

1. If  $f(x) = x^n$ , then  $f(1) + \frac{f'(1)}{1!} + \frac{f''(1)}{2!} + \dots + \frac{f^{(n)}(1)}{n!}$  is equal to :
- (a) 0 (b)  $2^n$  (c)  $2^{n-1}$  (d)  $\frac{n(n+1)}{2}$
2. Let  $\alpha, \beta, \gamma$  be distinct real numbers. The points with position vectors  $\alpha\hat{i} + \beta\hat{j} + \gamma\hat{k}$ ,  $\beta\hat{i} + \gamma\hat{j} + \alpha\hat{k}$ ,  $\gamma\hat{i} + \alpha\hat{j} + \beta\hat{k}$
- (a) are collinear  
 (b) form an equilateral triangle  
 (c) form a scalene triangle  
 (d) form a right angled triangle
3. The area included between the curve  $y = x^3$  and  $y = 4x^2$  is :
- (a) 64 (b)  $64/3$  (c)  $64/9$  (d) none
4. If  $\vec{a}, \vec{b}, \vec{c}$  are three non-collinear vectors such that  $\vec{a} \times \vec{b} = \vec{b} \times \vec{c} = \vec{c} \times \vec{a}$ , then find  $\vec{a} + \vec{b} + \vec{c}$
- (a) 0 (b)  $3\vec{a}$  (c)  $3\vec{b}$  (d)  $3\vec{c}$
5. The tangent to a curve  $f(x)$  makes an angle  $\pi/6$  at  $x = 1$  and  $\pi/4$  at  $x = 4$  with the x-axis. The value of  $\int_1^4 f'(x) f''(x) dx$  is :
- (a)  $\frac{\sqrt{3} + 1}{3}$  (b)  $\frac{\sqrt{3} - 1}{3}$  (c) 3 (d)  $1/3$
6. The angles of a triangle are in A.P. If  $b : c = \sqrt{3} / \sqrt{2}$  then angle A is equal to :
- (a)  $75^\circ$  (b)  $105^\circ$  (c)  $30^\circ$  (d)  $45^\circ$
7.  $f(x) = \sin x - \tan x, x \in \left(0, \frac{\pi}{2}\right)$ , then tangent at any point on the curve :
- (a) below the curve (b) above the curve  
 (c) on the curve (d) none
8. A bag contains 5 red and 3 white marbles and another bag contains 2 red and 6 white marbles. 2 marbles are drawn at random from each bag. What is the probability that the marbles drawn are of same colours :
- (a)  $\frac{55}{784}$  (b)  $\frac{45}{784}$  (c)  $\frac{55}{56}$  (d) none
9. The domain of the function  $\sqrt{\log_{0.4} \frac{(x-1)}{(x+5)} \cdot \frac{1}{x^2 - 6}}$
- (a)  $\{x : x < 0, x \neq -6\}$  (b)  $\{x : x > 0, x \neq 6\}$   
 (c)  $\{x : x > 1, x \neq 6\}$  (d) none
10. A and B are independent events. The probability that both will occur is  $1/8$  and that neither of them occur is  $3/8$ . If  $P(A) > P(B)$ . Find  $P(B)$
- (a)  $1/2$  (b)  $1/4$  (c)  $3/4$  (d) none
11. A, B and C are shooting with probabilities  $\frac{3}{5}, \frac{2}{5}, \frac{3}{4}$  respectively. The probability that the target is hit by at least two shots is :
- (a) 0.63 (b) 0.69 (c) 0.18 (d) 0.82
12. The equation of the circle passing through (2, 3) and (-1, 1) with its centre lying on the line  $x - 3y - 11 = 0$  is
- (a)  $x^2 + y^2 - 7x + 5y - 14 = 0$   
 (b)  $x^2 - y^2 + 7x - 5y + 12 = 0$   
 (c)  $x^2 + y^2 + 7x + 5y - 14 = 0$   
 (d)  $x^2 + y^2 + 7x + 5y + 14 = 0$
13. The distance between the pair of straight line  $x^2 + 2\sqrt{3}xy + 2y^2 + 4x + 1 = 0$
- (a)  $2\sqrt{3}$  (b) 2 (c)  $\sqrt{3}$  (d) none
14. A particle is acted upon by constant force  $4\hat{i} + \hat{j} - 3\hat{k}$  and  $3\hat{i} + \hat{j} - \hat{k}$  which displace it from a point  $\hat{i} + 2\hat{j} + 3\hat{k}$  to the point  $5\hat{i} + 4\hat{j} + \hat{k}$ . The work done in standard units by the forces is given by :
- (a) 25 (b) 30 (c) 40 (d) 15 w
15. The direction of velocity of a boat relative to water is  $3\hat{i} + 4\hat{j}$  and that of water relative to earth is  $\hat{i} - 3\hat{j}$  what is the magnitude and direction of boat w.r.t. earth ?
- (a)  $\sqrt{15}, \tan^{-1}(-1/4)$  North  
 (b)  $\sqrt{17}, \tan^{-1}(1/4)$   
 (c)  $\sqrt{15}, \tan^{-1}(1/2)$   
 (d) none
16. The equation of line passing through (-2, 3) and perpendicular to  $2x - 3y + 6 = 0$  is given by :
- (a)  $2x + 3y - 5 = 0$  (b)  $3x + 2y = 0$   
 (c)  $3x + 2y = 9$  (d)  $2x - 3y + 11 = 0$

