 - (d) she would have led a rather comfortable existence.
-

Q83. Which of the following statements is not representative of the author's opinion?

- (a) Billie Holiday's singing style was her own, disregarding the original tunes of songs.
 - (b) Billie Holiday's art was one of expressing the pain of love.
 - (c) Billie Holiday's life was a horrifying story of self-destruction.
 - (d) Billie Holiday accepted the suffering her profession brought.
-

Q84. According to the passage, Billie Holiday was fortunate in all but one of which of the following ways?

- (a) She was fortunate to have been launched by an honest producer.
 - (b) She was fortunate to have some of the best musicians of her time accompany her.
 - (c) She was fortunate in her physical appearance.
 - (d) She was fortunate in her ability to manage her finances.
-

Passage – 4

The narrative of *Dersu Uzala* is divided into two major sections, set in 1902, and 1907, that deal with separate expeditions which Arseniev conducts into the Ussuri region. In addition, a third time frame forms a prologue to the film. Each of the temporal frames has a different focus, and by shifting them Kurosawa is able to describe the encroachment of settlements upon the wilderness and the consequent erosion of Dersu's way of life. As the film opens, that erosion has already begun. The first image is a long shot of a huge forest, the trees piled upon one another by the effects of the telephoto lens so that the landscape becomes an abstraction and appears like a huge curtain of green. A title informs us that the year is 1910. This is as late into the century as Kurosawa will go. After this prologue, the events of the film will transpire even farther back in time and will be presented as Arseniev's recollections. The character of Dersu Uzala is the heart of the film, his life the example that Kurosawa wishes to affirm. Yet the formal organization of the film works to contain, to close, to circumscribe that life by erecting a series of obstacles around it. The film itself is circular, opening and closing by Dersu's grave, thus sealing off the character from the modern world to which Kurosawa once so desperately wanted to speak. The multiple time frames also work to maintain a separation between Dersu and the contemporary world. We must go back farther even than 1910 to discover who he was. But this narrative structure has yet another implication. It safeguards Dersu's example, inoculates it from contamination with history, and protects it from contact with the industrialised, urban world. Time is organised by the narrative into a

series of barriers, which enclose Dersu in a kind of vacuum chamber, protecting him from the social and historical dialectics that destroyed the other Kurosawa heroes. Within the film, Dersu does die, but the narrative structure attempts to immortalise him and his example, as Dersu passes from history into myth.

We see all this at work in the enormously evocative prologue. The camera tilts down to reveal felled trees littering the landscape and an abundance of construction. Roads and houses outline the settlement that is being built. Kurosawa cuts to a medium shot of Arseniev standing in the midst of the clearing, looking uncomfortable and disoriented. A man passing in a wagon asks him what he is doing, and the explorer says he is looking for a grave. The driver replies that no one has died here, the settlement is too recent. These words enunciate the temporal rupture that the film studies. It is the beginning of things (industrial society) and the end of things (the forest), the commencement of one world so young that no one has had time yet to die and the eclipse of another, in which Dersu had died. It is his grave for which the explorer searches. His passing symbolises the new order, the development that now surrounds Arseniev. The explorer says he buried his friend three years ago next to huge cedar and fir trees, but now they are all gone. The man on the wagon replies they were probably chopped down when the settlement was built, and he drives off. Arseniev walks to a barren, treeless spot next to a pile of bricks. As he moves, the camera tracks and pans to follow, revealing a line of freshly built houses and a woman hanging her laundry to dry. A distant train whistle is heard, and the sounds of construction in the clearing vie with the cries of birds and the rustle of wind in the trees. Arseniev pauses, looks around for the grave that once was, and murmurs desolately, 'Dersu'. The image now cuts farther into the past, to 1902, and the first section of the film commences, which describes Arseniev's meeting with Dersu and their friendship.

Kurosawa defines the world of the film initially upon a void, a missing presence. The grave is gone, brushed aside by a world rushing into modernism, and now the hunter exists only in Arseniev's memories. The hallucinatory dreams and visions of Dodeskaden are succeeded by nostalgic, melancholy ruminations. Yet by exploring these ruminations, the film celebrates the timelessness of Dersu's wisdom. The first section of the film has two purposes: to describe the magnificence and in human vastness of nature and to delineate the code of ethics by which Dersu lives and which permits him to survive in these conditions. When Dersu first appears, the other soldiers treat him with condescension and laughter, but Arseniev watches him closely and does not share their derisive response. Unlike them, he is capable of immediately grasping Dersu's extraordinary qualities. In camp, Kurosawa frames Arseniev by himself, sitting on the other side of the fire from his soldiers. While they sleep or joke among themselves, he writes in his diary and Kurosawa cuts in several point-of-view shots from his perspective of trees that appear animated and sinister as the fire light dances across their gnarled, leafless outlines. This reflective dimension, this sensitivity to the spirituality of nature, distinguishes him from the others and forms the basis of his receptivity to Dersu and their friendship. It makes him a fit pupil for the hunter.

Q85. How is Kurosawa able to show the erosion of Dersu's way of life?

- (a) By documenting the ebb and flow of modernisation.
- (b) By going back farther and farther in time.
- (c) By using three different time frames and shifting them.
- (d) Through his death in a distant time.

Q86. Arseniev's search for Dersu's grave:

- (a) is part of the beginning of the film.
- (b) symbolises the end of the industrial society.
- (c) is misguided since the settlement is too new.
- (d) symbolises the rediscovery of modernity.

