No. of Questions : 120

Time : 2 Hours

Full Marks : 360

Note: (1) Attempt as many questions as you can. Each question carries **3** marks. **One** mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

Q1) Let 'f' be a real valued function defined on a set $D \subseteq \mathbb{R}$ and given by $f(x) = \frac{1}{\log_{10}(1-x)} + \sqrt{x+2}$. Then the set D is:

1) $x \geq 2$ **2)** $[-2, 0) \cup (0, 1)$

3) $\{x : x \in \mathbb{R}\}$ **4)** $[-2, 1]$

Q2) If $z = \frac{1}{1 - \text{Cos}\theta - i\text{Sin}\theta}$, then Re(z) is equal to:

1) $\frac{1}{2}$ **2)** $\frac{1}{2}.\text{Cot}\,\Theta$

3) $\text{Cot}\frac{\Theta}{2}$ **4)** 1

Q3) The number of terms in the expansion of $(1 - 3x + 3x^2 - x^3)^8$ is:

1) 32 **2)** 26

3) 25 **4)** 24

Q4) An arc is in the form of a parabola with its axis vertical and one of its end is at the vertex. The arc is 10m high and 5m wide at the base. How wide is it 2m from the vertex of parabola?

1) $\sqrt{\frac{5}{2}}$ m. **2)** $\frac{\sqrt{5}}{2}$ m.

3) $\sqrt{5}$ m. **4)** 2.5 m.

Q5) The length of latus-rectum of the parabola $x^2 - 4x - 8y + 12 = 0$ is:

1) 8 **2)** 10

3) 2 **4)** 4

Q6) If a matrix A is both symmetric and skew-symmetric, then:

1) A is a zero matrix **2)** A is a scalar matrix

3) A is a diagonal matrix **4)** A is a square matrix

Q7) Out of 9 outstanding students in a college, there are 4 boys and 5 girls. A team of 4 students is to be selected for a quiz programme. Find the probability that two are boys and two are girls?

1) $\frac{11}{21}$ **2)** $\frac{2}{63}$

3) $\frac{20}{41}$ **4)** $\frac{10}{21}$

Q8) The coefficient of x^6y^3 in the expansion of $(x + 2y)^9$ is:

1) 1348 **2)** 672

3) 670 **4)** 674

Q9) If the coefficients of three consecutive terms in the expansion of $(1 + x)^n$ are in the ratio 1 : 7 : 42, then value of 'n' is:

1) 55
2) 52
3) 30
4) 50

Q10) How many words can be formed by taking 4 letters at a time out of the letters of the word "MATHEMATICS"?

1) 1680
2) 1698
3) 2625
4) 2454

Q11) The number of terms with integral coefficients in the expansion of $(17^{1/3}+35^{1/2}x)^{600}$ is:

1) 301
2) 100
3) 101
4) 200

Q12) If a complex number z is given by $z = \frac{1 + 7i}{(2 - i)^2}$, then:

1) $\arg(z) = \frac{5\pi}{4}$
2) $\arg(z) = -\frac{\pi}{4}$
3) $\arg(z) = \frac{3\pi}{4}$
4) $\arg(z) = \frac{\pi}{4}$

Q13) If $(x + iy)^{1/3} = a + ib$, $x, y, a, b \in \mathbb{R}$, then $\frac{x}{a} + \frac{y}{b}$ is equal to:

1) $4(a^2 - b^2)$
2) $a - b$
3) $4(a^2 + b^2)$
4) $a + b$

Q14) The sum of all 3-digits numbers which leave the remainder 2, when divided by 3, is:

1) 154850
2) 109900
3) 154900
4) 164850

Q15) The value of $\int \sin^{-1}(\cos x)dx$, $0 < x < \pi/2$, is (C being constant of integration):

1) $\frac{\pi}{2}x + \frac{x^2}{2} + C$
2) $\frac{\pi}{2}x - \frac{x^2}{2} + C$
3) $\frac{\pi}{2} - x + C$
4) $-\frac{\sin x}{\sqrt{1-x^2}} + C$

Q16) In how many ways 5 boys and 3 girls can be seated in a row so that no two girls are together?

