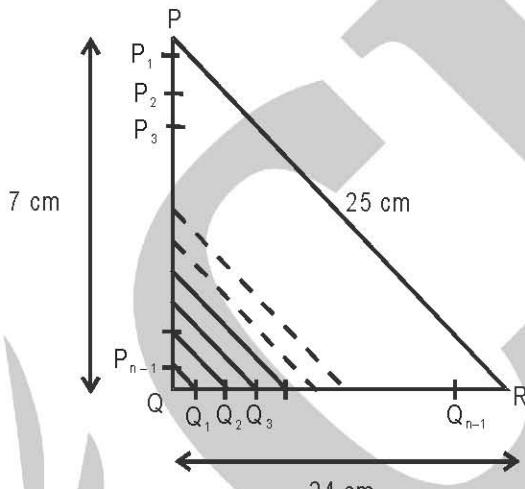


Unproctored Mock-10 2014

Section – I

1. In the figure given below, PQR is a triangle where $PQ = 7 \text{ cm}$, $QR = 24 \text{ cm}$ and $PR = 25 \text{ cm}$. The sides PQ and QR are divided into ' n ' equal parts by taking ' $n - 1$ ' equally spaced points on them as shown in the figure. P_{n-1} is joined with Q_1 , P_{n-2} is joined with Q_2 , and so on. For what value of ' n ' will the sum of the lengths of the resulting line segments be 200 cm ?



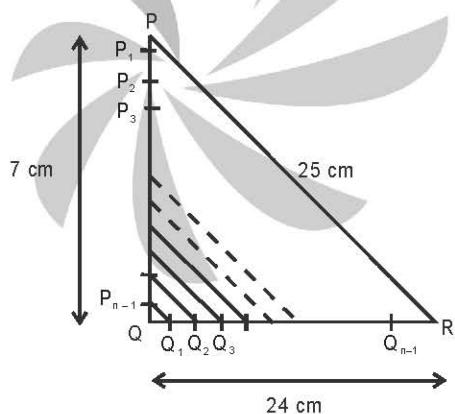
(a) 15

(b) 16

(c) 17

(d) 18

1. c



$$\Delta P_{n-1}QQ_1 \sim \Delta PQR$$

$$\therefore \frac{P_{n-1}Q}{PQ} = \frac{QQ_1}{QR} = \frac{P_{n-1}Q_1}{PR} = \frac{1}{n}$$

$$\Rightarrow P_{n-1}Q_1 = \frac{25}{n}$$

Similarly, $P_{n-2}Q_2 = \frac{25 \times 2}{n}$ and so on...

$$\Rightarrow \frac{25}{n} + \frac{25 \times 2}{n} + \frac{25 \times 3}{n} + \dots + \frac{25(n-1)}{n} = 200$$

$$\Rightarrow \frac{25}{n}(1+2+3+\dots+n-1) = 200$$

$$\Rightarrow \frac{(n-1)(n)}{2n} = 8 \Rightarrow n = 17.$$

2. If $\frac{(x^3 - 5x^2 + 7x - 3)(x^3 - 5x^2 + 8x - 4)}{(x - 2 - x^2)(x^2 - 3x + 2)(x^2 + 3x + 4)} \geq 0$, where x is a real number, then which of the following is correct?

- (a) $x \in [-\infty, 1] \cup [2, 3]$ (b) $x \in [1, 2] \cup [3, \infty)$ (c) $x \in [2, 3]$ (d) **None of these**

$$2. d \quad \frac{(x^3 - 5x^2 + 7x - 3)(x^3 - 5x^2 + 8x - 4)}{(x - 2 - x^2)(x^2 - 3x + 2)(x^2 + 3x + 4)} \geq 0$$

$$\Rightarrow \frac{\{(x-1)^2(x-3)\}\{(x-2)^2(x-1)\}}{(x-2-x^2)(x-1)(x-2)(x^2+3x+4)} \geq 0$$

$$\Rightarrow \frac{(x-1)^3(x-2)^2(x-3)}{(x-2-x^2)(x-1)(x-2)(x^2+3x+4)} \geq 0$$

$$\Rightarrow \frac{(x-1)^2(x-2)(x-3)}{(x^2+2-x)(x^2+3x+4)} \leq 0$$

As the Discriminant of both $x^2 + 2 - x$ and $x^2 + 3x + 4$ is negative, it can be concluded that the denominator of the above inequality is greater than zero for all real values of x .

So the inequality reduces to

$$\Rightarrow (x-2)(x-3) \leq 0, \text{ where } x \text{ cannot be equal to } 2.$$

$$\Rightarrow x \in (2, 3]$$

(a) 56

(b) 64

(S) 72

(d) None of these

3. a The number of ways of selecting three books = ${}^{10}C_3 = 120$
 The number of ways of selecting two books lying adjacently = 9
 The number of ways of selecting the third book such that exactly two books are lying adjacently = $7 \times 2 + 6 \times 7 = 56$
 The number of ways of selecting three books lying adjacently = 8
 So the required number of ways = $120 - 56 - 8 = 56$

4. If $x\Delta(y+1) = y\Delta(x+1)$, $x\Delta x = 1$ and $(x-y)\Delta(x+y) = x\Delta y$, then what is the value of $1001\Delta 1$?
 (a) 1000 (b) 100 (c) 10 (d) 1

4. d Three operations have been given:

$$(i) x \Delta (y + 1) = y \Delta (x + 1)$$

(ii) $x \Delta x = 1$

$$(iii) (x - y) \Delta (x + y) = x \Delta y$$

Putting $x = 1000$ and $y = 1001$ in operation (i), we get

$$1000\Delta 1002 = 1001\Delta 1001$$

From operation (ii), $1001\Delta 1001 = 1$

$$\therefore 1000 \Delta 1002 = 1$$

Putting $x = 1001$ and $y = 1$ in operation (iii), we get

$$\therefore 1000 \Delta 1002 = 1001 \Delta 1$$

$$\therefore 1001 \Delta 1 = 1$$

5. a The product of the marks obtained = 72
As Rohan was not able to figure out the marks obtained by Sunil initially, there must be at least two possible ways of getting that same sum. The two possible cases are 2, 6, 6 and 3, 3, 8 (Sum = 14).
When Rohan got to know that Sunil got the highest in Physics among the three subjects, he could answer correctly as this is possible only with 3, 3 and 8.
Therefore, the sum of the marks obtained by Sunil in the other two subjects is $3 + 3$ i.e. 6.

6. Which of the following could be a possible value of 'x' for which each of the fractions $\frac{[x]+2}{10}, \frac{[x]+13}{11}, \frac{[x]+26}{12}, \frac{[x]+41}{13}, \dots, \frac{[x]+1913}{49}$ and $\frac{[x]+2002}{50}$ is in its simplest form, where [x] stands for the greatest integer less than or equal to 'x'?
 (a) 45.45 (b) 49.49 (c) 51.51 (d) 53.53
6. c A fraction is said to be in its simplest form when the numerator and the denominator are co-prime. If we observe the fractions carefully, we find that in each term a remainder of 2 is left when the integer part of the numerator is divided by the denominator. E.g. 2 by 10, 13 by 11, 26 by 12, 41 by 13, and so on.
 The fractions can be written as: $\frac{[x]+2}{10}, 1+\frac{[x]+2}{11}, 2+\frac{[x]+2}{12}, 3+\frac{[x]+2}{13}$ and so on...
 Thus 'x' needs to be such that [x] + 2 is co-prime with 10, 11, 12, ...49 and 50.
 Among the options, the only such value is 51.51.
7. The sequence 1, 2, 4, 5, 7, 9, 10, 12, 14, 16, 17, ... has one odd number followed by the next two even numbers, then the next three odd numbers followed by the next four even numbers and so on. What is the 2003rd term of the sequence?
 (a) 3953 (b) 3943 (c) 3940 (d) 3950

7. b We have the following alternate sequences of odd and even terms:

Number of Terms	Terms
1	1
2	2,4
3	5,7,9
4	10,12,14,16
5	17,19,21,23,25
6	26,28,30,32,34,36
7	37,39,41,43,45,47,49
8	50,52,54,56,58,60,62,64

If we observe the sequences carefully the last term in any sequence is the square of the number of terms, i.e. when n = 3, last term = 9; when n = 4, last term = 16; when n = 8, last term = 64 and so on...