17. If  $a = 1 + \log_x yz$ ,  $b = 1 + \log_y xz$ ,  $c = 1 + \log_z xy$ , then  $ab + bc + ca$  is equal to :  
 (a) 0 (b)  $2abc$   
 (c)  $abc$  (d)  $a^2 + b^2 + c^2$
18.  $m$ th term of H.P. is  $n$  and its  $n$ th term is  $m$ , then find  $(m + n)$ th term ?  
 (a)  $\frac{mn}{m+n}$  (b)  $\frac{m+n}{mn}$  (c)  $\frac{m-n}{mn}$  (d) none
19. The number of roots of the equation  $x^3 + x^2 + 3 + 2\sin x = 0$ ,  $x \in [-\pi, \pi]$   
 (a) 2 (b) 3 (c) 4 (d) none
20.  $T_n$  represents the no. of triangles formed from a polygon having  $n$  vertices. If  $T_{n+1} - T_n = 21$ , then  $n$  is equal to :  
 (a) 6 (b) 7 (c) 8 (d) none
21. The ages of students in a group are in A.P. If the youngest is 5 years old, and the oldest is 15 years old, then the average age of the group is :  
 (a) 5 (b) 15 (c) 10 (d) can't say
22. If  $x + y = 1$  and  $x^3 + y^3 = 4$ , then  $x^5 + y^5 =$   
 (a) 11 (b) 12 (c) 13 (d) 22
23. If  $a, b, c$  are in A.P., then  $\tan \frac{A}{2} \cdot \tan \frac{C}{2} =$   
 (a)  $\frac{1}{3}, \frac{2}{3}$  (b)  $2/3$  (c)  $3/2$  (d) none
24. If  $f(x) = \max(2x + 1, 3 - 4x)$ . Then the minimum value of  $f(x)$   
 (a)  $1/3$  (b)  $5/3$  (c)  $3/2$  (d) none
25. A is 8 miles east of B, C is 10 miles north of B, D is 13 miles east of C, E is 2 mile north of D. Then the shortest distance between A and E is :  
 (a) 13 (b) 12 (c) 5 (d) none
26. In a class, 50 student play cricket, 20 play hockey, 10 play both the games, then the no. of students playing at least one game is :  
 (a) 30 (b) 60 (c) 70 (d) none
27. If  $A$  and  $B$  are two sets, then  $A' - B'$   
 (a)  $B - A$  (b)  $A - B$  (c)  $\phi$  (d) none
28. Exact value of  $\sec \frac{7\pi}{12}$   
 (a)  $\sqrt{3} - 1$  (b)  $\sqrt{3} + 1$   
 (c)  $-\sqrt{2}(\sqrt{3} + 1)$  (d)  $2\sqrt{2}(\sqrt{3} + 1)$
29. If  $A = \begin{bmatrix} 1 & 2 & 15 \\ 3 & 4 & 11 \\ 5 & 6 & 7 \end{bmatrix}$ , let  $\lambda_1, \lambda_2, \lambda_3$  be its eigen value then  
 $(1 + \lambda_1)(1 + \lambda_2)(1 + \lambda_3) =$   
 (a) 0 (b)  $-95$  (c)  $-4$  (d) 12
30. A student calculated mean and standard deviation of 100 observation as 40 and 51 respectively. Lates it was discovered that he was taken by mistake 50 instead of 40, then new standard deviation is :  
 (a) 5 (b) 4.9 (c) 5.1 (d) none
31. Find the 6th term in the expansion of  $(1 - 2x^2)^{1/2}$  :  
 (a)  $\frac{7}{8}x^5$  (b)  $-\frac{7}{8}x^5$  (c)  $\frac{7}{8}x^{10}$  (d)  $-\frac{7}{8}x^{10}$
32. The area included between the curves  $y = xe^x$  and  $y = xe^{-x}$   
 (a) 0 (b)  $-1$  (c) 1 (d) none
33.  $(\sqrt{5} - 2)^{1/3} - (\sqrt{5} + 2)^{1/3}$  will be :  
 (a) Irrational (b) one  
 (c) rational but not integer (d) none
34. Of the following sets, the one that includes all values of  $x$  which will satisfy  $2x - 3 > 7 - x$  is :  
 (a)  $x > 4$  (b)  $x < \frac{10}{3}$  (c)  $x = \frac{10}{3}$  (d)  $x > \frac{10}{3}$
35. Numerical value of the expression  $\left| \frac{3x^3 + 1}{2x^2 + 2} \right|$  for  $x = -3$  is :  
 (a) 4 (b) 2 (c) 3 (d) 0
36. The product of perpendiculars from  $(2, -1)$  to the pair of lines  $2x^2 + 6xy + y^2 = 0$  is :  
 (a)  $\frac{3}{2}$  (b)  $\frac{\sqrt{3}}{2}$   
 (c)  $\frac{3}{37}$  (d)  $\frac{3}{\sqrt{37}}$
37. If  $f'(x) = g(x)$  and  $g'(x) = -f(x)$  for all  $x$  and  $f(3) = 5 = f'(3)$  then  $f^2(19) + g^2(19)$  is :  
 (a) 16 (b) 32  
 (c) 64 (d) none
38. Let  $a, b$ , and  $c$  be such that  
 $\frac{1}{(1-x)(1-2x)(1-3x)} = \frac{a}{1-x} + \frac{b}{1-2x} + \frac{c}{1-3x}$ , then  
 $\frac{a}{1} + \frac{b}{3} + \frac{c}{5} =$