Q87. The film celebrates Dersu's wisdom:

- (a) by exhibiting the moral vacuum of the pre-modern world.
- (b) by turning him into a mythical figure.
- (c) through hallucinatory dreams and visions.
- (d) through Arseniev's nostalgic, melancholy ruminations.

Q88. According to the author, the section of the film following the prologue:

- (a) serves to highlight the difficulties that Dersu faces that eventually kills him.
- (b) shows the difference in thinking between Arseniev and Dersu.
- (c) shows the code by which Dersu lives that allows him to survive his surroundings.
- (d) serves to criticize the lack of understanding of nature in the pre-modern era.

Q89. In the film, Kurosawa hints at Arseniev's reflective and sensitive nature:

- (a) by showing him as not being derisive towards Dersu, unlike other soldiers.
- (b) by showing him as being aloof from other soldiers.
- (c) through shots of Arseniev writing his diary, framed by trees.
- (d) All of these

Q90. According to the author, which of these statements about the film is correct?

- (a) The film's narrative structure protects its hero from the destructive forces of history.
 - (b) The film is a critique of the spiritual emptiness of the modern, industrialised world.
 - (c) The film's protagonist, Dersu, is an embodiment of Kurosawa's own heroic ideals.
 - (d) The film is a celebration of the struggles of Kurosawa's other heroes.
-

Passage – 5

Democracy rests on a tension between two different principles. There is, on the one hand, the principle of equality before the law, or, more generally, of equality, and, on the other, what may be described as the leadership principle. The first gives priority to rules and the second to persons. No matter how skilfully we contrive out schemes, there is a point beyond which the one principle cannot be promoted without some sacrifice of the other.

Alexis de Tocqueville, the great 19th-century writer on democracy, maintained that the age of democracy, whose birth he was witnessing, would also be the age of mediocrity, in saying this he was thinking primarily of a regime of equality governed by impersonal rules. Despite his strong attachment to democracy, he took great pains to point out what he believed to be its negative side: a dead level plane of achievement in practically every sphere of life. The age of democracy would, in his view, be an unheroic age; there would not be room in it for either heroes or hero-worshippers.

But modern democracies have not been able to do without heroes: this too was foreseen, with much misgiving, by Tocqueville. Tocqueville viewed this with misgiving because he believed, rightly or wrongly, that unlike in aristocratic societies there was no proper place in a democracy for heroes and, hence, when they arose they would sooner or later turn into despots. Whether they require heroes or not, democracies certainly require leaders, and, in the contemporary age, breed them in great profusion; the problem is to know what to do with them.

In a world preoccupied with scientific rationality the advantages of a system based on an impersonal rule of law should be a recommendation with everybody. There is something orderly and predictable about such a system. When life is lived mainly in small, self-contained communities, men are able to take finer personal distinctions into account in dealing with their fellow men. They are unable to do this in a large and amorphous society, and organised living would be impossible here without a system of impersonal rules. Above all, such a system guarantees a kind of equality to the extent that everybody, no matter in what station of life, is bound by the same explicit, often written, rules and nobody is above them.

But a system governed solely by impersonal rules can at best ensure order and stability; it cannot create any shining vision of a future in which mere formal equality will be replaced by real equality and fellowship. A world governed by impersonal rules cannot easily change itself, or when it does, the change is so gradual as to make the basic and fundamental feature of society appear unchanges. For any kind of basic or fundamental change, a push is needed from within, a kind of individual initiative which will create new rules, new terms and conditions of life.

The issue of leadership thus acquires crucial significance in the context of change. If the modern age is preoccupied with scientific rationality, it is no less preoccupied with change. To accept what exists on its own terms is traditional, not modern, and it may be all very well to appreciate tradition in music, dance and drama, but for society as a whole the choice has already been made in favour of modernisation and development. Moreover, in some countries the gap between ideal and reality has become so great that the argument for development and change is now irresistible.

In these countries no argument for development has greater appeal or urgency than the one which shows development to be the condition for the mitigation, if not the elimination, of inequality. There is something contradictory about the very presence of large inequalities in a society which professes to be democratic. It does not take people too long to realise that

democracy by itself can guarantee only formal equality; beyond this, it can only whet people's appetite for real or substantive equality. From this arises their continued preoccupation with plans and schemes that will help to bridge the gap between the ideal of equality and the reality which is so contrary to it.

When pre-existing rules give no clear directions of change, leadership comes into its own. Every democracy invests its leadership with a measure of charisma, and expects from it a corresponding measure of energy and vitality. Now, the greater the urge for change in a society the stronger the appeal of a dynamic leadership in it. A dynamic leadership seeks to free itself from the constraints of existing rules: in a sense that is the test of its dynamism. In this process it may take a turn at which it ceases to regard itself as being bound by these rules, placing itself above them. There is always a tension between 'charisma' and 'discipline' in the case of a democratic leadership, and when this leadership puts forward revolutionary claims, the tension tends to be resolved at the expense of discipline.

Characteristically, the legitimacy of such a leadership rests on its claim to be able to abolish or at least substantially reduce the existing inequalities in society. From the argument that formal equality or equality before the law is but a limited good, it is often one short step to the argument that it is a hindrance or an obstacle to the establishment of real or substantive equality. The conflict between a 'progressive' executive and a 'conservative' judiciary is but one aspect of this larger problem. This conflict naturally acquires added piquancy when the executive is elected and the judiciary appointed.