Also, the total number of terms in the sequence is the sum of the number of terms in the alternate sequences of even and odd terms.

Since $\frac{62 \times 63}{2} = 1953$, we can say that the 2003rd term will lie in a sequence of odd terms and will be the 50th term in that sequence. The last term in the sequence of even terms with n = 62 will be $62^2 = 3844$. Hence, the next odd sequence begins at 3845. The 50th term in this sequence will be $3845 + 49 \times 2 = 3943$.

8. c logA, logB and logC are in Arithmetic Progression.

$$\Rightarrow 2\log B = \log A + \log C$$

$$\Rightarrow B^2 = A \times C \quad \dots(i)$$

1

Also, $C = B^{120}$ and $A = B^{60}$
Putting these values in equ

Putting these values in equation (i), we get

$$B^2 = B^{\frac{t}{60}} \times B^{\frac{t}{120}}$$

$$\Rightarrow \frac{t}{60} + \frac{t}{120} = 2$$

$$\Rightarrow \frac{3t}{120} = \frac{t}{40} = 2$$

→ t = 80

9. A circle with center 'O' circumscribes a quadrilateral PQRS, such that the side RS of the quadrilateral is also the diameter of the circumcircle. The diagonals of the quadrilateral intersect at point M. PO and QO are joined. Which of the following is equal to $\angle QMR$?

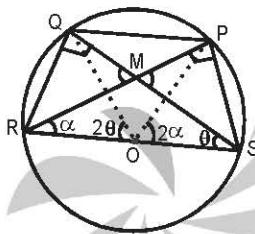
$$(a) \angle QOR + \angle POS$$

(c) $\angle QOR + \angle POS - 90^\circ$

$$(b) \frac{\angle QOR + \angle POS}{2}$$

(d) None of these

9. b



Let $\angle QSR = \theta$

$$\therefore \angle QOR = 2\theta$$

(The angle subtended by a chord at the center is twice the angle subtended by the same chord at the circumference.)

Let $\angle PRS = \alpha$

$$\therefore \angle POS = 2\alpha$$

$$\therefore \angle QOR + \angle POS = 2\alpha + 2\theta$$

Also, $\angle PMS = \angle QMR = \alpha + \theta$

(The exterior angle of a triangle is equal to the sum of the interior opposite angles.)

$$13. \text{ b} \quad x + y = 8 \Rightarrow x = 8 - y$$

$$\therefore P = 5(8 - y)^2 + 11y^2$$

$$\Rightarrow P = 320 + 5y^2 - 80y + 11y^2$$

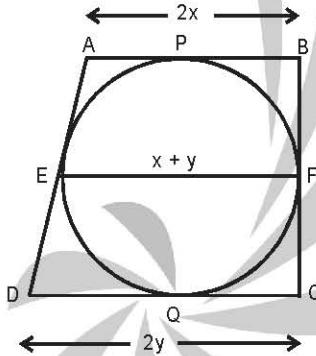
$$\Rightarrow P = (4y - 10)^2 + 220$$

P will be minimum when $(4y - 10)^2$ is equal to 0.

$$\therefore P(\min) = 220$$

14. A circle is drawn inside a trapezium such that it touches all the four sides of the trapezium. The line joining the midpoints of the non-parallel sides divides the trapezium in two parts with areas in the ratio 3 : 5. If the lengths of the non-parallel sides are 6 cm and 10 cm, then what is the length (in cm) of the longer parallel side of the trapezium?

(a) 8 (b) 10 (c) 12 (d) Cannot be determined



Let the trapezium be ABCD (see the figure given above) and the longer parallel side be CD.

Let the length of the side AB be ' $2x$ ' cm and the length of the side CD be ' $2y$ ' cm.

Let '2h' cm be the shortest distance between AB and CD.

E and F are the midpoints of AD and BC respectively (which may not be the points of contact of the trapezium and the circle).

$$\therefore \text{the length of } EF = \frac{AB + CD}{2} = \frac{2x + 2y}{2} = x + y \text{ cm}$$

$$\text{The area of trapezium ABFE} = \frac{1}{2} \times h \times (3x + y) \text{ cm}^2$$

$$\text{The area of trapezium EFCD} = \frac{1}{2} \times h \times (x + 3y) \text{ cm}^2$$

$$\frac{\text{Area(ABFE)}}{\text{Area(EFCD)}} = \frac{3x + y}{x + 3y} = \frac{3}{5} \Rightarrow \frac{x}{y} = \frac{AB}{CD} = \frac{1}{3} \quad \dots(i)$$

Also, $AB + CD = BC + AD$

(Since, ABCD is a tangential quadrilateral.)

$$\therefore AB + CD = 16 \text{ cm}$$

$$\Rightarrow 2x + 2y = 16 \text{ and } x + y = 8$$

From equation (i), $x = 2$ and $y = 6$

∴ the length of CD = 2y = 12 cm

15. b By the time Manu completes 12 rounds, Ankur will complete $\frac{5}{9} \times 12 = 6\frac{2}{3}$ rounds. At this point in time Ankur is moving towards B and is 280 metres away from A whereas Manu is at B.

They will meet at a distance of $9 \times \left(\frac{420 - 280}{5 + 9} \right) = 90$ metres from B. This point will be at a distance of $420 - 90 = 330$ metres from A.

16. b $2\log(x - 2y) = \log x + \log y$

$$\Rightarrow (x - 2y)^2 = xy$$

$$\Rightarrow \left(\frac{x}{y} - 2 \right)^2 = \frac{x}{y}$$

Putting $\frac{x}{y} = t$ in the above equation,

$$t^2 - 5t + 4 = 0$$

$$\Rightarrow (t-1)(t-4)=0$$

$$\Rightarrow t = 1 \text{ or } 4$$

But x cannot be equal to y as \log is not defined for negative numbers.

Hence, $\frac{x}{y} = 4$ is the only possible solution.

17. There are 140 students in a school. The number of students who play Cricket, Football and Hockey are 50, 80 and 70 respectively. The ratio of the number of students who play more than one of the three sports to the number of students who play all the three sports is 3 : 2. If each student of the school plays at least one of the three sports, then how many students play exactly two of the three sports?

(a) 12

(b) 14

(c) 16

(d) 20

17. a Let the number of students who play exactly three, exactly two and exactly one sport be x , y and z respectively. Hence, $x + y + z = 140$ and $3x + 2y + z = 200$. Solving the two equations, we get $2x + y = 60$. It is given that $(x + y) : x = 3 : 2$. Solving, we get $x = 24$ and $y = 12$. Hence, 12 students play exactly two of the three sports.

18. There are three equal containers that are completely filled with different water-alcohol mixtures with water and alcohol in the ratio 2 : 3, 3 : 4 and 4 : 5 respectively. They are emptied into a bigger container. What fraction of the mixture in the bigger container should be replaced by water so that the resulting mixture has equal quantities of water and alcohol?