- (a) 1/15    (b) 1/6    (c) 1/5    (d) 1/3

39. If  $0 < y < 2^{1/3}$  and  $x(y^3 - 1) = 1$ , then

$$\frac{2}{x} + \frac{2}{3x^3} + \frac{2}{5x^5} + \dots =$$

- (a)  $\log\left[\frac{y^3}{2-y^3}\right]$     (b)  $\log\left[\frac{y^3}{1-y^3}\right]$   
 (c)  $\log\left[\frac{2y^3}{1-y^3}\right]$     (d)  $\log\left[\frac{y^3}{1-2y^3}\right]$

40.  $2C_0 + \frac{2^2}{2}C_1 + \frac{2^3}{3}C_2 + \dots + \frac{2^{11}}{11}C_{10} =$

- (a)  $\frac{3^{11}-1}{11}$     (b)  $\frac{2^{11}-1}{11}$     (c)  $\frac{11^3-1}{11}$     (d)  $\frac{11^2-1}{11}$

41. The range of the function  $f(x) = {}^{7-x}P_{x-3}$  is

- (a) {1,2,3,4}    (b) {1,2,3,4,5,6}  
 (c) {1,2,3}    (d) {1,2,3,4,5}

42. If one root of the equation  $x^2 + px + 12 = 0$  is 4 and  $x^2 + px + q = 0$  has equal roots, then the value of  $q$  is :