1) 2400
2) 1440
3) 14400
4) 7200

Q17) The radius of the circle $25x^2 + 25y^2 - 20x + 2y - 60 = 0$, is:

1) $\frac{8}{5}$
2) $\frac{\sqrt{1601}}{25}$
3) $\frac{\sqrt{464}}{5}$
4) $\frac{16}{25}$

Q18) A particle moves along a curve, $6y = x^3 + 2$ such that at some instant the y-coordinate is changing 8 times as fast as the x-coordinate. The position of the particle at that instant is:

1) (1, 4)
2) (2, 11)
3) (4, 11)
4) (4, 6)

Q19) The principal wants to arrange 5 students on the platform such that the boy Salim occupies the second position and the girl Sita is always adjacent to the girl Rita. The number of possible arrangement is:

1) 10
2) 5
3) 4
4) 8

Q20) The 4^{th} term from the end in the expansion of $\left(\frac{3}{x^2} - \frac{x^3}{6}\right)^7$ is :

1) $\frac{35}{32}x^6$
2) $\frac{35}{48}x^5$
3) $\frac{35}{32}x^5$
4) $\frac{35}{48}x^6$

Q21) The sum of the series $\frac{1}{\log_2 4} + \frac{1}{\log_4 4} + \frac{1}{\log_8 4} + \frac{1}{\log_{16} 4} + \ldots\ldots + \frac{1}{\log_{2^n} 4}$ is :

1) $\left[\frac{n(n+1)}{2}\right]^2$
2) $\frac{n(n+1)}{4}$
3) $n.\log_2 4$
4) $\frac{n(n+1)(2n+1)}{12}$

Q22) How many words can be formed from the letters of the word 'DAUGHTER' so that the vowels are never together?

1) 40320
2) 36000
3) 4320
4) 8! - 6!

Q23) The value of $\frac{i^{592} + i^{590} + i^{588} + i^{586} + i^{584}}{i^{582} + i^{580} + i^{578} + i^{576} + i^{574}}$ is $(i=\sqrt{-1})$:

1) -1
2) 0
3) 1
4) -2

Q24) If f(2) = 4 and f'(2) = 1, then value of $\lim_{x\to 2} \frac{x\,f(2) - 2\,f(x)}{x-2}$ is :

1) 4
2) 0
3) 2
4) 1

Q25) In a Geometric Progression (G.P.), if the $(m+n)^{th}$ term is 'p' and $(m-n)^{th}$ term is 'q' then its m^{th} term is:

1) p+q
2) $\frac{1}{2}(p+q)$
3) $\sqrt{pq}$
4) pq

Q26) The equation of the circle passing through (1, 0) and (0, 1) and having the smallest possible radius is:

1) $x^2 + y^2 + x - y + 1 = 0$
2) $x^2 + y^2 + x + y = 0$
3) $x^2 + y^2 - x - y = 0$
4) $x^2 + y^2 + x + y + 1 = 0$

Q27) The value of

$\int \frac{x^2+1}{(x+1)^2}\,dx$ is (C being constant of integration):

1) $\log|x+1| + \frac{1}{(x+1)^2} + C$
2) $x - 2\log|x+1| - \frac{2}{x+1} + C$
3) $x - \frac{2}{x+1} + C$
4) $x - \log|x+1| - \frac{1}{x+1} + C$

Q28) The value of

$\int_0^{\frac{\pi}{2}} \sin 2x \log \tan x\,dx$, is :

1) 1
2) 2π
3) -1
4) 0

Q29) The number of diagonals with n-sides polygon is:

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

Q30) Probability of solving a problem of A, B, C are $^1/_3$, $^2/_7$ and $^3/_8$ respectively. If all the three try to solve the problem simultaneously, find the probability that exactly one of them can solve it.