(a) $\frac{43}{945}$

(b) $\frac{143}{945}$

(c) $\frac{43}{544}$

(d) $\frac{143}{1088}$

18. d Let the volume of each container be 315 units.

The total volume of the three containers is 945 units.

Hence, the volume of water in three containers is 126, 135 and 140 units respectively and that of alcohol is 189, 180 and 175 units respectively.

The ratio of water and alcohol in the bigger container = 401 : 544

Let the volume of the mixture that needs to be replaced by water be x units. Hence,

$$401 - 401 \times \frac{x}{945} + x = 544 - 544 \times \frac{x}{945}$$

$$\Rightarrow x = \frac{143 \times 945}{1088}$$

So the fraction of the mixture that needs to be replaced = $\frac{143}{1088}$

19. In an increasing Arithmetic Progression, the product of the 5th term and the 6th term is 300. When the 9th term of this A.P. is divided by the 5th term, the quotient is 5 and the remainder is 4. What is the first term of the A.P.?

(a) 12

(b) -40

(c) -16

(d) -5

19. b Let the 5th term of the A.P. be 'a' and the common difference be 'd'. The 6th term will be $(a + d)$ and the 9th term will be $(a + 4d)$.

Therefore, $a \times (a + d) = 300$... (i)

and $5a + 4 = (a + 4d)$

$\Rightarrow d = a + 1$... (ii)

Solving (i) and (ii), we get $a = 12$ or $-\frac{25}{2}$.

If $a = -\frac{25}{2}$, then the value of 'd' will also be negative, which is not possible in an increasing A.P.

Therefore, $a = 12$ and $d = 13$.

$$\text{The first term will be } = (a - 4d) = 12 - 52 = -40.$$

(a) 5

(b) 6

(c) 4

(d) 7

20. a Let the amount of work (in units) completed by a man, a woman and a child in a day be M, W and C respectively.

The amount of work (in units) completed by 4 men in 12 days = $4 \times 12 \times M = 48M$.

The amount of work (in units) completed by 6 women in 10 days = $6 \times 10 \times W = 60W$.

The amount of work (in units) completed by 8 children in 9 days = $8 \times 9 \times C = 72C$.

$$\text{So } 48M = 60W = 72C$$

$$\text{or } 4M = 5W = 6C = 60K \text{ (say)}$$

Hence, M = 15K, W = 12K and C = 10K.

$$\text{The amount of work (in units) completed by a man, a woman and a child together in 10 days} \\ = (15 + 12 + 10)K \times 10 = 370K.$$

The amount of work (in units) completed by 2 women and 5 children together in a day = $(2 \times 12 + 5 \times 10)K = 74K$.

Hence, the answer = $\frac{370}{74} = 5$ days.

Directions for questions 21 and 22: Answer the questions on the basis of the information given below.

The table given below shows some data for fifteen companies for the year 2010.

Company	Number of branches across the country	Average Number of employees/branch	Average Revenue generated/branch (in Rs. Crores)	Total Expenses across the country (in Rs. Crores)
Roca Cola	12	178	760	5,100
Critannia	15	134	345	2,990
Kestle	6	546	456	1,880
Chepsi	8	277	510	2,315
Trimul	24	160	225	2,400
Gold Diary	18	112	650	9,056
Superb Diary	22	150	360	3,500
Fresh & First	27	106	410	7,126
Gopal Jee	16	216	585	5,810
Shudh	9	360	744	4,138
Evertasty	10	245	660	4,284
Natural & Fresh	32	80	208	3,100
Jusico	25	140	376	5,430
Trifolla	15	230	500	4,800
Real Fruits	8	325	752	2,800

Directions for questions 23 to 25: Answer the questions on the basis of the information given below.

In Sun-Moon bakery, four different types of cakes – Mango Cake, Pineapple Cake, Banana Cake and Fresh Fruitcake – are sold. Each type of cake consists of five fixed ingredients – Wheat Flour, Milk, Sugar Free, Eggs and Baking Powder – and some variable ingredients. The variable ingredients used in different types of cakes are as follows:

Mango cake – Mango Cream and Mango pieces.

Pineapple cake – Pineapple Cream and Pineapple pieces.

Banana cake – Banana Cream and Banana pieces.

Fresh fruitcake – Milk Cream and equal quantities of Mango, Pineapple and Banana pieces.

The Cost Price of Eggs is Rs. 48/dozen and the Cost Price of Milk is Rs. 30/litre. The table given below shows the Cost Price/100 g of the rest of the ingredients.

Ingredient	Cost (in Rs.)/100 g
Wheat Flour	50
Sugar Free	200
Baking Powder	350
Mango pieces	30
Pineapple pieces	20
Banana pieces	40
Mango Cream	60
Pineapple Cream	90
Banana Cream	50
Milk Cream	70

The table given below shows the Selling Price of the different types of cakes.

Cake	Selling Price(in Rs.)
Mango Cake	515
Pineapple Cake	500
Banana Cake	600
Fresh Fruitcake	690

The statements given below are true for a cake of any of the four types made in Sun-Moon bakery.

- (i) The ratio of the quantity of Sugar Free used to the quantity of Wheat Flour used is same as the ratio of the quantity of Cream used to the quantity of Fruit pieces used.
 - (ii) The quantity of Cream used is three times the quantity of Sugar Free used.
 - (iii) The total cost of the fixed ingredients is equal to the total cost of the variable ingredients.
 - (iv) In each cake, 10 g Baking Powder, 3 Eggs (equivalent to 120 g) and 100 ml Milk (equivalent to 70 g) are used.
 - (v) The net weight of each cake is 1 kg.
23. For which type of cake is the profit percentage made by the bakery the highest?
(a) Mango Cake (b) Pineapple Cake (c) Banana Cake **(d) Fresh Fruitcake**
24. What are the two types of cake that require the same quantity of Sugar Free in their preparation?
(a) Mango Cake and Pineapple Cake (b) Banana Cake and Pineapple Cake
(c) Banana Cake and Fresh Fruitcake (d) Mango Cake and Fresh Fruitcake
25. How much Wheat Flour is used in preparing four cakes – one of each type?
(a) 475 g (b) 500 g **(c) 525 g** (d) 550 g

For questions 23 to 25:

From statement (iv), the total weight of Baking Powder, Eggs and Milk used in a cake is 200 g. Therefore, the total quantity of the remaining ingredients used is 800 g.

Let the quantity (in g) of Wheat Flour and Sugar Free used in a cake be x and y respectively. Therefore, from statements (i) and (ii), quantity (in g) of Fruit pieces and Cream used is 3x and 3y respectively.

$$\Rightarrow x + y + 3x + 3y = 800 \text{ and } x + y = 200$$

The total cost (in Rs.) of Baking Powder, Eggs and Milk used in a cake is $35 + 12 + 3$ i.e. 50.

$$\text{Cost (in Rs.) of Wheat flour used is } \frac{50}{100}x \text{ i.e. } \frac{x}{2}.$$

$$\text{Cost (in Rs.) of Sugar Free used is } \frac{200}{100}y \text{ i.e. } 2y.$$

$$\text{The total cost (in Rs.) of the fixed ingredients used is } 50 + \frac{x}{2} + 2y.$$

As $x + y = 200$, the values of x and y in different types of cake can be calculated as given below:

I. Mango Cake:

$$\frac{30}{100} \times 3x + \frac{60}{100} \times 3y = 50 + \frac{x}{2} + 2y$$

On solving, $x = 150$ and $y = 50$.