- (a) 3    (b) 12    (c) 49/4    (d) none

43. A point on the parabola  $y^2 = 18x$  at which the ordinate increases at twice the rate of the abscissa is :

- (a)  $\left(\frac{-9}{8}, \frac{9}{2}\right)$     (b) (2, -4)  
 (c) (2, 4)    (d)  $\left(\frac{9}{8}, \frac{9}{2}\right)$

44. The value of  $\int_{-2}^3 |1-x^2| dx$  is

- (a) 7/3    (b) 14/3  
 (c) 28/3    (d) 1/3

45. The area of the region bounded by the curves  $y = |x-2|$ ,  $x=1$ ,  $x=3$  and the x-axis is :

- (a) 3    (b) 2    (c) 1    (d) 4

46. Distance between two parallel planes  $2x + y + 2z = 8$

and  $4x + 2y + 4z + 5 = 0$  is :

- (a) 7/2    (b) 5/2    (c) 3/2    (d) 9/2

47. A random variable X has the probability distribution :

X :	1	2	3	4	5	6	7	8
P(X) :	0.15	0.23	0.12	0.10	0.20	0.08	0.07	0.05

For the events  $E = \{X \text{ is a prime number}\}$  and  $F = \{X < 4\}$ , the probability  $P(E \cup F)$  is :

- (a) 0.35    (b) 0.77    (c) 0.87    (d) 0.50

48. If the lines  $2x + 3y + 1 = 0$  and  $3x - y - 4 = 0$  lie along diameters of a circle of circumference  $10\pi$ , then the equation of the circle is :

- (a)  $x^2 + y^2 + 2x + 2y - 23 = 0$   
 (b)  $x^2 + y^2 - 2x - 2y - 23 = 0$   
 (c)  $x^2 + y^2 - 2x + 2y - 23 = 0$   
 (d)  $x^2 + y^2 + 2x - 2y - 23 = 0$

49.  $\int \frac{dx}{\cos x - \sin x}$  is equal to :

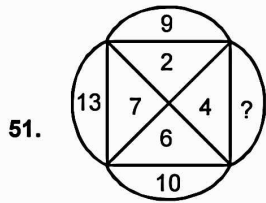
- (a)  $\frac{1}{\sqrt{2}} \log \left| \tan \left( \frac{x}{2} - \frac{3\pi}{8} \right) \right| + c$   
 (b)  $\frac{1}{\sqrt{2}} \log \left| \cot \left( \frac{x}{2} \right) \right| + c$   
 (c)  $\frac{1}{\sqrt{2}} \log \left| \tan \left( \frac{x}{2} - \frac{\pi}{8} \right) \right| + c$   
 (d)  $\frac{1}{\sqrt{2}} \log \left| \tan \left( \frac{x}{2} - \frac{3\pi}{8} \right) \right| + c$

50.  $A = \begin{pmatrix} 0 & 0 & -1 \\ 0 & -1 & 0 \\ -1 & 0 & 0 \end{pmatrix}$  The only correct statement about the

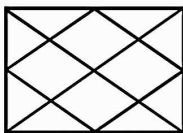
matrix A is :

- (a)  $A^{-1}$  does not exist  
 (b)  $A = (-1)I$ , where  $I$  is a unit matrix  
 (c) A is a zero matrix  
 (d)  $A^2 = I$

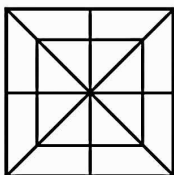
## Analytical Ability & Logical Reasoning



- (a) 9 (b) 6 (c) 10 (d) 12
52. If + means  $\div$ , - means  $\times$ ,  $\div$  means - and  $\times$  means +, then the value of  $10 - 14 \times 8 + 2 \div 16 + 8$  :
- (a) 142 (b) 144 (c) 145 (d) none
53. A cube has its 6 faces having different colours( red , blue , green , yellow , white and orange ). It has been given that green is opposite to red, blue is between green and red, yellow is adjacent to orange, What colours are on the adjacent faces of face having yellow colours:
- (a) green, orange, blue, red  
 (b) red, blue, green, white  
 (c) green, blue, white, orange  
 (d) green, orange, red, white
54. Mona was 3 times as old as Radha 6 years ago and will be  $\frac{5}{3}$  times as old as Radha after 6 years. What is the present age of Radha ?
- (a) 11 (b) 12 (c) 13 (d) none
55. There are five books P, Q, R, S, T. R is above S, Q is below P. P is below S, Q is below T. Which book occupies the lowest place.
- (a) P (b) Q (c) R (d) S
56. Count the number of Pentagons :