1) $\frac{35}{168}$
2) $\frac{101}{168}$
3) $\frac{25}{56}$
4) $\frac{1}{2}$

Q31) The value of

$\int e^{2x}\left(\frac{1+\sin 2x}{1+\cos 2x}\right)dx$ is (C being constant of integration):

1) $\frac{1}{2}e^{2x}\sec^2 x + C$
2) $e^{2x}\sec^2 x + C$
3) $\frac{1}{2}e^{2x}\tan x + C$
4) $e^{2x}\tan x + C$

Q32) If $R = \{(x, y) : x, y \in \mathbb{Z}, x^2 + y^2 \le 4\}$ is a relation defined on the set $\mathbb{Z}$ of integers, then the domain of R is:

1) {1, 2}
2) {0, 1, 2}
3) {0, 1, 2, 3, 4}
4) {-2, -1, 0, 1, 2}

Q33) The foci of the hyperbola coincide with the foci of the ellipse $\frac{x^2}{25} + \frac{y^2}{9} = 1$. If eccentricity of the hyperbola is 2, then equation of the hyperbola is:

1) $\frac{x^2}{4} - \frac{y^2}{12} = 1$
2) $\frac{x^2}{12} - \frac{y^2}{4} = 1$
3) $\frac{x^2}{16} - \frac{y^2}{36} = 1$
4) $\frac{x^2}{36} - \frac{y^2}{16} = 1$

Q34) If $y = \sin^{-1}x + \sin^{-1}\sqrt{1-x^2}$ and $x \in (-1, 0)$, then $\frac{dy}{dx}$ is equal to :

1) 0
2) $\frac{2}{\sqrt{1-x^2}}$
3) $\frac{1}{\sqrt{1-x^2}}$
4) $-\frac{1}{\sqrt{1-x^2}}$

Q35) The quadratic equation $x^2(a^2+b^2) + 2x(ac+bd) + (c^2+d^2) = 0$ has no real roots, if

1) ab = cd
2) ad = bc
3) ad ≠ bc
4) ab ≠ cd

Q36) Find the value of x, if

$$\begin{vmatrix} x-2 & 2x-3 & 3x-4 \\ x-4 & 2x-9 & 3x-16 \\ x-8 & 2x-27 & 3x-64 \end{vmatrix} = 0$$

1) 5
2) 2
3) 3
4) 4

Q37) In a flight of 600 Km an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time increased by 30 minutes. Duration of the flight is:

1) 2 hours
2) 1 hour
3) 30 minutes
4) 1 hour 20 minutes

Q38) It is given that at x = 1, the function $f(x) = x^4 - 62x^2 + ax + 9$ attains its maximum value on the interval [0, 2], the value of 'a' is:

1) 100
2) 119
3) 140
4) 120

Q39) If ω is a non-real cube root of unity and n is not a multiple of 3, then

$$\begin{vmatrix} 1 & \omega^n & \omega^{2n} \\ \omega^{2n} & 1 & \omega^n \\ \omega^n & \omega^{2n} & 1 \end{vmatrix}$$ is equal to :

1) 2n
2) n^2
3) 0
4) 1

Q40) The point on the curve $9y^2 = x^3$, where normal to the curve makes equal intercepts with the axes is:

1) $\left(4, \frac{8}{3}\right)$
2) $\left(1, \pm\frac{1}{3}\right)$
3) $\left(2, \pm\frac{2\sqrt{2}}{3}\right)$
4) $\left(2, \sqrt{\frac{8}{3}}\right)$

Q41) If the third term in the expansion of

$\left(\frac{1}{x} + x^{\log_{10} x}\right)^5$ is 1000, then the value of x is :

1) 10
2) 21
3) 100
4) 50

Q42) If $x = 1 + a + a^2 + a^3 + \ldots\ldots\infty$, $|a|<1$
and $y = 1 + b + b^2 + b^3 + \ldots\ldots\infty$, $|b|<1$
then value of $1 + ab + a^2b^2 + a^3b^3 + \ldots\ldots\infty$, is:

1) 1 + xy
2) $\frac{xy}{x + y - 1}$
3) $\frac{1 + xy}{x + y + 1}$
4) xy

Q43) The area bounded by the curves $y^2 = 4x$ and $x^2 = 4y$ is:

1) $\frac{3}{14}$ sq.units
2) $\frac{8}{3}$ sq.units
3) $\frac{14}{3}$ sq.units
4) $\frac{16}{3}$ sq.units

Q44) If ${}^nC_{15} = {}^nC_8$, then value of ${}^nC_{21}$ is:

1) 250
2) 251
3) 554
4) 253

Q45) The value of

$\int_0^{\frac{\pi}{4}} \sqrt{1 + \sin 2x}\ dx$ is :

1) $1 - \sqrt{2}$
2) 1
3) $\sqrt{2} - 1$
4) 0

Q46) In the first four papers each of 100 marks, Rishi got 95, 72, 73, 83 marks. If he wants an average of greater than or equal to 75 marks and less than 80 marks, the range of marks he should score in the fifth paper, is:

1) between 55 and 75 marks
2) between 60 and 70 marks
3) between 70 and 80 marks
4) between 52 and 77 marks

Q47) If the sum of n terms of an A.P. is $3n^2 + 5n$ then which of its term is 164?

1) 26^{th}
2) 28^{th}
3) 30^{th}
4) 27^{th}

Q48) A bag contains 4 red and 4 blue balls. Four balls are drawn one-by-one from the bag, then the probability that the drawn balls are in alternate colour, is:

1) $\frac{6}{35}$
2) $\frac{1}{35}$
3) $\frac{9}{31}$
4) $\frac{7}{31}$

Q49) Set of solutions of the equation $z^2 + |z| = 0$, where z is a complex number (z=x+iy), is:

1) {0, i, 1}
2) {0, i, -i}
3) {0, i, 2i}
4) {0, 1}

Q50) The probability that at least one of the events A and B occurs is 0.6. If A and B occur simultaneously with probability 0.2, then $P(\bar{A}) + P(\bar{B})$ is:

1) 0.4
2) 1.6
3) 0.8
4) 1.2

Q51) The equation of the smallest degree with the real coefficients having (1 + i) as one of the roots is:

1) $x^2 + x + 1 = 0$
2) $x^2 - 2x + 2 = 0$
3) $x^2 + x + 2 = 0$
4) $x^2 + 2x + 2 = 0$

Q52) The letters of the word ' RANDOM ' are written in all possible orders and these words are written in dictionary. The rank of word "RANDOM" is:

1) 612
2) 610
3) 600
4) 614

Q53) If

$A = \begin{bmatrix} 1 & na \\ 0 & 1 \end{bmatrix}$, then A^n is equal to $(n \in \mathbb{N})$:

1) $\begin{bmatrix} 1 & na \\ 0 & 1 \end{bmatrix}$
2) $\begin{bmatrix} 1 & na \\ 0 & n \end{bmatrix}$
3) $\begin{bmatrix} 1 & n^2a \\ 0 & 1 \end{bmatrix}$
4) $\begin{bmatrix} n & na \\ 0 & 1 \end{bmatrix}$

Q54) The eccentricity of the conic $9x^2 - 16y^2 = 144$ is:

1) $\frac{5}{3}$
2) $\frac{5}{4}$
3) $\frac{3}{5}$
4) $\frac{\sqrt{7}}{4}$

Q55) A box contains 5 different red balls and 6 different white balls. In how many ways can 6 balls be selected so that there are at least two balls of each colour?

1) 425
2) 525
3) 400
4) 625

Q56) Find the least positive integral value of 'k', if

$$\begin{bmatrix} \cos\frac{2\pi}{7} & -\sin\frac{2\pi}{7} \\ \sin\frac{2\pi}{7} & \cos\frac{2\pi}{7} \end{bmatrix}^k = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

1) 6
2) 5
3) 7
4) 8

Q57) For a post three persons A, B and C appear in the interview. The probability of A being selected is twice that of B and the probability of B being selected is thrice that of C. The probability of A being selected is:

1) $\frac{2}{5}$
2) $\frac{3}{10}$
3) $\frac{3}{5}$
4) $\frac{1}{10}$

Q58) The equation of the parabola, whose vertex is at (2, 1) and directrix is x = y - 1, is given by:

1) $x^2 + 2y^2 - 4x + y = 18$
2) $x^2 - 14x = 4xy$
3) $x^2 + y^2 - 14x + 2y + 2xy + 17 = 0$
4) $y^2 = 8x + 1$

Q59) Value of x in the inequation $|x-1| + |x-2| \geq 4$, is

1) $\left[-\frac{1}{2}, \frac{7}{2}\right]$
2) $\left(-\infty, -\frac{1}{2}\right] \cup \left[\frac{7}{2}, \infty\right)$
3) $\left(-\infty, +\frac{1}{2}\right] \cup \left[\frac{7}{2}, \infty\right]$
4) $\left(-\infty, -\frac{1}{2}\right)$

Q60) If S_n denotes the sum of first n terms of the series S_n = 3+7+13+21+31+.....to n terms, then the value of S_n is:

1) $\frac{n^2}{3}(3n + 5)$
2) $\frac{n}{6}(n^2 + n + 3)$
3) $\frac{n}{2}(n^2 + n + 5)$
4) $\frac{n}{3}(n^2 + 3n + 5)$

Q61) If z = 2 - 3i, then value of $4z^3 - 3z^2 + 169$ is:

1) 0
2) 140
3) 160
4) 199

Q62) Solution of the inequation given below is:

$$\left|\frac{2}{x-4}\right| > 1, x \neq 4$$

1) $(2, 4) \cup (4, 6)$
2) [2, 6]
3) [2, 4)
4) (2, 6)

Q63) If n arithmetic means are inserted between 20 and 80 such that the ratio of the first mean to the last mean is 1 : 3, then the value of 'n' is:

1) 10
2) 11
3) 15
4) 12

Q64) If f: $\mathbb{R} \to \mathbb{R}$ be a function defined by $f(x) = \frac{x^2}{1+x^2}$, then the range of the function 'f' is:

1) $\mathbb{R}$
2) [0, 1)
3) $\mathbb{R}\setminus\{1\}$
4) [0, ∞)

Q65) If 'f' is a function satisfying $f(x+y)=f(x).f(y)$ for all $x,y \in \mathbb{N}$ such that $f(1) = 3$ and $\sum_{x=1}^{n} f(x) = 120$, then the value of 'n' is :

1) 6
2) 8
3) 7
4) 4

Q66) If x > 0, then sum of the infinite series

$$\frac{1}{1+x} - \frac{1-x}{(1+x)^2} + \frac{(1-x)^2}{(1+x)^3} - \frac{(1-x)^3}{(1+x)^4} + \ldots\ldots\infty, \text{ is :}$$

1) $\frac{3}{4}$
2) 0
3) $\frac{1}{2}$
4) 1

Q67) If $\frac{3 + 2i\sin\theta}{1 - 2i\sin\theta}$ is a purely real then the value of θ is (n being integer):

1) $\theta = (n + 1)\frac{\pi}{2}$
2) $\theta = n\pi$
3) $\theta = \frac{\pi}{2}$
4) $\theta = \frac{n\pi}{2}$

Q68) Two dice are thrown. The probability of getting an odd number on the first die and multiple of 3 on the other, is:

1) $\frac{1}{5}$
2) $\frac{1}{3}$
3) $\frac{5}{6}$
4) $\frac{1}{6}$

(1,3) (1,6)
(3,3) (3,6)
(5,3) (5,6)

Q69) If

$f(x) = \log\left(\frac{1+x}{1-x}\right)$, then $f\left(\frac{2x}{1+x^2}\right)$ is equal to :

1) $[f(x)]^3$
2) $[f(x)]^2$
3) $3f(x)$
4) $2f(x)$

Q70) If a line perpendicular to the line segment joining the points (1, 0) and (2, 3) divides in ratio 1 : n, then equation of the line is:

1) (n + 1)x - (n - 2)y = n + 11
2) nx + (1 + n)y = n + 11
3) (n + 1)x + 3(n + 1)y = n + 11
4) (n + 1)x + 3(n + 2)y = n + 10