II. Pineapple Cake:

$$\frac{20}{100} \times 3x + \frac{90}{100} \times 3y = 50 + \frac{x}{2} + 2y$$

On solving, $x = 150$ and $y = 50$.

III. Banana Cake:

$$\frac{40}{100} \times 3x + \frac{50}{100} \times 3y = 50 + \frac{x}{2} + 2y$$

On solving, $x = 125$ and $y = 75$.

IV. Fresh Fruitcake:

$$\frac{30}{100}x + \frac{20}{100}x + \frac{40}{100}x + \frac{70}{100} \times 3y = 50 + \frac{x}{2} + 2y$$

On solving, $x = 100$ and $y = 100$.

The table given below shows the cost incurred on preparing the different types of cakes.

Cake	Cost Price(in Rs.)
Mango Cake	450
Pineapple Cake	450
Banana Cake	525
Fresh Fruitcake	600

23. d Fresh Fruitcake

24. a Mango Cake and Pineapple Cake

25. c 525 g

26. The question given below is followed by two statements, A and B. Mark the answer using the following instructions:
- Mark (a) if the question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
- Mark (b) if the question can be answered by using either statement alone.
- Mark (c) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.**
- Mark (d) if the question cannot be answered even by using both the statements together.

Q. N is a natural number that has exactly 24 factors. What is the number of factors of N^3 ?

A. When N is multiplied by 3, the resultant number has 32 factors.

B. When N is multiplied by 5, the resultant number has 30 factors.

26. c As N has exactly 24 factors, N can be of the form p^{23} , pq^{11} , p^2q^7 , p^3q^5 , pqr^5 , pq^2r^3 or $pqrs^2$, where p, q, r and s represent different prime numbers.

From Statement A:

As the number of factors of the resultant number is less than twice the number of factors of N, 3 must be a factor of N. Thus N can be of the form p^2q^7 , pq^2r^3 or $pqrs^2$, where the prime factor raised to the power 2 represents 3. But we cannot determine the number of factors of N^3 with certainty and hence this statement alone is not sufficient.

From Statement B:

As the number of factors of the resultant number is less than twice the number of factors of N, 5 must be a factor of N. Thus N can be of the form p^3q^5 or pq^2r^3 , where the prime factor raised to the power 3 represents 5. But we cannot determine the number of factors of N^3 with certainty and hence this statement alone is not sufficient.

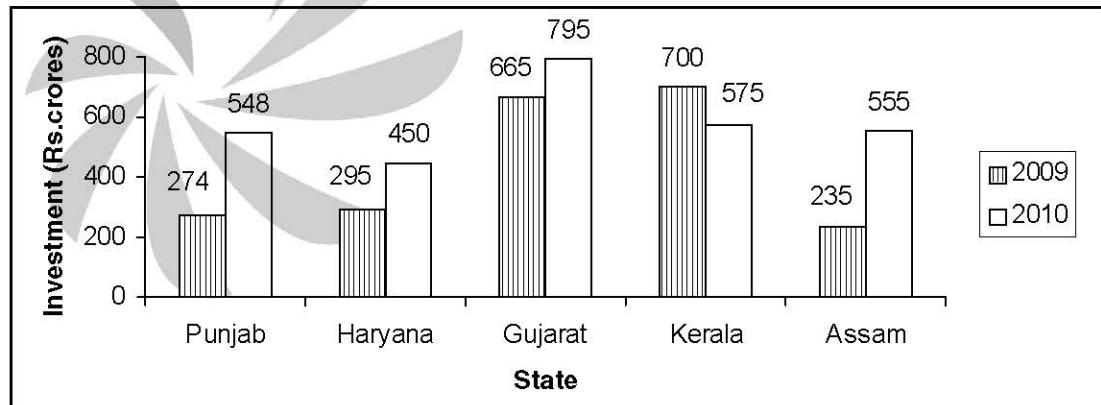
From Statements A and B:

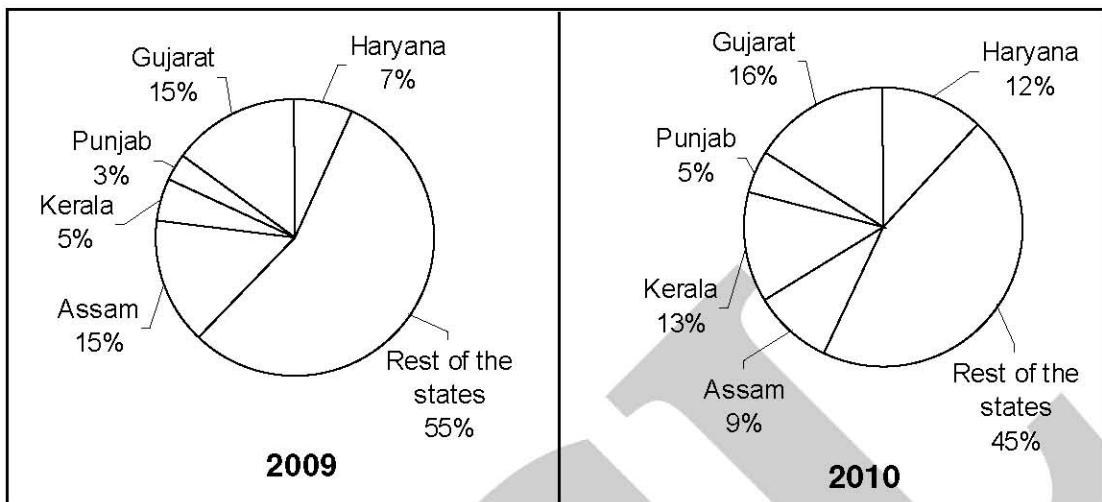
The only possibility is that N is of the form pq^2r^3 .

$\therefore N^3 = p^3q^6r^9$ and the number of factors of $N^3 = 4 \times 7 \times 10 = 280$.

Directions for questions 27 to 29: Answer the questions on the basis of the information given below.

The bar graph given below shows the total amount (in Rs. Crores) invested by five states of India – Punjab, Haryana, Gujarat, Kerala and Assam – in three fields – R&D, Education and Sports – in 2009 and 2010. The pie charts given below show the percentage break-up of the total investment (which also includes the three fields mentioned earlier) made by different states of India in 2009 and 2010.





27. c Let the total investment (in Rs. Crores) across the country in 2009 and 2010 be $100x$ and $100y$ respectively.

$$\Rightarrow \frac{56}{100} \times 5x = 700 \Rightarrow x = 250$$

$$\Rightarrow \frac{15}{100} \times 12y = 450 \Rightarrow y = 250$$

The total investment made across the country in 2009 and 2010 is the same i.e. Rs. 25,000 crores.

$$\text{Required percentage change} = \frac{55\% - 45\%}{55\%} \times 100 = 18.18\%.$$

28. a Investments (in Rs. Crores) made by Gujarat and Assam together in R&D in:

$$2009 = \frac{900}{3} = 300$$

$$2010 = \frac{1,350}{3} = 450$$

Let the total investments (in Rs. Crores) of the two states together in 2009 and 2010 be x and y respectively.

$$\therefore \frac{300}{x} \times 1.2 = \frac{450}{y} \text{ and } \frac{x}{y} = \frac{4}{5}$$

$$\therefore \text{Required ratio} = \frac{4}{0.3} : \frac{5}{0.25} = 2 : 3.$$

29. a Let the total investment (in Rs. crores) made across the country in 2009 and 2010 be $100x$ and $100y$ respectively.

$$\therefore \frac{3x - 274}{5y - 548} = \frac{1}{2} \text{ and } \frac{x}{y} = \frac{5}{6}$$

∴ Required percentage change

$$= \frac{600 - 500}{500} \times 100 = 20\%.$$

30. The question given below is followed by two statements, A and B. Mark the answer using the following instructions:

Mark (a) if the question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.