- (a) 12 (b) 13 (c) 16 (d) none
57. N F M A T. The given letters have certain similar characteristics. One is different from others. Find the odd one :
- (a) N (b) F (c) A (d) T
58. Number of triangles and squares in the following figures:



- (a) 32 triangles, 10 squares  
 (b) 32 triangles, 8 squares  
 (c) 28 triangles, 10 squares  
 (d) 28 triangles, 8 squares
59. A, B and C gets into partnership. A invests thrice as B and B invests  $\frac{2}{3}$  as C. If the total profit gained of the end of the year is 6600/-. Calculate B's share :
- (a) 2000 (b) 2500 (c) 3000 (d) none
60. The average age of a group going for picnic is 16 yrs 20 persons with average age 15 yrs join them so that the average age becomes 15.5 years. Then the number of persons who were initially going for picnic :
- (a) 10 (b) 20 (c) 18 (d) none
61. A train travels at an average speed of 100 kmph stopping for 3 minutes after every 75 kms. How much time it will take to reach a station which is 600 km from the point of start :
- (a) 6 hrs. 24 min. (b) 6 hrs. 21 min.  
 (c) 6 hrs. (d) none
62. An inspector rejects 0.08% of the sample, those being directive. How many samples should be inspect to reject 2 of them :
- (a) 2000 (b) 2500 (c) 2250 (d) none
- Directions for Q. 63 and Q. 64 :** The following questions contains a series of numbers of which one is incorrect. Select the incorrect one :
63. 3, 51, 51055, 255255  
 (a) 51 (b) (c) 51055 (d) 255255
64. 1015, 799, 674, 615, 583, 575  
 (a) 799 (b) 615 (c) 674 (d) 583
- Directions for Q. 65 and Q. 66 :** Read the following paragraph to answer question 21-22. Radha has one unmarried daughter and two sons. Mona is daughter in law of Bharat. Suraj is brother of Kamal but Mona is not his wife. Usha's daughter Madhu is Kamal's niece. Ashok's son Arun is Madhu's cousin.
65. Who among the following pairs are mother and son.  
 (a) Usha and Kamal (b) Radha and Suraj  
 (c) Madhu and Ashoka (d) Mona and Suraj
66. How is Bharat related to Madhu :  
 (a) Father (b) Grandfather  
 (c) Cousin (d) Brother
67. A thief after stealing, went off in a Santro with a speed 40 kmph. The owner of the house discovered the theft after half an hour and then he set off on his wife at a speed of 50 kmph. At what time, he will catch up the thief after his start :
- (a) 2 hrs. (b) 2.30 hrs. (c) 3 hrs. (d) none
68. A shopkeeper sells half of the oranges he had plus 1 to the first customers. Then  $\frac{1}{3}$  of the remaining plus 1 to his second customer and  $\frac{1}{5}$  of the remaining plus 1 to his third customer. If he is left with 3 oranges at the end, then initially he had :
- (a) 12 oranges (b) 24 oranges  
 (c) 36 oranges (d) none

69. A, B, D, E, F, G are consecutive integers between 1-10 not in same order satisfying the following conditions. D is 3 less than A, F is as much less than A as C is greater than D, B occupy central position. If A = 6, then the sum of E and G.  
(a) 8 (b) 12 (c) 15 (d) none
70. Two trains each of length 500 m are travelling in opposite direction with speeds 45 kmph and 30 kmph respectively. In what time, slower train will pass the driver of faster train.  
(a) 30 sec (b) 60 sec (c) 50 sec (d) none
71. A train starts from a station with certain passengers. At its first half, half of the passenger gets down. .... At the end, it is left with 360 passenger. How many passengers were there in the train initially :  
(a) 3600 (b) 4500 (c) 3000 (d) none
72. In a photo session of a family, father is to the left of son but to the right of grandfather. Mother is in right of daughter but left of grandfather. Who is in the centre :  
(a) Daughter (b) Grandfather  
(c) Mother (d) Father
73. The smallest number which when divided by 2, 3, 4, 5 leaves 1 as remainder in each case but, leaves no remainder when divided by 7 :  
(a) 231 (b) 301 (c) 331 (d) none
74. Three thieves stole in a bakery bread shop one by one. Each took with him half of the present bread plus half bread. If at last 3 breads are left. Then initially the bakery shop had ..... breads :  
(a) 15 (b) 31 (c) 24 (d) none
75. Which number should be subtracted from the highest four digit number to make it a perfect square :  
(a) 197 (b) 198 (c) 159 (d) none