Q91. Dynamic leaders are needed in democracies because:

- (a) they have adopted the principles of 'formal' equality rather than 'substantive' equality.
- (b) 'formal' equality whets people's appetite for 'substantive' equality.
- (c) systems that rely on the impersonal rules of 'formal' equality lose their ability to make large changes.
- (d) of the conflict between a 'progressive' executive and a 'conservative' judiciary.

Q92. What possible factor would a dynamic leader consider a 'hindrance' in achieving the development goals of a nation?

- (a) Principle of equality before the law
- (b) Judicial activism
- (c) A conservative judiciary
- (d) Need for discipline

Q93. Which of the following four statements can be inferred from the above passage?

- A. Scientific rationality is an essential feature of modernity.
- B. Scientific rationality results in the development of impersonal rules.
- C. Modernisation and development have been chosen over traditional music, dance and drama.
- D. Democracies aspire to achieve substantive equality.

- (a) A, B, D but not C

- (b) A, B but not C, D
 - (c) A, D but not B, C
 - (d) A, B, C but not D
-

Q94. Tocqueville believed that the age of democracy would be an un-heroic age because:

- (a) he believed that democracy was a regime of equality governed by impersonal rules.
 - (b) there is no urgency for development in democratic countries.
 - (c) heroes that emerged in democracies would turn into despots.
 - (d) aristocratic society had a greater ability to produce heroes.
-

Q95. A key argument the author is making is that:

- (a) the tension between equality and leadership is a sign of a healthy democracy.
 - (b) democracy is incapable of eradicating inequality completely.
 - (c) formal equality, while important, is insufficient to bring about substantive social change.
 - (d) impersonal rules are good for avoiding instability but fall short of achieving real equality.
-

Q96. Which of the following four statements can be inferred from the above passage?

- A. There is conflict between the pursuit of equality and individuality.
 - B. The disadvantages of impersonal rules can be overcome in small communities.
 - C. Despite limitations, impersonal rules are essential in large systems.
 - D. Inspired leadership, rather than plans and schemes, is more effective in bridging inequality.
- (a) A, C and D but not B
 - (b) A, B and C but not D
 - (c) A, D but not B, C
 - (d) A, C but not B, D
-

Passage – 6

In the modern scientific story, light was created not once but twice. The first time was in the Big Bang, when the universe began its existence as a glowing, expanding, fireball, which cooled off into darkness after a few million years. The second time was hundreds of millions of years later, when the cold material condensed into dense clumps under the influence of gravity, and ignited to become the first stars.

Sir Martin Rees, Britain's astronomer royal, named the long interval between these two enlightenments the cosmic 'Dark Age'. The name describes not only the poorly lit conditions, but also the ignorance of astronomers about that period. Nobody knows exactly when the first stars formed, or how they organised themselves into galaxies — or even whether stars were the first luminous objects. They may have been preceded by quasars, which are mysterious, bright spots found at the centres of some galaxies.

Now two independent groups of astronomers, one led by Robert Becker of the University of California, Davis, and the other by George Djorgovski of the Caltech, claim to have peered far enough into space with their telescopes (and therefore backwards enough in time) to observe the closing days of the Dark age.

The main problem that plagued previous efforts to study the Dark Age was not the lack of suitable telescopes, but rather the lack of suitable things at which to point them. Because these events took place over 13 billion years ago, if astronomers are to have any hope of unravelling them they must study objects that are at least 13 billion light years away. The best prospects are quasars, because they are so bright and compact that they can be seen across vast stretches of space. The energy source that powers a quasar is unknown, although it is suspected to be the intense gravity of a giant black hole. However, at the distances required for the study of Dark Age, even quasars are extremely rare and faint.

Recently some members of Dr Becker's team announced their discovery of the four most distant quasars known. All the new quasars are terribly faint, a challenge that both teams overcame by peering at them through one of the twin Keck telescopes in Hawaii. These are the world's largest, and can therefore collect the most light. The new work by Dr Becker's team analysed the light from all four quasars. Three of them appeared to be similar to ordinary, less distant quasars. However, the fourth and most distant, unlike any other quasar ever seen, showed unmistakable signs of being shrouded in a fog because new-born stars and quasars emit mainly ultraviolet light, and hydrogen gas is opaque to ultraviolet. Seeing this fog had been the goal of would-be Dark Age astronomers since 1965, when James Gunn and Bruce Peterson spelled out the technique for using quasars as backlighting beacons to observe the fog's ultraviolet shadow.

The fog prolonged the period of darkness until the heat from the first stars and quasars had the chance to ionise the hydrogen (breaking it into its constituent parts, protons and electrons). Ionised hydrogen is transparent to ultraviolet radiation, so at that moment the fog lifted and the universe became the well-lit place it is today. For this reason, the end of the Dark Age is called the 'Epoch of Re-ionisation'. Because the ultraviolet shadow is visible only in the most distant of the four quasars, Dr Becker's team concluded that the fog had dissipated completely by the time the universe was about 900 million years old, and one-seventh of its current size.

Q97. In the passage, the Dark Age refers to:

- (a) the period when the universe became cold after the Big Bang.
- (b) a period about which astronomers know very little.
- (c) the medieval period when cultural activity seemed to have come to an end.
- (d) the time that the universe took to heat up after the Big Bang.