Mark (b) if the question can be answered by using either statement alone

Mark (c) if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.

Mark (d) if the question cannot be answered even by using both the statements together.

Q. Five girls – Komal, Dhara, Jyoti, Sarla and Neha – are of different ages. Sarla is younger than both Jyoti and Komal. Jyoti is younger than Dhara but older than Neha. Who among the five is the oldest?

A. The average age of Komal and Dhara is less than the average age of Jyoti and Neha.

B. The average age of Dhara and Jyoti is less than the average age of Komal and Neha.

30. b Let the ages of Komal, Dhara, Jyoti, Sarla and Neha be represented by K, D, J, S and N respectively. It is given that $S < J$, K and $N < J < D$.

From Statement A:

$$\text{We have } \frac{K+D}{2} < \frac{J+N}{2}.$$

As we already know that $N < J < D$, the only possible case is that K is less than N . From this it can be concluded that $S < K < N < J < D$. Hence, this statement alone is sufficient to answer the question.

From Statement B:

$$\text{We have } \frac{D+J}{2} < \frac{K+N}{2}.$$

As we already know that $N < J < D$, the only possible case is that K is more than D . We can conclude that either $S < N < J < D < K$ or $N < S < J < D < K$. Hence, this statement alone is sufficient to answer the question.

Section – II

Directions for questions 31 to 34: The passage given below is followed by a set of four questions. Choose the most appropriate answer to each question.

Microfinance in India started in the early 1980s with small efforts at forming informal self-help groups (SHG) to provide access to much-needed savings and credit services. From this small beginning, the microfinance sector has grown significantly in the past decades. National bodies like the Small Industries Development Bank of India (SIDBI) and the National Bank for Agriculture and Rural Development (NABARD) are devoting significant time and financial resources to microfinance.

The strength of the microfinance organizations (MFOs) in India is in the diversity of approaches and forms that have evolved over time. In addition to the home-grown models of SHGs and mutually aided cooperative societies (MACS), the country has learned from other microfinance experiments across the world, particularly those in Bangladesh, Indonesia, Thailand, and Bolivia, in terms of delivery of microfinancial services. Indian organizations could also learn from the transformation experiences of these microfinance initiatives.

Robinson (2001) defines microfinance as "small-scale financial services—primarily credit and savings—provided to people who farm, fish or herd" and adds that it "refers to all types of financial services provided to low-income households and enterprises." In India, microfinance is generally understood but not clearly defined. For instance, if a SHG (Self-Help Group) gives a loan for an economic activity, it is seen as microfinance. But if a commercial bank gives a similar loan, it is unlikely that it would be treated as microfinance.

In India, microfinance is done by organizations having diverse orientations. NGOs in India perform a range of developmental activities; microfinance usually is a sub-component. Some of these NGOs organize groups and link them to an existing provider of financial services. In some cases NGOs have a "revolving fund" that is used for lending. But in either of these cases, microfinance is not a core activity for these NGOs. An example is the Aga Khan Rural Support Programme India (AKRSP-I). For AKRSP-I, the microfinance component is incidental to its work in natural resource management. Examples like MYRADA and the Self-Employed Women's Association (SEWA) fall in the same category. However, as their microfinance portfolios grew, both organizations decided to form separate entities for microfinance. MYRADA set up an MFO called Sanghamitra Rural Financial Services (SRFS), while SEWA set up the SEWA Cooperative Bank.

At the next level, we find NGOs helping the poor in economic activities. Their purpose is developmental. They see microfinance as an activity that feeds into economic activities. For instance, the South Indian Federation of Fishermen's Societies (SIFFS) started as a support organization for fishermen, providing technical and marketing support. It then arranged for loans to its members through banks. When the arrangement was not effective, it started providing loans itself. At the third level, we have organizations with microfinance at the core. They have developmental roots, but are diverse in their operational details, orientation, and form of incorporation.

31. The style used by the author in this passage is
(a) descriptive (b) instructional (c) critical (d) analytical

31. d The author follows an analytical style by discussing the components of microfinance in India -initiation, strength, definition and types of organizations that partake in this activity. The author avoids personal opinion and stays with an analysis that comes across as unbiased. Option (a) is incorrect as the passage does not conjure up an image of microfinance nor does it describe the characteristics of microfinance. Option (b) is also incorrect because the author does not instruct the reader on how to obtain microfinance or on the steps required for entering into this sector. Option (c) is incorrect because the author does not provide facts, data, and statistics. The author's aim is to understand microfinance in India .
32. Which one of the following is the strength of the microfinance organizations in India?
(a) In India, microfinance is provided by NGOs that help the poor in economic activities.
(b) In India, microfinance is done by organizations having diverse orientations.
(c) In India, diverse approaches have been used and there is learning from other microfinance experiments across the world.
(d) In India, microfinance is generally understood but not clearly defined.
32. c In the second paragraph the author clearly states option (c). Option (d) is incorrect as this is a criticism and not a strength. Option (a) and (b) have been mentioned in the passage but they have not been given as strengths of the microfinance organizations in India.
33. "If an SHG gives a loan for an economic activity, it is seen as microfinance. But if a commercial bank gives a similar loan, it is unlikely that it would be treated as microfinance." Which of the following options would help understand the above statement?
(a) In India, microfinance is defined by 'who gives the loan' and not by 'why it is given'.
(b) In India, microfinance is defined by 'why the loan is given' and not by 'who gives the loan'.
(c) Microfinance is generally understood but not clearly defined.
(d) None of the above
33. a The author brings a distinction between an SHG and a commercial bank in these statements. According to the passage, in India the definition changes with the change in loan giving entity. Option (b) is the exact opposite of the correct answer. Option (c) does not provide a reason, It only repeats a statement from the passage.
34. According to the passage, the South Indian Federation of Fishermen's Societies (SIFFS) independent microfinance activity provides
(a) support to farmers when loan arrangements through banks were not effective.
(b) support to fishermen when loan arrangements through banks were not effective.
(c) supplementary support to the banks that were unable to effect loan arrangements.
(d) support to organizations with microfinance at the core.
34. b The last paragraph helps understand the reason why SIFFS started independent microfinance activity. Refer to the lines "For instance... it started providing loans itself". Options (a),(c) and (d) are all factually incorrect.

Directions for questions 35 and 36: The passage given below is followed by a set of two questions. Choose the most appropriate answer to each question.

Civilization cannot exist without spoken language, but it can without written communication. The Greek poetry of Homer was at first transmitted orally, stored in the memory, as were the Vedas, the Sanskrit hymns of the ancient Hindus, which were unwritten for centuries. The South American Empire of the Incas managed its administration without writing. Yet eventually, almost every complex society – ancient and modern – has required a script or scripts. Writing, though not obligatory, is a defining marker of civilization. Without writing, there can be no accumulation of knowledge, no historical record, no science (though simple technology may exist), and of course no books, newspapers, emails, or World Wide Web.

The creation of writing in Mesopotamia (present-day Iraq) and Egypt in the late 4th millennium BC permitted the command and seal of a ruler like the Babylonian Hammurabi, the Roman Julius Caesar, or the Mongol Kublai Khan, to extend far beyond his sight and voice and even to survive his death. If the Rosetta Stone had never been inscribed, for example, the world would be virtually unaware of the nondescript Greco-Egyptian king Ptolemy V Epiphanes, whose priests promulgated his decree upon the Rosetta Stone in 196 BC written in three scripts: sacred hieroglyphic, administrative demotic, and Greek alphabetic.