**Directions for Questions Q 76 to Q 78 :**

*Read the following information carefully and answer the questions that follow :*

- (i) Jayant, Kamal, Namita, Asha and Tanmay are five members of a family.  
(ii) They have their birth dates from January to May, each member in one of these months.  
(iii) Each one likes one particular item for his/her birthday out of Bengali Sweets, Chocolates, Pastries, Ice Cream and Dry Fruits.  
(iv) The one who likes Pastries is born in the month which is exactly middle in the months given.  
(v) Asha does not like Ice cream but brings Chocolates for Jayant in February.  
(vi) Tanmay who is fond of Bengali sweets is born in the next month immediately after Namita.  
(vii) Namita does not like Dry fruits or Ice cream.
76. What is the choice of Asha ?  
(a) Pastries (b) Dry fruits  
(c) Bengali sweets (d) Cannot be determined

77. Which combination of month and item is true for Jayant?  
(a) March — Pastries (b) February — Pastries  
(c) None of these (d) Cannot be determined
78. What is the choice of Kamal ?  
(a) Ice cream (b) Bengali sweets  
(c) Dry fruit (d) Cannot be determined
79. In which month was Kamal born ?  
(a) January (b) May  
(c) January or May (d) Data inadequate

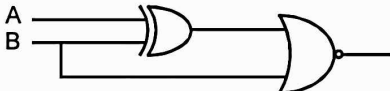
**Directions for Questions Q.80 to Q.84 :**

*Read the following information carefully and answer the questions that follow :*

- (i) There are eight faculty members A, B, C, D, E, F, G and H in the institute, each teaching a different subject.  
(ii) There are three lady members and of the eight, four are holding Ph.D Degree.  
(iii) E teacher Psychology and is Ph.D. A teachers Chemistry.  
(iv) The one who teachers Economics is not Ph.D. No lady member teachers either Commerce or Law. Law faculty does not award Ph.D.  
(v) D and G do not teach either Commerce or Physics.  
(vi) H and C are lady members and are not Ph.D. F who is Ph.D. teachers Zoology.  
(vii) B and G are Ph.Ds and G is a lady member.
80. Who teaches Physics ?  
(a) C (b) Either H or C  
(c) H (d) Either C or G
81. Which of the following lady members is/are Ph.D. ?  
(a) G (b) G and H  
(c) C and D (d) Cannot be determined
82. Which of the following statements is true ?  
(a) Two lady members are Ph.D  
(b) Three male members are Ph.D  
(c) The person who teacher Zoology is not Ph.D.  
(d) The person who teacher Economics is Ph.D.
83. Which of the following combination is not correct ?  
(a) Commerce -Male - Ph.D  
(b) Economics-Lady-Non-Ph.D.  
(c) Physics-Lady-Ph.D.  
(d) Zoology-Male-Ph.D.
84. What is the subject taught by G ?  
(a) Zoology  
(b) Either Physics or Zoology  
(c) Either Physics or Economics  
(d) Cannot be determined
85. Suppose in the data of problem 41, we say that HCF of any pair of number is  $h$  and the maximum possible number of elements in set is 4, then the maximum possible value of  $h$  is  
(a) 2 (b) 3 (c) 4 (d) None