Q98. Astronomers find it difficult to study the Dark Age because:

- (a) suitable telescopes are few.
 - (b) the associated events took place billions of years ago.
 - (c) the energy source that powers a quasar is unknown.
 - (d) their best chance is to study quasars, which are extremely rare and faint at those distances.
-

Q99. The four most distant quasars discovered recently:

- (a) could only be seen with the help of the world's largest telescopes.
 - (b) appear to be similar to other ordinary, quasars.
 - (c) all appear to be shrouded in a fog of hydrogen gas.
 - (d) have been sought by would-be Dark Age astronomers since 1965.
-

Q100. The fog of hydrogen gas seen through the telescopes:

- (a) is opaque to ultraviolet light when it is ionised.
 - (b) was lifted after heat from stars and quasars ionised it.
 - (c) is the material which condensed to form the first stars.
 - (d) was what made the Dark Age dark.
-

Section III

Directions for questions 101 to 104: Answer the questions based on the table given below.

The following table describes garments manufactured based upon the colour and size for each lay. There are four sizes: M – medium, L – large, XL – extra large and XXL – extra extra large. There are three colours: yellow, red and white.

Lay No.	Yellow				Red				White			
	M	L	XL	XXL	M	L	XL	XXL	M	L	XL	XXL
1	14	14	7	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	42	42	21	0
3	20	20	10	0	18	18	9	0	0	0	0	0
4	20	20	10	0	0	0	0	0	30	30	15	0
5	0	0	0	0	24	24	12	0	30	30	15	0
6	22	22	11	0	24	24	12	0	32	32	16	0
7	0	24	24	12	0	0	0	0	0	0	0	0
8	0	20	20	10	0	2	2	1	0	0	0	0
9	0	20	20	10	0	0	0	0	22	22	11	0
10	0	0	0	0	26	26	13	0	20	20	10	0
11	20	22	22	11	26	26	13	0	22	22	11	0
12	0	0	2	2	0	0	0	0	0	20	0	0
13	0	0	0	0	0	0	0	0	20	20	20	0
14	0	0	0	0	0	0	0	0	22	22	22	0
15	0	0	10	10	0	2	2	0	22	22	22	0
16	0	0	0	0	5	5	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	32	32	0	0	0	0	0	0
19	0	0	0	0	0	32	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	18	0	0	0	0	0	0	0	0
22	0	0	0	0	26	26	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	22
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	8	0	0	0	0	0	0	0	12
26	0	0	0	8	0	0	0	0	0	0	0	14
27	0	0	0	8	0	0	0	0	0	0	0	12
Production	96	162	136	97	197	194	89	1	238	198	155	60
Order	95	162	135	97	197	194	89	1	238	197	155	59
Surplus	1	0	1	0	0	0	0	0	0	1	0	1

(Note: The totals in the original table were incorrect and have been recalculated for consistency.)

Q101. How many lays are used to produce yellow fabrics?

- (a) 10
- (b) 11
- (c) 12
- (d) 14

Q102. How many lays are used to produce XXL fabrics?

- (a) 7
- (b) 8

- (c) 9
(d) 10

Q103. How many lays are used to produce XL yellow or XL white fabrics?

- (a) 8
(b) 9
(c) 10
(d) 11

Q104. How many varieties of fabrics (a specific color and size combination) have been produced in surplus (production > order)?

- (a) 3
(b) 4
(c) 5
(d) 6

Directions for questions 105 to 108: Answer the questions based on the table given below concerning the busiest 20 international airports in the world.

No.	Name	International Airport Type	Code	Location
1	Hartsfield	A	ATL	Atlanta, Georgia, USA
2	Chicago-O'Hare	A	ORD	Chicago, Illinois, USA
3	Los Angeles	A	LAX	Los Angeles, California, USA
4	Heathrow Airport	E	LHR	London, United Kingdom
5	DFW	A	DFW	Dallas/Ft. Worth, Texas, USA
6	Haneda Airport	F	HND	Tokyo, Japan
7	Frankfurt Airport	E	FRA	Frankfurt, Germany
8	Roissy-Charles de Gaulle	E	CDG	Paris, France
9	San Francisco	A	SFO	San Francisco, California, USA
10	Denver	A	DIA	Denver, Colorado, USA
11	Amsterdam Schiphol	E	AMS	Amsterdam, Netherlands
12	Minneapolis - St. Paul	A	MSP	Minneapolis-St. Paul, USA
13	Detroit Metropolitan	A	DTW	Detroit, Michigan, USA
14	Miami	A	MIA	Miami, Florida, USA
15	Newark	A	EWB	Newark, New Jersey, USA
16	McCarran	A	LAS	Las Vegas, Nevada, USA
17	Phoenix Sky Harbor	A	PHX	Phoenix, Arizona, USA
18	Kimpo	FE	SEL	Seoul, Korea
19	George Bush	A	IAH	Houston, Texas, USA
20	John F. Kennedy	A	JFK	New York, New York, USA

Q105. How many international airports of type ‘A’ account for more than 40 million passengers?

- (a) 4
 - (b) 5
 - (c) 6
 - (d) 7
-

Q106. What percentage of the top ten busiest airports is in the United States of America?

- (a) 60%
 - (b) 80%
 - (c) 70%
 - (d) 90%
-

Q107. Of the five busiest airports, roughly, what percentage of passengers is handled by Heathrow Airport?

- (a) 30
 - (b) 40
 - (c) 20
 - (d) 50
-

Q108. How many international airports not located in the USA handle more than 30 million passengers?

- (a) 5
 - (b) 6
 - (c) 10
 - (d) 14
-

Directions for questions 109 to 114: Answer the questions based on the two graphs shown below.