Q71) If $(a + b)^2x^2 + 8(a^2 - b^2)x + 16(a - b)^2 = 0$, then the value of x is:

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

Q72) The sum of all the natural numbers that can be formed with the digits 2, 3, 4, 5 taken all at a time is:

1) 93004
2) 93240
3) 90002
4) 93324

Q73) The locus of the point which moves so that the sum of its distances from (3, 0) and (-3, 0) is less than 9, is:

1) $\frac{x^2}{36} + \frac{y^2}{16} < 1$
2) $36x^2 + 20y^2 < 405$
3) $20x^2 + 36y^2 < 405$
4) $16x^2 + 20y^2 < 399$

Q74) The domain of the function $f(x) = \sqrt{x-3-2\sqrt{x-4}} - \sqrt{x-3+2\sqrt{x-4}}$ is, where 'f' be a real valued function of real variable.

1) [4 , ∞)
2) [2 , ∞)
3) $\mathbb{R}^+$
4) (-∞ , 4]

Q75) If

$S = 1 + \frac{1+2}{2} + \frac{1+2+3}{3} + \frac{1+2+3+4}{4} + \ldots\ldots$ n terms then the value of 'S' is :

1) $\frac{n(n + 2)}{4}$
2) $\frac{n^2}{2}$
3) $\frac{n(n + 1)(2n + 1)}{12}$
4) $\frac{n(n + 3)}{4}$

Q76) The axes of an ellipse are along the coordinate axes, vertices are at (0, ± 10) and eccentricity $e=4/5$. The equation of the ellipse is:

1) $\frac{x^2}{64} + \frac{y^2}{100} = 1$
2) $\frac{x^2}{164} + \frac{y^2}{36} = 1$
3) $\frac{x^2}{36} + \frac{y^2}{164} = 1$
4) $\frac{x^2}{36} + \frac{y^2}{100} = 1$

Q77) A rod AB of length 15 cm rests in between two coordinate axis in such a way that the end point A lies on x-axis and end point B lies on y-axis. A point P is taken on the rod in such a way that AP = 6cm. If the locus of P is an ellipse, then its eccentricity(e) is:

1) $\sqrt{\frac{117}{81}}$ 2) $\frac{\sqrt{5}}{3}$

3) $\sqrt{\frac{5}{7}}$ 4) $\frac{5}{3}$

Q78) A line passes through the point (3, -2). The locus of the middle point of the portion of the line intercepted between the axis is:

1) $3x - 2y = 2$ 2) $3x - 2y = 2xy$

3) $\frac{2x}{3} + \frac{y}{1} = 1$ 4) $3y - 2x = 2xy$

Q79) If $y = \log_x 2$,

then $\frac{dy}{dx}$ is equal to :

1) $2\log_x 2 \cdot \left(\frac{\log_e 2}{x}\right)$ 2) $-\frac{1}{(\log_2 x)} \cdot \frac{1}{(x.\log_e 2)}$

3) $-\frac{1}{(\log_2 x)^2} \cdot \frac{1}{(x\log_e 2)}$ 4) $(\log_x 2).\log_e 2$

Q80) If B is a matrix, such that

$B.\begin{bmatrix}1 & -2\\ 1 & 4\end{bmatrix} = \begin{bmatrix}6 & 0\\ 0 & 6\end{bmatrix}$, then value of B is :

1) $\begin{bmatrix}4 & -2\\ -1 & 1\end{bmatrix}$ 2) $\begin{bmatrix}4 & -3\\ 2 & -1\end{bmatrix}$

3) $\begin{bmatrix}4 & 2\\ -1 & 1\end{bmatrix}$ 4) $\begin{bmatrix}4 & 3\\ 2 & 1\end{bmatrix}$

Q81) If in a class of 37 students the places of Anuradha and Saroj are 10th and 16th respectively, what are their places from the last?

1) 27th and 22nd 2) 27th and 21st

3) 28th and 20th 4) 28th and 22nd

Directions (Question Nos.82 to 85): Read the following information carefully and answer the questions given below:

Ravi and Kunal are good in Hockey and Volleyball. Sachin and Ravi are good in Hockey and baseball. Gaurav and Kunal are good in Cricket and Volleyball. Sachin, Gaurav and Michael are good is Football and Baseball.