86. The chances of throwing up a number that is greater than 8, 5 and 10 in that order in 3 throws of 2 dices simultaneously is  
 (a) 7/486 (b) 15/972  
 (c) 33/1944 (d) 65/3888
87. In a group there are 13 boys and 7 girls with brown hair. 15 person don't have brown hair. Then the maximum number of persons the group can have, is  
 (a) 26 (b) 25 (c) 39 (d) None
88. Assume the data of question 45, i.e. the previous one. The minimum number of persons in the group is  
 (a) 13 (b) 26 (c) 25 (d) None
89. How many arrangements of four 0's, two 1's and two 2's are there in which the first 1 occurs before the first 2?  
 (a) 210 (b) 420 (c) 105 (d) None
90. A girl starts to paint a fence on one day. On the second day two more girls join her and on the third day three more girls join the group and so on and so forth. If the fence is completely painted in this manner in 20 days, then the number of days, in which 10 boys painting together can paint fence completely given a boy can paint twice as fast as a girl can, is  
 (a) 154 (b) 77 (c) 36 (d) 72

### Computer Awareness

91. A floppy disk is :  
 (a) input device (b) output device  
 (c) both (a) and (b) (d) none
92. Select the correct memory hierarchy :  
 (a) Magnetic disk, DRAM, ROM  
 (b) Cache, DRAM, ROM  
 (c) SRAM, ROM, Magnetic disk  
 (d) ROM, DRAM, Magnetic disk
93. If  $A = 1$ ,  $B = 0$ , then the output will be :  
  
 (a) 0 (b) 1 (c) 2 (d) 3
94. Which one of the following is true for memory bus:  
 (a) It communicates between processor and I/O device  
 (b) It communicates between memory and I/O device  
 (c) It communicates between processor and memory  
 (d) none
95. What will be the output of the following set of instructions:  
 Input a  $3 \times 3$  matrix with row-wise elements  $\{0, 1, 2, \dots\}$   
 $t = 0$   
 for  $i = 1$  to 3 do  
 for  $j = 1$  to 3 do  
 if  $i + j = 4$ ,  $t = 5 + A_{ij}$   
 end do  
 end do  
 output  $t =$

- (a) 9 (b) 10 (c) 11 (d) 12
96. If  $p$  is false, then  $p \rightarrow q$  is :  
 (a) 0 (b) True  
 (c) False (d) Cannot say
97. Zero has two representations in :  
 (a) sign magnitude (b) 1's complement  
 (c) 2's complement (d) none
98. Decimal number  $(35.75)_{10}$  is binary is represented as:  
 (a)  $(100011.11)_2$  (b)  $(100011.011)_2$   
 (c)  $(100110.11)_2$  (d)  $(100110.011)_2$
99. Representation of  $(-1)_{10}$  in binary system :  
 (a)  $(10000001)_2$  (b)  $(00000001)_2$   
 (c)  $(11111111)_2$  (d) none
100. Which of the following is volatile memory :  
 (a) ROM, RAM (b) RAM  
 (c) ROM (d) none
101. The number  $1/3$  can be represented with finite number of terms in base :  
 (a) 7 (b) 8 (c) 9 (d) 10
102. Which of the following is not related to internet or www  
 (a) HTTP (b) HTML (c) FCFS (d) TCP/IP
103. The boolean expression  $(x + y).(x + y')$  can be simplified to :  
 (a) 0 (b)  $x$  (c)  $y$  (d) 1
104. Convert 3DC (hexadecimal) to octal.  
 (a) 1734 (b) 1374 (c) 1473 (d) 1437
105. Find the odd man out.  
 (a) LINUX (b) WINDOWS NT  
 (c) OS/2 (d) JAVA

### General English

**Directions for Q. 106 to Q. 108 :** Read the following paragraph:

- I. The clarity of the stone is determined by its lack of carbon spots, surface flaws and blemishes.
  - II. While these are hardly seen with naked eyes, it affects diamond's brilliance.
  - III. The most commonly found quality of diamond is VVSI (very very slightly imperfect), flawless as one can find.
  - IV. The quality goes on improving in VVSI, VVS2, and so on.
106. To which statement about brilliance of diamond will author probably agree.  
 (a) I (b) II (c) III (d) IV

107. Which of the following is true about clarity of stone :
- (a) It has carbon spots, flaws and blemishes
  - (b) It is determined by its imperfection
  - (c) It can't be determined by its imperfection
  - (d) none of these