Figure 1 shows the amount of work distribution, in man-hours, for a software company between offshore and onsite activities. Figure 2 shows the estimated and actual work effort involved in the different offshore activities in the same company during the same period.

[Note: Onsite refers to work performed at the customer’s premise and offshore refers to work performed at the developer’s premise.]

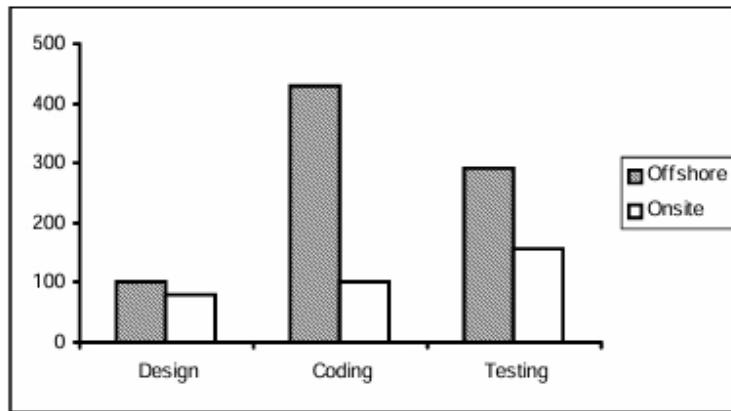


Figure 1

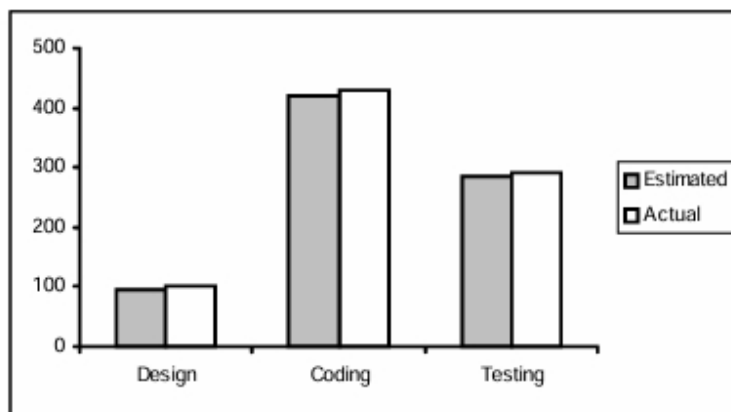


Figure 2

Q109. Which activity, including both offshore and onsite work, requires the most man-hours?

- (a) Offshore, design and coding
- (b) Coding
- (c) Testing
- (d) Design

Q110. Roughly, what percentage of the total work is carried out onsite?

- (a) 40%
- (b) 20%
- (c) 30%
- (d) 10%

Q111. The total effort in man-hours spent onsite is nearest to which of the following?

- (a) The actual man-hours of offshore testing.

- (b) The estimated man-hours of offshore coding.
- (c) The actual man-hours of offshore design.
- (d) The sum of estimated and actual effort for offshore specification.

Q112. The actual effort in man-hours for each offshore activity is more than the estimated effort by approximately what percentage for coding and testing respectively?

- (a) 20% and 20%
- (b) -20% and 10%
- (c) 10% and 20%
- (d) 10% and -20%

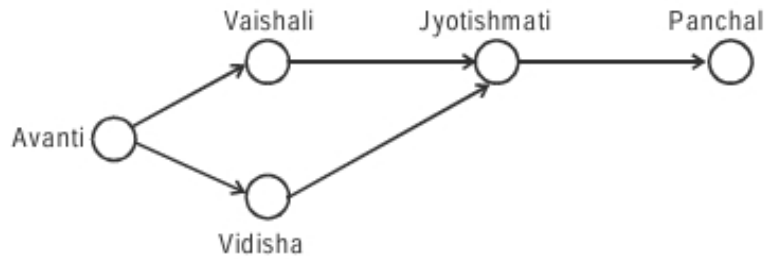
Q113. If 50% of the offshore work were to be carried out onsite, with the distribution of effort between the tasks remaining the same, the proportion of total work carried out offshore would be:

- (a) 40%
- (b) 37%
- (c) 50%
- (d) 70%

Q114. If 50% of the offshore work were to be carried out onsite, with the distribution of effort between the tasks remaining the same, which of the following is true of the work carried out onsite?

- (a) The amount of coding done onsite is greater than that of testing done onsite.
- (b) The amount of coding done onsite is less than that of design done onsite.
- (c) The amount of design carried out onsite is greater than that of testing.
- (d) The amount of testing carried out onsite is greater than the total of design and coding done onsite.

Directions for questions 115 to 117: Answer the questions based on the pipeline diagram below. The following sketch shows the pipelines carrying material from one location to another. Each location has a demand for material. The demand at Vaishali is 400, at Jyotishmati is 400, at Panchal is 700, and at Vidisha is 200. Each arrow indicates the direction of material flow through the pipeline. The flow from Vaishali to Jyotishmati is 300. The quantity of material flow is such that the demands at all these locations are exactly met. The capacity of each pipeline is 1,000.



Q115. The quantity moved from Avanti to Vidisha is:

- (a) 200
- (b) 800
- (c) 700
- (d) 1,000

Q116. What is the total flow from Avanti?

- (a) 1400
- (b) 1700
- (c) 1600
- (d) 1500

Directions for questions 117 to 120: In each of the questions below, four different ways of writing a sentence are indicated. Choose the best way of writing the sentence.