Q82) Who is good in Hockey, Baseball and Football?

1) Ravi 2) Gaurav

3) Kunal 4) Sachin

Q83) Who is good in Baseball, Cricket, Volleyball and Football?

1) Gaurav 2) Ravi

3) Kunal 4) Sachin

Q84) Who is good in Baseball, Volleyball and Hockey?

1) Ravi 2) Gaurav

3) Sachin 4) Kunal

Q85) Who is good in Hockey, Cricket and Volleyball?

1) Sachin 2) Gaurav

3) Ravi 4) Kunal

Directions (Question Nos.86 to 89): In each of the following questions, a statement/group of statements is given followed by some conclusions, choose the conclusion which logically follows from the given statements.

Q86) **Statements:**

1. All members of Mohan's family are honest.
2. Some members of Mohan's family are not employed.
3. Some employed persons are not honest.
4. Some honest persons are not employed.

Conclusions:

1) The employed members of Mohan's family are not honest. 2) The employed members of Mohan's family are honest.

3) The honest members of Mohan's family are not employed. 4) All members of Mohan's family are employed.

Q87) **Statements:**

1. I watch T.V. only if I am bored.
2. I am never bored when I have my brother's company.
3. Whenever I go to the theatre I take my brother along.

Conclusions:

1) If I am not bored, I do not watch T.V. 2) If I am bored, I seek my brother's company.

3) If I am not with my brother then I watch T.V. 4) If I am bored, I watch T.V.

Q88) **Statements:**

a. Processed meat is a perishable food.
b. All perishable foods are packed in sealed tins.
c. Sealed tins some times do not contain processed meat.

Conclusions:

1) Sealed tins always contain perishable food.
2) Non - perishable foods are never packed in sealed tins.
3) Processed meat is sometimes not packed in sealed tins.
4) Processed meat is always packed in sealed tins.

Q89) **Statements:**

1. Only students can participate in the race.
2. Some participants in the race are females.
3. All female participants in the race are invited for coaching.

Conclusions:

1) All participants in the race are students.
2) All participants in the race are invited for coaching.
3) All participants in the race are males.
4) All students are invited for coaching.

Directions (Question Nos.90 to 94): In each of the following questions one number-series is given in which one term is wrong. Find out the wrong term.

Q90) 5, 7, 11, 20, 35, 67

1) 35
2) 11
3) 67
4) 20

Q91) 0, 3, 8, 15, 24, 36, 48

1) 15
2) 24
3) 36
4) 48

Q92) 5, 12, 19, 33, 47, 75, 104

1) 75
2) 104
3) 33
4) 47

Q93) 8, 36, 149, 596, 2388, 9556

1) 9556
2) 149
3) 596
4) 2388

Q94) 4, 11, 21, 34, 49, 69, 91

1) 49
2) 34
3) 69
4) 21

Q95) In the following question one word is different from the rest. Find out the word which does not belong to the group.

1) Sun
2) Moon
3) Star
4) Sky

Directions (Question Nos.96 to 105): Which number should come in place of question mark (?) in the following questions.

Q96)

1) 14
2) 10
3) 6
4) 8

Q97)

1) 13
2) 30
3) 18
4) -30

Q98)

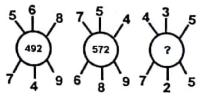
1	7	9
2	14	?
3	105	117

1) 20
2) 16
3) 12
4) 26

Q99)

1) 8 **2)** 10
3) 21 **4)** 16

Q100)

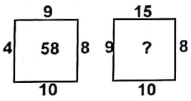


1) 135 **2)** 130
3) 115 **4)** 140

Q101)

1) 5 **2)** 4
3) 6 **4)** 7

Q102)

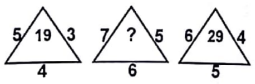


1) 63 **2)** 100
3) 78 **4)** 117

Q103)