108. Which of the following words can best substitute the word flawless in the given paragraph.
- (a) unrefined
  - (b) watertight
  - (c) blemish
  - (d) imperfection

**Directions for Q. 109 & Q. 110 :** Which of the following words can best express the meaning of word written in capital letters:

109. EXALTATION
- (a) ecstasy
  - (b) eminence
  - (c) adulation
  - (d) offense
110. RUMINATE
- (a) qualm
  - (b) deduce
  - (c) meditate
  - (d) langour

**Directions for Q. 111 & Q. 112 :** Select the synonym for the given word :

111. Compassionate
- (a) sympathetic
  - (b) thoughtful
  - (c) benign
  - (d) malignant
112. Exceptionable
- (a) intolerable
  - (b) bearable
  - (c) endurable
  - (d) adequate

**Directions for Q. 113 & Q. 114 :** Which of the underlined words should be corrected, so that the sentence is grammatically correct ?

113. The athlete, along with his coach, are going to dymptic gams :
- (a) athlete
  - (b) with
  - (c) his
  - (d) are
114. Platinum is precious and value metal, white in colour
- (a) precious
  - (b) value
  - (c) white
  - (d) colour
115. The teacher made us ..... our identity cards.
- (a) to show
  - (b) show
  - (c) showing
  - (d) none of these
116. Birds are kept in :
- (a) Aviary
  - (b) Cannibal
  - (c) Bigot
  - (d) Aquarium

**Directions for Q. 117 & Q. 118 :** In the following questions, choose the word opposite in meaning to the given word.

117. ADMONISH
- (a) Commend
  - (b) Tolerate
  - (c) Flatter
  - (d) Approve

118. SUCCUMB
- (a) Curb
  - (b) Resist
  - (c) Injure
  - (d) Shoot

**Directions for Q. 119 & Q.120 :** Contain two items that share a definite relationship. Find the pair from the options that expresses a similar relationship.

119. Mirror is to Reflect as
- (a) Beauty is to Enchantment
  - (b) Fire is to Burn
  - (c) Road is to Vehicles
  - (d) Money is to earning.
120. Dawn is to morning as
- (a) Spring is to summer
  - (b) Sun is to Moon
  - (c) Week is to Month
  - (d) Birth is to Death

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**ANSWER KEY (NIMCET- (Actual 07))**

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1. (b)	2. (b)	3. (b)	4. (a)	5. (d)	6. (a)	7. (d)	8. (a)	9. (d)	10. (b)
11. (a)	12. (a)	13. (b)	14. (c)	15. (b)	16. (b)	17. (c)	18. (a)	19. (d)	20. (b)
21. (c)	22. (a)	23. (d)	24. (b)	25. (a)	26. (b)	27. (a)	28. (c)	29. (b)	30. (d)
31. (d)	32. (a)	33. (a)	34. (d)	35. (a)	36. (d)	37. (d)	38. (a)	39. (a)	40. (a)
41. (c)	42. (c)	43. (d)	44. (c)	45. (c)	46. (a)	47. (b)	48. (c)	49. (d)	50. (d)
51. (b)	52. (a)	53. (d)	54. (b)	55. (b)	56. (a)	57. (c)	58. (a)	59. (d)	60. (b)
61. (b)	62. (b)	63. (c)	64. (b)	65. (b)	66. (b)	67. (a)	68. (d)	69. (b)	70. (d)
71. (d)	72. (b)	73. (b)	74. (b)	75. (b)	76. (b)	77. (c)	78. (a)	79. (c)	80. (b)
81. (a)	82. (b)	83. (c)	84. (d)	85. (d)	86. (d)	87. (d)	88. (d)	89. (d)	90. (d)
91. (d)	92. (b)	93. (b)	94. (c)	95. (c)	96. (d)	97. (d)	98. (a)	99. (c)	100. (b)
101. (c)	102. (c)	103. (b)	104. (a)	105. (d)	106. (a)	107. (a)	108. (b)	109. (b)	110. (c)
111. (b)	112. (a)	113. (d)	114. (b)	115. (a)	116. (a)	117. (a)	118. (a)	119. (a)	120. (d)

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