Q117. A. The main problem with the notion of price discrimination is that it is not always a bad thing, but that it is the monopolist who has the power to decide who is charged what price.

B. The main problem with the notion of price discrimination is not that it is always a bad thing, it is the monopolist who has the power to decide who is charged what price.

C. The main problem with the notion of price discrimination is not that it is always a bad thing, but that it is the monopolist who has the power to decide who is charged what price.

D. The main problem with the notion of price discrimination is not it is always a bad thing, but that it is the monopolist who has the power to decide who is charged what price.

- (1) A
- (2) B
- (3) C
- (4) D

Q118. A. A symbiotic relationship develops among the contractors, bureaucracy and the politicians, and by a large number of devices costs are artificially escalated and black money is generated by underhand deals.

B. A symbiotic relationship develops among contractors, bureaucracy and politicians, and costs are artificially escalated with a large number of devices and black money is generated through underhand deals.

C. A symbiotic relationship develops among contractors, bureaucracy and the politicians, and by a large number of devices costs are artificially escalated and black money is generated on underhand deals.

D. A symbiotic relationship develops among the contractors, bureaucracy and politicians, and by a large number of devices costs are artificially escalated and black money is generated by underhand deals.

- (1) A
- (2) B
- (3) C
- (4) D

Q119. A. The distinctive feature of tariffs and export subsidies is that they create difference of prices at which goods are traded on the world market and their price within a local market.

B. The distinctive feature of tariffs and export subsidies is that they create a difference of prices at which goods are traded with the world market and their prices in the local market.

C. The distinctive feature of tariffs and export subsidies is that they create a difference between prices at which goods are traded on the world market and their prices within a local market.

D. The distinctive feature of tariffs and export subsidies is that they create a difference across prices at which goods are traded with the world market and their prices within a local market.

- (1) A
- (2) B
- (3) C
- (4) D

Q120. A. Any action of government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourage excessive hedging.

B. Any action by government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourage excessive gambling.

C. Any action by government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourages excessive gambling.

D. Any action of government to reduce the systemic risk inherent in financial markets will also reduce the risks that private operators perceive and thereby encourages excessive gambling.

- (1) A
- (2) B
- (3) C
- (4) D

Directions for questions 121 to 125: For each of the words below a context is provided. From the alternatives given pick the word or phrase that is closest in meaning in the given context.

Q121. Opprobrium: The police officer appears oblivious to the opprobrium generated by his blatantly partisan conduct.

- (1) Harsh criticism
- (2) Acute distrust
- (3) Bitter enmity
- (4) Stark oppressiveness

Q122. Portend: It appears to many that the US ‘war on terrorism’ portends trouble in the Gulf.

- (1) Introduces
- (2) Evokes
- (3) Spells
- (4) Bodes

Q123. Prevaricate: When a videotape of her meeting was played back to her and she was asked to explain her presence there, she started prevaricating.

- (1) Speaking evasively
 - (2) Speaking violently
 - (3) Lying furiously
 - (4) Throwing a tantrum
-

Q124. Restive: The crowd became restive when the minister failed to appear even by 10 pm.

- (1) Violent
- (2) Angry
- (3) Restless
- (4) Distressed

Q125. Ostensible: Manohar's ostensible job was to guard the building at night.

- (1) Apparent
- (2) Blatant
- (3) Ostentatious
- (4) Insidious

Directions for question 126: Answer the question on the basis of the following information. A square is inscribed in a circle. What is the difference between the area of the circle and that of the square?

- I. The diameter of the circle is $25\sqrt{2}$ cm.
- II. The side of the square is 25 cm.

- (a) if the question can be answered by one of the statements alone and not by the other.
- (b) if the question can be answered by using either statement alone.
- (c) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.
- (d) if the question cannot be answered even by using both statements together.

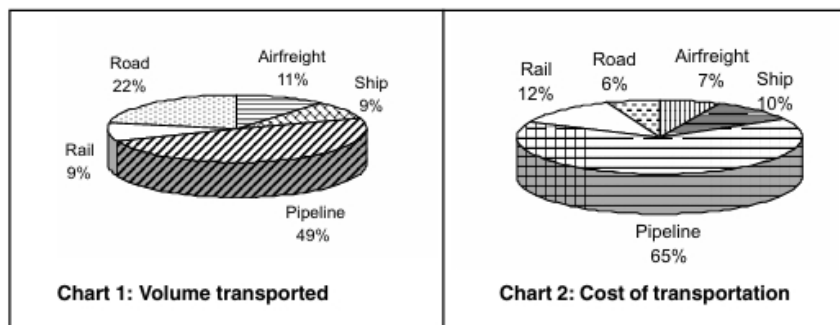
Q127. Two friends, Ram and Gopal, bought apples from a wholesale dealer. How many apples did they buy in total? (Note: question rephrased for clarity)

- I. Ram bought one-half the number of apples that Gopal bought.
- II. The wholesale dealer had a stock of 500 apples.

- (a) if the question can be answered by one of the statements alone and not by the other.
- (b) if the question can be answered by using either statement alone.
- (c) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.
- (d) if the question cannot be answered even by using both statements together.

Directions for questions 128 to 130: Answer the questions based on the pie charts given below. Chart 1 shows the distribution of 12 million tonnes of crude oil transported through

different modes over a specific period of time. Chart 2 shows the distribution of the cost of transporting this crude oil. The total cost was Rs. 30 million.



Q128. What is the cost in rupees per tonne for transporting crude oil by rail?
(Note: question clarified).