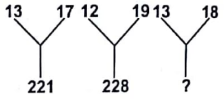
1) 21 **2)** 20
3) 13 **4)** 14

Q104)



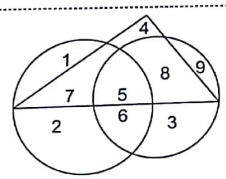
1) 41 **2)** 37
3) 25 **4)** 47

Q105)



1) 312 **2)** 229
3) 31 **4)** 234

Directions (Question Nos.106 to 110): These questions are based on the following diagram in which the triangle represents female graduates. Small circle represents self - employed females having a car and the big circle represents self - employed females with bank loan facility. Numbers are shown in the different sections of the diagram. On the basis of these numbers answer the following questions:



Q106) How many self - employed female graduates are with bank loan facility?

1) 7 **2)** 20
3) 12 **4)** 5

Q107) How many non - graduate females are self - employed?

1) 9 **2)** 12
3) 21 **4)** 11

Q108) How many non - graduate self - employed females are with bank loan facility?

1) 9 **2)** 12
3) 3 **4)** 8

Q109) How many female graduates are self - employed and having a car?

1) 12 **2)** 15
3) 20 **4)** 13

Q110) How many female graduates are not self - employed?

1) 4 **2)** 15
3) 10 **4)** 12

Directions (Question Nos.111 to 113): In each of the following problems, there is one question and three statements I, II and III given below the question. You have to decide whether the data given in the statements is sufficient to answer the question. Read all the statements carefully and find out that probable pair which can be sufficient to answer the question. Any one such alternative which contains the statement or a pair of statements sufficient to answer the question, will be your answer. For example, if only statement I is sufficient to answer the question, then statements I and II together should not be accepted as answer to the question. Remember out of the three statements, each of them alone can also be sufficient to answer the question. In such cases for example, your answer should be taken as Only I or Only II or only III and not only I.

Q111) Pankaj is younger than Sunita and Rupali is older than Tom. Who among them is the oldest?

I. Rupali is older than Pankaj
II. Sunita is older than Rupali.
III. Tom is youngest among all.

1) Only III **2)** Only II
3) I, II and III all together **4)** I & II together

Q112) Five persons - A,B,C,D and E are sitting in a row. Who is sitting in the middle?

I. B is between E and C
II. B is to the right of E.
III. D is between A and E.

1) I and II together **2)** II and III together
3) I and III together **4)** I, II and III together

Q113) What does 'come' represent in a code language?

I. 'pit na tac' means 'come and go' in that code language.
II. 'ja ta da' means 'you are good' in that code language.
III. 'na da rac' means 'you can come ' in that code language.

1) I and II together **2)** II and III together
3) I and III together **4)** I, II and III all together

Q114) As a 'Shirt' is related to 'Cloth' in the same way 'Chair' is related to what?

1) Repairing **2)** Wood
3) Weaving **4)** Sit

Q115) In the following series, find the term in place of question - mark (?) -
3, 8, 27, 112, 565,?

1) 3396 **2)** 3400
3) 1596 **4)** 2266

Q116) If the following words are arranged in the dictionary order then which will be the last word?

1) Drench **2)** Dredge
3) Dream **4)** Dread

Q117) As 'Earthquake' is related to 'Earth', similarly 'Thundering' is related to what?

1) Sky **2)** Earth
3) Fair **4)** Sea

Q118) As 'Author' is related to 'Writing', similarly 'Thief' is related to what?

1) To steal **2)** To wonder
3) To feel **4)** To night

Q119) **Statement:** "Some kings are not beggars." If this fact is false then which of the following conclusions is false: -

Conclusions:

I All kings are beggars.
II Some beggars are king.
III Some kings are beggars.
IV All beggars are king.
V No king is beggar.

1) All **2)** Only I and IV
3) Only II and III **4)** Only V

Q120) Letters of which of the alternative answers when placed at the blank places one after another will complete the given letter - series?

a _ b b c _ a a b _ c c a _ b b c c

1) b a c b **2)** a c b a
3) a b b a **4)** c a b a