Writing and literacy are generally seen as forces for good. All modern parents want their children to be able to read and write. But there is a negative side to the spread of writing that is present throughout its more than 5,000-year history, if somewhat less obvious. In the 5th century BC, the Greek philosopher Socrates (who famously never published a word) pinpointed our ambivalence towards 'visible speech' in his story of the Egyptian god Thoth, the mythical inventor of writing.

Thoth came to see the king seeking royal blessing on his enlightening invention. But instead of praising it, the king told

Thoth: "You have invented an elixir not of memory, but of reminding; and you offer your pupils the appearance of wisdom, not true wisdom, for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant."

In a 21st-century world saturated with written information and surrounded by information technologies of astonishing speed, convenience, and power, these words of Socrates recorded by his disciple Plato have a distinctly contemporary ring.

36. According to the passage, which of the following is true?
- (a) Writing is a tool not of knowledge but of reminding.
 - (b) Socrates was against the written mode of communication.
 - (c) The teachings of Socrates are timeless and are still relevant.
 - (d) Writing has an important place in modern world.**
36. d Refer to the first paragraph "Writing, though not obligatory, is a defining marker of civilization. Without writing there can be no accumulation of knowledge, no historical record, no science (though simple technology may exist), and of course no books, newspapers, emails, or World Wide Web". Therefore, option (d) is correct in the light of the information given in the passage.

Directions for questions 37 to 39: The passage given below is followed by a set of three questions. Choose the most appropriate answer to each question.

Tom O'Riordan for example, in his 1976 book, *Environmentalism*, distinguished four ideologically diverse propositions for tackling the current environmental crisis by means of institutional reform. For the sake of clarity, these four propositions can be ordered as follows. In the first place, a distinction can be made between statist and anti-statist propositions. The anti-statist propositions can then be divided into proposals for global or for local (communal or regional) policies. Finally, the proposals for local policies can be divided into authoritarian and anti-authoritarian solutions.

But O'Riordan considers only one position, one centred on the nation-state, centralised authoritarianism. This is the position represented in particular by William Ophuls who, together with Paul Ehrlich and Garrett Hardin, ranks as a prominent advocate of so-called 'lifeboat ethics' according to which rich countries should not be too ready to help poor countries lest the world population continue to grow and put even greater pressure on already scarce food supplies and strategic resources. In the light of ecological scarcity, frugality is a must, says Ophuls; we should be aiming for a 'steady-state society' in which the population and the means of subsistence are in balance. Liberal democracy is not equipped to achieve this aim, however; what is needed is a Hobbesian sovereign, a 'green Leviathan'. Ophuls leaves us in no doubt as to who shall be in charge of this future state.

"The ecological complex steady-state society may... require, if not a class of ecological guardians, then at least a class of ecological mandarins who possess the esoteric knowledge needed to run it well.... The steady-state society will not only be more authoritarian and less democratic than the industrial societies of today... but it will also in all likelihood be much more oligarchic as well, with only those possessing the ecological and other competences to make prudent decisions allowed full participation in the political process."

In view of the authority enjoyed by ecologists in Ophuls' steady-state society, his position could also be described as 'eco-cratic.'

37. What is the primary purpose of the author in this passage?
- (a) To advocate O'Riordan's approach to address the environmental crisis through institutional reforms.
 - (b) Discuss at length an approach to institutional reform that addresses environmental concerns.**
 - (c) Describe different approaches to creating an "eco-cratic" society.
 - (d) Identify the steps needed for institutional reform with an eye to the environmental crisis.

37. b The passage deals with some approaches to institutional reform that Tom O'Riordan identifies in his book *Environmentalism*. O'Riordan describes one of these strategies in detail. He does not "suggest" any particular strategy. So option (a) is incorrect. The author does not identify the steps necessary for institutional reform, but describes Ophuls' strategy in detail. Hence, option (d) is also ruled out. The passage does not describe various approaches to creating an eco-cratic society but concentrates on Ophuls' version of the same. Hence option (c) is also eliminated.
38. Which of the following statements is true in light of the passage?
- (a) According to Ophuls, judicious decisions cannot be taken in a democratic society.
 - (b) Ophul's ideology is described as a "green Leviathan" since it proposes a sovereign state with no democratic leanings.
 - (c) In a steady-state society, individual accountability will be proportional to individual capability.
 - (d) Riordan's book largely deals with a single authoritarian approach to institutional reform.**
38. d Although Ophuls stresses on the need for "ecological guardians" instead of a democratic setup to ensure an eco-cratic society, it does not follow that no judicial decisions can be taken in a democratic society. Option (a) is incorrect. Ophul's ideology is described as a "green Leviathan" because it talks about a political state where ecology is cared for but democracy is missing. The statement in option (b) fails to provide a justified reason for the ideology being called as green leviathan (as it misses the environment friendly aspect) and is thus incorrect. While Ophuls stresses on the need for "a class of ecological guardians", he does not mention whether individual accountability will be proportional to individual capability in such a society. Option (d) follows from the passage. O'Riordan "considers only one position, one centered on the nation-state, centralized authoritarianism."
39. Which of the following is an assumption in Ophuls' formulation of a steady-state society?
- (a) In a steady-state society, resources will not be limited.
 - (b) There won't be any resistance to the shift from a democratic to an eco-cratic society.
 - (c) In general, humans are not ecologically aware by nature.**
 - (d) Ecological knowledge is all it takes to run a steady-state society.
39. c Ophuls stresses the need for ecological guardians. He also mentions that in the steady state society "only those possessing the ecological and other competences to make prudent decisions" will be allowed full participation in the political process. He also says "...possess the esoteric knowledge needed to run it well.". This means that Ophuls assumes that ecological awareness does not come naturally to humans. Option (a) is incorrect. In a steady-state society, "population and the means of subsistence are in balance." This does not assume that resources will not be limited. Option (b) cannot be inferred from the passage. Option (d) is incorrect since "ecological and other competences to make prudent decisions" is mentioned.
40. Five sentences are given below, labeled A, B, C, D and E. They need to be arranged in a logical order to form a coherent paragraph. From the given options, choose the most appropriate one.
- A. Was it evidence that science and religion are inevitably locked in ideological and institutional combat?
 - B. Unsurprisingly, there was more to it than that.
 - C. On all sides of the case there was agreement that it was proper and rational both to seek accurate knowledge of the world through observation of nature and also to base one's beliefs on the Bible.
 - D. When Galileo recanted his Copernicanism in 1633, what did that signify?
 - E. Was it a victory for religious obscurantism and a defeat for free scientific inquiry?
- (a) DEABC** (b) CDEBA (c) CBDAE (d) DEACB

44. The word given below has been used in sentences in four different ways. Choose the option corresponding to the sentence in which the usage of the word is *incorrect or inappropriate*.

BY

- (a) Can I pay by credit card?
- (b) Do you prefer to travel by air or by train?
- (c) They traveled by the 6.45 train.**
- (d) Come and sit by me.

44. c *By* is incorrect in this sentence. The correct sentence should be '*They traveled on the 6.45 train*'. '*by*' can be used when we are describing the mode of transport in general (*I traveled by train*). *On* is used when we are talking about a particular transport (train etc.) like the 6.45 train. Therefore (c) is incorrect. '*Sit by me*' means sit beside me

45. Given below are a few sentences. Identify the sentence(s)/ part(s) of the sentence(s) that is/are *correct* in terms of grammar and usage (including spelling, punctuation and logical consistency). Then choose the most appropriate option.