- (a) Rs. 3.33
- (b) Rs. 1.50
- (c) Rs. 4.50
- (d) Rs. 2.78

Q129. From the charts given, it appears that the cheapest mode of transport per tonne is:

- (a) Road
- (b) Rail
- (c) Pipeline
- (d) Ship

Q130. If the costs per tonne of transport by ship, air and road are represented by P, Q and R respectively, which of the following is true?

- (a) $R > Q > P$
- (b) $P > R > Q$
- (c) $P > Q > R$
- (d) $R > P > Q$

Directions for questions 131 to 134: Answer the questions independently.

Q131. At a village mela, the following six nautankis (plays) are scheduled as shown in the table below:

No.	Nautanki	Duration	Show Times
1	Sati Savitri	1 hr	9 a.m. and 2 p.m.
2	Joru ka Ghulam	1 hr	10.30 a.m. and 11:30 a.m.
3	Sundar Kand	30 min	10 a.m. and 11 a.m.
4	Veer Abhimanyu	1 hr	10 a.m. and 11 a.m.
5	Reshma aur Shera	1 hr	9.30 a.m., 12 noon and 2 p.m.
6	Jhansi ki Rani	30 min	11 a.m. and 1:30 p.m.

You wish to see all six nautankis and ensure a lunch break from 12.30 p.m. to 1.30 p.m. Which of the following ways can you do this?

- (a) Sati Savitri is viewed first; Sundar Kand is viewed third, and Jhansi ki Rani is viewed last
- (b) Sati Savitri is viewed last; Veer Abhimanyu is viewed third, and Reshma aur Shera is viewed first
- (c) Sati Savitri is viewed first; Sundar Kand is viewed third, and Joru ka Ghulam is viewed fourth
- (d) Veer Abhimanyu is viewed third; Reshma aur Shera is viewed fourth, and Jhansi ki Rani is viewed fifth

Q132. Mrs Ranga has three children and has difficulty remembering their ages and months of their birth. The clue below may help her remember.

- The boy, who was born in June, is 7 years old.
- One of the children is 4 years old but it was not Anshuman.
- Vaibhav is older than Suprita.
- One of the children was born in September, but it was not Vaibhav.
- Suprita's birthday is in April.
- The youngest child is only 2 years old.

Based on the above clues, which statement is true?

- (a) Vaibhav is the oldest, followed by Anshuman (born in September), youngest is Suprita (born in April)
- (b) Anshuman is the oldest (born in June), followed by Suprita (4-year-old), youngest is Vaibhav (2-year-old)
- (c) Vaibhav is the oldest (7-year-old, born in April), followed by Suprita, youngest is Anshuman (born in September)
- (d) Anshuman is the oldest, born in June; Vaibhav is 4, born in September; Suprita is 2, born in April.

Q133. The Bannerjees, the Sharmas, and the Pattabhiramans each have a tradition of eating Sunday lunch as a family. Each family serves a special meal at a certain time of day. Each family has a particular set of chinaware used for this meal. Use the clues below to answer the following question.

- Sharma family eats at noon (12:00 PM).
- The family that serves fried brinjal uses blue chinaware.

- The Bannerjees eat at 2 p.m.
- The family that serves sambar does not use red chinaware.
- The family that eats at 1 p.m. serves fried brinjal.
- The Pattabhiramans do not use white chinaware.
- The family eating last likes makkai-ki-roti.

Which one of the following statements is true?

- (a) Bannerjees eat makkai-ki-roti at 2 p.m., Sharmas eat fried brinjal at 12 o'clock, Pattabhiramans eat sambar from red chinaware
 - (b) Sharmas eat sambar in white chinaware, Pattabhiramans eat fried brinjal at 1 o'clock, Bannerjees eat makkai-ki-roti in blue chinaware
 - (c) Sharmas eat sambar at noon in white chinaware, Pattabhiramans eat fried brinjal in blue chinaware, Bannerjees eat makkai-ki-roti in red chinaware
 - (d) Bannerjees eat makkai-ki-roti in white chinaware, Sharmas eat fried brinjal at 1 o'clock, Pattabhiramans eat sambar from red chinaware
-

Q134. While Balbir had his back turned, a dog ran into his butcher shop, snatched a piece of meat off the counter and ran out. Balbir was mad when he realised what had happened. He asked three other shopkeepers, who had seen the dog, to describe it. The shopkeepers really did not want to help Balbir. So each of them made a statement which contained one truth and one lie.

1. Shopkeeper 1: "The dog had black hair and a long tail."
2. Shopkeeper 2: "The dog had a short tail and wore a collar."
3. Shopkeeper 3: "The dog had white hair and no collar."

Based on the above statements, which of the following could be a correct description?

- (a) The dog had white hair, short tail and no collar
 - (b) The dog had black hair, long tail and a collar
 - (c) The dog had white hair, long tail and a collar
 - (d) The dog had black hair, long tail and no collar
-

Directions for questions 135 and 136: Answer the following questions based on the information given below.

Elle is three times older than Yogesh. Zaheer is half the age of Wahida. Yogesh is older than Zaheer.

Q135. Which of the following can be inferred?

- (a) Yogesh is older than Wahida
 - (b) Elle is older than Wahida
 - (c) Elle may be younger than Wahida
 - (d) None of these
-

Q136. Which of the following information will be sufficient to estimate Elle's age?