- 1. Imagine you are in a train carriage waiting at station.
- 2. Out of the window you see a second train standing alongside your's.
- 3. The whistle blows, and at last you are on your way.
- 4. You glide smoothly past the other train.

- (a) 1 and 3
- (b) 2 and 4
- (c) 3 and 4**
- (d) 1 and 4

45. c *Station* is a countable noun and should be preceded by an article (a/the). So (1) is incorrect. *Your's* is incorrect. The correct possessive form is *yours*. Sentences (3) and (4) are correct.

46. Given below are a few sentences. Identify the sentence(s)/ part(s) of the sentence(s) that is/are *correct* in terms of grammar and usage (including spelling, punctuation and logical consistency). Then choose the most appropriate option.

- 1. He'll give you a call as soon as he arrive.
- 2. A museum is a good place to look for ancient Greece and Rome.
- 3. Do you think he knows what does he want?
- 4. Religion in the context of philosophy is particularly significant.

- (a) 1 and 4
- (b) 1 and 2
- (c) 2 and 4**
- (d) 1 and 3

46. c Sentence (1) is incorrect. The correct expression is *as soon as he arrives*. Sentence (3) is incorrect. The correct expression is *what he wants*. Sentence (2) and (4) are correct.

47. Given below are a few sentences. Each sentence has a pair of words that are italicized. From the italicized words, select the most appropriate words (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

I hope they don't ask me anything about politics. I haven't the ***slightest* (A) / *smallest* (B)** idea about it.

I knew David could always be ***trusted* (A) / *relied* (B)** on in times of crisis.

I would like to make a ***request* (A) / *demand* (B)** to the hotel management that they allow people to choose the TV program they want to watch.

The business has lost a lot of orders recently and is going through a ***thin* (A) / *poor* (B)** time.
It was not the ***ideal* (A) / *idyll* (B)** solution to the problem.

(a) ABAAA

(b) ABABB

(c) ABBAAB

(d) BBAAB

47. a ABAAA

Slightest means very small in degree <There was not the slightest hint of trouble.> <He is, without the slightest doubt, the greatest living novelist.> <He never had the slightest intention of agreeing to it>. As we are talking about *idea*, small or large size does not make sense. *Slightest* is a better choice for the first sentence. *Rely on* somebody means to depend on somebody; or to have faith in somebody. *Relied* is the correct choice for sentence (2) because of the preposition *on*. Request is used when one asks for something politely and formally whereas demand carries a hint of authority. *I would like* suggests that *request* is more appropriate than *demand* in the given sentence. *Have a thin time* or *going through a thin time* means to have many problems or difficulties to deal with; to not be successful <He's had a thin time of it since losing his job>. So *thin time* is idiomatically correct in the given context. *Ideal* is an adjective and means perfect whereas *idyll* is a noun and means a happy and peaceful place, event or experience, especially one connected with the countryside; a short poem or other piece of writing that describes a peaceful and happy scene. So *ideal* is the correct choice.

48. Given below are a few sentences. Each sentence has a pair of words that are italicized. From the italicized words, select the most appropriate words (A or B) to form correct sentences. The sentences are followed by options that indicate the words, which may be selected to correctly complete the set of sentences. From the options given, choose the most appropriate one.

In his position ***as* (A) / *of* (B)** managing director, he is responsible for more than 300 employees.

He planned the event so meticulously that the outcome was entirely ***causal* (A) / *casual* (B)**.

They created a ***custom* (A) / *costume* (B)** design for a diwali card.

I ***suspect* (A) / *expect* (B)** his motives are not entirely good.

The ***economics* (A) / *economic* (B)** of the project are very encouraging.

(a) ABAAB

(b) AAAAA

(c) BAAAB

(d) BBAAA

48. b AAAAA

As is used to describe the fact that somebody/something has a particular job or function <She works as a courier> <Treat me as a friend> <I respect him as a doctor>. *Of* means belonging to something; being part of something; relating to something <the lid of the box> <the director of the company> <a member of the team>. So, *as* is appropriate in the given context. *Causal* means expressing or indicating cause <the causal relationship between poverty and disease>. *Casual* means not showing much care or thought; seeming not to be worried; not wanting to show that something is important to you. So *causal* is the apt word for the given sentence. *Custom* which means an accepted way of behaving

or of doing things in a society or a community is the apt word for the third sentence. Suspect means to have an idea that something is probably true or likely to happen, especially something bad, but without having definite proof. So suspect is correct for the fourth sentence. *Economics* (noun), as used here, means the way in which money influences, or is organized within an area of business or society. Economic (adjective) means profitable < Small local shops stop being economic when a supermarket opens up nearby>. Because we need a noun in the given sentence, therefore *economics* is the apt word.

49. A paragraph is given below from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

I was a man who stood in symbolic relations to the art and culture of my age. I had realised this for myself at the very dawn of my manhood, and had forced my age to realise it afterwards. Few men hold such a position in their own lifetime, and have it so acknowledged. It is usually discerned, if discerned at all, by the historian, or the critic, long after both the man and his age have passed away. With me it was different. I felt it myself, and made others feel it. Byron was a symbolic figure, but his relations were to the passion of his age and its weariness of passion.

- (a) I ceased to be lord over myself.
(b) Mine were to something more noble, more permanent, of more vital issue, of larger scope.
(c) I was no longer the captain of my soul, and did not know it.
(d) He had discerned it himself.

49. b The paragraph is a first person narrative and ends with a description of Byron and his relations. The author has used Byron to show contrast between him and Byron. It should be followed by the sentence that continues the talk about relations to the art and culture and provides the comparison by presenting the author's relations. Hence, option b is the correct option.
50. A paragraph is given below from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

In an age of hurry like ours the appearance of an epic poem that is more than five thousand lines in length cannot but be regarded as remarkable. Whether such a form of art is the one most suited to our century is a question. Edgar Allan Poe insisted that no poem should take more than an hour to read, the essence of a work of art being its unity of impression and of effect. Still, it would be difficult to accept absolutely a canon of art, which would place the *Divine Comedy* on the shelf and deprive us of the *Bothwell* of Mr. Swinburne.

- (a) For even on ortolans who could endure oratory?
(b) The subject of a work of art has, of course, nothing to do with its size.
(c) A work of art is to be estimated by its beauty, not by its size.
(d) We cannot help this.

50. c The paragraph talks about the lengthy poems losing their charm in the current age. Author does not really appear to endorse this idea while talking of *Bothwell*. He says we would not like being deprived of the *Bothwell* of Mr. Swinburne despite its large size. He is inclined to say that size should not be a criterion for judging a poem. A sentence that expresses the same is required to complete the paragraph. Hence, option (c) fits the bill. Option (b) is incorrect as it talks about the subject of a work of art rather than the beauty of a work of art.

Directions for questions 51 to 53: Answer the questions on the basis of the information given below.

Twelve people – Aman, Bharti, Charu, Dishank, Eric, Farhan, Gaurav, Hitesh, Inder, Jatin, Kamal and Lalit – work in three different cities – Delhi, Mumbai and Kolkata, with exactly four of them working in each city. Four of the twelve are Accountants, four are Managers and four are Professors. At least one Accountant, one Manager and one Professor work in each of the three cities. It is also known that:

For questions 51 to 53:

The given information can be tabulated as shown below.