- (a) Zaheer is 10-year-old
- (b) Both Yogesh and Wahida are older than Zaheer by the same number of years
- (c) Both (a) and (b)
- (d) None of these

Directions for questions 137 to 139: Answer the questions based on the passage below.
A group of three or four has to be selected from seven persons. Among the seven are two women: Fiza and Kavita, and five men: Ram, Shyam, David, Peter and Rahim.

- Rule 1: Ram and Shyam cannot be together ($R \implies \neg S$).
- Rule 2: Shyam and Rahim must be together ($S \iff Rh$).
- Rule 3: Kavita requires David ($K \implies D$).
- Rule 4: David and Peter cannot be together ($D \implies \neg P$).
- Rule 5: Ram requires Peter ($R \implies P$).
- Rule 6: David requires Fiza ($D \implies F$).

Q137. Which of the following is a feasible group of three?

- (a) David, Ram and Rahim
- (b) Peter, Shyam and Rahim
- (c) Kavita, David and Shyam
- (d) Fiza, David and Ram

Q138. Which of the following is a feasible group of four?

- (a) Ram, Peter, Fiza and Rahim
- (b) Shyam, Rahim, Kavita and David
- (c) Shyam, Rahim, Fiza and David
- (d) Fiza, David, Ram and Peter

Q139. Which of the following statements is true?

- (a) A group of four can have Ram and Kavita.
- (b) A group of four can have two women.
- (c) A group of four can have all men except Ram.
- (d) A group of four can have Peter and Shyam.

Directions for questions 140 to 146: Answer the questions independently.

Q140. On her walk through the park, Hamsa collected 50 coloured leaves, all either maple or oak. She sorted them by category when she got home, and found the following:

- The number of red oak leaves with spots (ROS) is even and positive.
- The number of red oak leaves without any spot (RO) equals the number of red maple leaves without spots (RM).
- All non-red oak leaves have spots (NROS), and there are five times as many of them as there are red spotted oak leaves.
- There are no spotted maple leaves that are not red. (This means all spotted maple leaves are red).
- There are exactly 6 red spotted maple leaves ($RMS = 6$).
- There are exactly 22 maple leaves that are neither spotted nor red. (This means non-red, unspotted maple leaves = 22, let's call this NM).

How many oak leaves did she collect?

Q141. Eight people (A, B, C, D, E, F, G, H) are going for a picnic on 4 motorcycles (M1, M2, M3, M4). They have 4 food baskets (O, P, Q, R) that must be carried on M1, M2, M3, and M4 respectively. No more than 2 people per motorcycle. There are 2 husband-wife pairs who must ride together. C cannot travel with A or B. E cannot travel with B or F. G cannot travel with F, H, or D. The husband-wife pairs must carry baskets O and P. Q is with A. P is with D. F travels on M1. E travels on M2. G is with Q. B cannot go with R. Who is travelling with H?

Q142. In a family gathering there are 2 males who are grandfathers and 4 males who are fathers... What is the minimum number of people present in this gathering?

Q143. I have a total of Rs. 1,000. Item prices: A=110, B=90, C=70, D=40, E=45. For every D, I must buy two of B. For every A, I must buy one of C. For every E, I must buy two D and one B. For every item purchased I earn 1,000 points. For every rupee not spent I lose 1,500 points. My objective is to maximise the points. What is the number of items that I must purchase to maximise my points?

Q144. Four friends Ashok, Bashir, Chirag and Deepak are out for shopping... What is the costliest item that Deepak could buy with his own money?

Q145. In a ‘keep-fit’ gymnasium class there are 15 females... Who is the instructor of Radha?

Q146. A king has unflinching loyalty from eight of his ministers M1 to M8, but he has to select only four to make a cabinet committee. He decides to choose these four such that each selected person shares a liking with at least one of the other three selected. The selected persons must also hate at least one of the likings of any of the other three persons selected.

Likes/Hates Data: M1(F,S; H:G), M2(S,D; H:F), M3(G; H:S), M4(M; H:D), M5(D; H:S,M), M6(F; H:S,M), M7(G,M; H:F), M8(S,G; H:M). Which of the following is a valid committee?

Directions for questions 147 to 150: Answer the questions based on the following information.

A and B are two sets. The intersection, elements belonging to both sets, is given by $A \cap B$. The union, elements belonging to either A or B or both, is indicated by $A \cup B$. A null set is ϕ . Let ‘V’ be vertebrates, ‘M’ mammals, ‘D’ dogs, ‘F’ fish, ‘A’ alsatian dogs, and ‘P’ a specific dog named Pluto.

Q147. Given $X = M \cap D$ and $X = D$. Which of the following is true?

- (a) All dogs are mammals
 - (b) Some dogs are mammals
 - (c) $X = \phi$
 - (d) All mammals are dogs
-

Q148. If $Y = F \cap (D \cup V)$ is not a null set, it implies that:

- (a) All fish are vertebrates
 - (b) All dogs are vertebrates
 - (c) Some fish are dogs
 - (d) None of these
-

Q149. If $Z = (P \cap D) \cup M$, then:

- (a) The elements of Z consist of Pluto, the dog, or any other mammal
- (b) Z implies any dog or mammal
- (c) Z implies Pluto or any dog that is a mammal

(d) Z is a null set

Q150. If $A \cap P = \phi$ and $A \cup P = D$, then which of the following is true? (Note: original question had P intersect A, and P union A).

- (a) Pluto and Alsatians are dogs
 - (b) Pluto is an Alsatian
 - (c) Pluto is not an Alsatian
 - (d) D consists of only Pluto and Alsatians
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