Name	Profession	City
Aman	-	-
Bharti	Manager	-
Charu	-	Mumbai
Dishank	-	-
Eric	-	-
Farhan	Professor	Mumbai
Gaurav	-	Delhi
Hitesh	Accountant	Delhi
Inder	Accountant	Kolkata
Jatin	Manager	Kolkata
Kamal	Manager	-
Latit	Professor	Mumbai

It can be easily deduced that the number of different professionals working in each of the three cities is as given below.

	Kolkata	Mumbai	Delhi
Accountant	2	1	1
Manager	1	1	2
Professor	1	2	1

As three people who work in Mumbai are already known, Kamal and Dishank must be working in Delhi. As Jatin is a Manager working in Kolkata, Bharti must be working in Mumbai and Aman and Eric must be working in Kolkata. As Aman is not an Accountant, he must be a Professor and Eric must be an Accountant. Therefore, Charu also must be an Accountant. Hence, one of Gaurav and Dishank is a Manager and the other is a Professor. The final table can be shown as given below.

Name	Profession	City
Aman	Professor	Kolkata
Bharti	Manager	Mumbai
Charu	Accountant	Mumbai
Dishank	Manager/Professor	Delhi
Eric	Accountant	Kolkata
Farhan	Professor	Mumbai
Gaurav	Professor/Manager	Delhi
Hitesh	Accountant	Delhi
Inder	Accountant	Kolkata
Jatin	Manager	Kolkata
Kamal	Manager	Delhi
Lalit	Professor	Mumbai

51. c Charu is an Accountant working in Mumbai.
52. d Apart from Kamal, either Dishank or Gaurav could be the other Manager working in Delhi.
53. d Eric is an Accountant working in Kolkata.
54. Ten cars – Santro, Wagon R, Zen, Ritz, Yuva, Innova, Corolla, Matiz, Xylo and Scorpio – are parked in two parallel rows such that five cars are parked in each row. Each car parked in a row faces a car parked in the other row head-on. It is also known that:
- (i) Matiz is parked opposite Yuva.
 - (ii) Ritz is parked to the immediate right of Xylo and opposite Wagon R.
 - (iii) No car is parked to the left of both Zen and Scorpio.
 - (iv) The number of cars parked between Innova and Matiz is the same as the number of cars parked between Xylo and Santro.

Which of the following statements cannot be true?

- (a) Innova is parked opposite Zen.
- (b) Scorpio is parked opposite Santro.
- (c) The number of cars parked between Corolla and Matiz is the same as the number of cars parked between Scorpio and Xylo.**
- (d) The number of cars parked to the left of Corolla is the same as the number of cars parked to the left of Yuva.

54. c Let Santro, Wagon R, Zen, Ritz, Yuva, Innova, Corolla, Matiz, Xylo and Scorpio be represented by S, W, Z, R, Y, I, C, M, X and Sc respectively. The arrangement can be started by fixing the positions of Z and Sc at the extreme left of the two rows. X can be parked either to the immediate right of Z/Sc or in the middle of the row. If X is parked in the middle of the row, statement (iv) is violated. Further analysis leads to the following table:

Row I	Innova	Corolla	Wagon R	Matiz	Scorpio/Zen
Row II	Zen/Scorpio	Xylo	Ritz	Yuva	Santro

Therefore, the number of cars parked between Corolla and Matiz cannot be the same as the number of cars parked between Scorpio and Xylo.

Directions for questions 55 and 56: Answer the questions on the basis of the information given below.

Each of the five players – Saurabh, Yubraj, Vajendar, Gombzi and Ambata – was picked by one of the two teams – Delhi Devils and Kolkata Riders – in the auction of players for Timbaktu Premier League. Two among the five players were batsmen and the rest three were bowlers. Each of the two teams picked at least one batsman and at least one bowler. Also, these five were the only players available for auction and they were offered for bidding in a particular order. It is also known that:

For questions 55 and 56:

Let Saurabh, Yubraj, Vajendar, Gombzi and Ambata be represented by S, Y, V, G and A respectively. Let Delhi Devils and Kolkata Riders be represented by DD and KR respectively. From statement (ii), either 2nd-3rd players or 3rd-4th players were the two batsmen. Therefore, the player picked 3rd was definitely a batsman and the players picked 1st and 5th were bowlers. From statement (iv), A and Y could be either 1st and 4th players or 2nd and 5th players, in no particular order. From statement (iii), Y could not be the player picked 1st or 5th.

55. a

Order of Selection	1	2	3	4	5
Player	A	V	S/G	Y	G/S
Team	-	DD	KR	KR	DD

or

Order of Selection	1 Bowl	2 Bowl	3 Bat	4 Bat	5 Bowl
Player	S/G	Y	G/S	V	A
Team	DD	KR	KR	DD	-

Hence, Yubraj was definitely not a batsman picked by Delhi Devils.

Directions for questions 58 to 60: Answer the questions on the basis of the information given below.

Eight players – Sonu, Monu, Karan, Arjun, Ram, Lakhan, Gopi and Kishan – participated in an interschool Chess tournament. There were three rounds in the tournament.

In Round-I, two groups of four players each were made. In each group, each player played with the rest three exactly once. In one group, two players won two matches each and the remaining two players won one match each. In the other group, each player won a different number of matches. In this round, Lakhan and Gopi were in the same group and Lakhan won more matches than Gopi. Similarly, Kishan and Ram were in the same group and Kishan won more matches than Ram.

Top two players from each group in Round-I, in terms of the number of matches won by them, moved to Round-II. Just two matches were played in Round-II and each of the four players played exactly one match. The winners of these matches moved to Round-III. The two finalists played a match in this round and the winner of this match was declared the winner of the tournament.

At the end of the tournament it was found that:

- (i) None of the players won all the matches played by him.
 - (ii) Sonu was one of the players in Round-III. He lost exactly two matches in the tournament.
 - (iii) The two finalists were from different groups of Round-I.
 - (iv) The number of matches won by Kishan, Karan and Arjun in Round-I was the same.

58. Who won the tournament?
(a) Lakhan **(b) Gopi** (c) Monu (d) Cannot be determined

59. For which of the following pairs of players was the difference between the numbers of matches won by them respectively in the tournament more than one?
(a) Monu and Kishan (b) Lakhan and Gopi (c) Gopi and Sonu **(d) Gopi and Monu**

60. What was the total number of matches won by Lakhan in the tournament?

(a) 2

(b) 3

(c) 4

(d) 5

For questions 58 to 60:

In one group the number of matches won by different players were 3, 2, 1 and 0. In the other group the number of matches won by different players were 2, 2, 1 and 1. For the two players who played the final, the number of matches won by them in Round-I could be either 3 or 2 and they must have won their respective matches in Round-II.

As Sonu lost exactly two matches in the tournament, he must have lost a match in Round-I and the final match. Thus it can be concluded that the number of matches won by Kishan, Karan and Arjun in Round-I was one each. As Ram and Kishan were in the same group in Round-I, Ram must have lost all his matches in Round-I and hence it can be concluded that Kishan and Arjun were in the same group in Round-I. As Lakhan won more matches than Gopi, both of them were in the same group as Ram and Kishan. The conclusions can be tabulated as shown below:

Round-I:

Group I	Lakhan (3), Gopi (2), Kishan (1), Ram (0)
Group II	Sonu (2), Monu (2), Karan (1), Arjun (1)

Round-II:

Sonu - Lakhan/Monu	Gopi - Lakhan/Monu
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Round-III:

Sonu - Gopi

58. b Gopi won the tournament.

59. d The difference between the numbers of matches won by Gopi and Monu respectively in the tournament was two.

60. b The total number of matches won by Lakhan in the tournament was 3.