1. $\lim_{x \to 0} \frac{\pi^x - 1}{\sqrt{1+x} - 1}$
   (a) does not exists
   (b) is equal to $\log_e(\pi^2)$
   (c) is equal to 1
   (d) lies between 10 and 11

2. The value of the $\lim_{x \to \infty} \frac{(n!)^{1/n}}{n}$ is
   (a) 1
   (b) $\frac{1}{e^2}$
   (c) $\frac{1}{2e}$
   (d) $\frac{1}{e}$

3. $\lim_{x \to 2} \frac{\sqrt{1+\sqrt{2+x}} - \sqrt{3}}{x-2}$ is equal to
   (a) $\frac{1}{8\sqrt{3}}$
   (b) $\frac{1}{\sqrt{3}}$
   (c) $8\sqrt{3}$
   (d) $\sqrt{3}$

4. The value of $\lim_{x \to 0} \frac{5^x - 5^{-x}}{2x}$ is
   (a) $\log 5$
   (b) 0
   (c) 1
   (d) $2 \log 5$

5. $\lim_{x \to 0} \frac{(1 - \cos 2x)(3 + \cos x)}{x \tan 4x}$ is equal to
   (a) $-\frac{1}{4}$
   (b) $\frac{1}{2}$
   (c) 1
   (d) 2

6. If $f(x) = \begin{cases} [\tan(\frac{\pi}{4} + x)]^{\frac{1}{x}}, & x \neq 0 \\ k, & x = 0 \end{cases}$
   For what value of k, $f(x)$ is continuous at $x = 0$?
   (a) 1
   (b) 0
   (c) e
   (d) e^2

7. If $f(x) = \begin{cases} \frac{3 \sin \pi x}{5x}, & x \neq 0 \\ 2k, & x = 0 \end{cases}$ is continuous at $x = 0$,
   then the value of k is
   (a) $\frac{\pi}{10}$
   (b) $\frac{3\pi}{10}$
   (c) $\frac{3\pi}{2}$
   (d) $\frac{3\pi}{5}$

8. Discuss the continuity of the function $f(x) = \sin 2x - 1$ at the point $x = 0$ and $x = \pi$.
   (a) continuous at $x = 0, \pi$
   (b) Discontinuous at $x = 0$ but continuous at $x = \pi$
   (c) Continuous at $x = 0$ but discontinuous at $x = \pi$
   (d) Discontinuous at $x = 0, \pi$

9. If $f(x) = x(\sqrt{x} - \sqrt{x+1})$, then $f(x)$ is continuous in
   (a) $[0, \infty)$
   (b) $(0, \infty)$
   (c) $(-\infty, \infty)$
   (d) $(3, \infty)$

10. The function $f(x) = (x^2 - 1)|x^2 - 3x + 2| + \cos|x|$ is non-differentiable at
    (a) -1
    (b) 0
    (c) 1
    (d) 2

11. The function represented by the graph $f(x) = |x| - 1$ is

(b) differentiable but not continuous at $x = 1$
(c) continuous at differentiable at $x = 1$
(d) neither continuous nor differentiable at $x = 1$

12. If $f(x) = \int_1^x \sin^2\left(\frac{t}{2}\right) dt$, then the value of $\lim_{x \to 0} \frac{f(\pi + x) - f(x)}{x}$ is equal to
    (a) $\frac{1}{4}$
    (b) $\frac{1}{2}$
    (c) $\frac{3}{4}$
    (d) 1

13. The area of the region bounded by the lines $y = mx$, $x = 1, x = 2$ and X axis in 6sq units, then m is equal to
    (a) 3
    (b) 1
    (c) 2
    (d) 4

14. Area of the region bounded by two parabolas $y = x^2$ and $x = y^2$ is
    (a) $\frac{1}{4}$
    (b) $\frac{1}{3}$
    (c) 4
    (d) 3

15. Area (in sq units) bounded by the curves $y = e^x$, $y = e^{-x}$ and the straight line $x = 1$ is
    (a) $e + \frac{1}{e}$
    (b) $e + \frac{1}{e} + 2$
    (c) $e + \frac{1}{e} - 2$
    (d) $e - \frac{1}{e} + 2$

16. The area of the region bounded by the curves $x = -1$, $x = 2, y = x^2 + 1$ and $y = 2x - 2$ is
    (a) 10
    (b) 7
    (c) 8
    (d) 9

17. The area enclosed between the curves $y = x^3$ and $y = \sqrt{x}$ is
    (a) $\frac{5}{3}$
    (b) $\frac{5}{4}$
    (c) $\frac{5}{12}$
    (d) $\frac{12}{5}$

18. The value of $\int_0^{\pi/2} \frac{2^{\sin x}}{2^{\sin x} + 2^{\cos x}} dx$ is
    (a) 2
    (b) π
    (c) $\frac{\pi}{4}$
    (d) 2π

19. If $f(x) = f(a + x)$ and $\int_0^a f(x) dx = k$, then $\int_0^{na} f(x) dx$ is equal to
    (a) nk
    (b) $(n-1)k$

(c) $(n+1)k$ (d) 0

20. $\int_0^{\pi/2} \frac{200\sin x + 100\cos x}{\sin x + \cos x}\, dx$ is equal to
    (a) 50π (b) 25π (c) 75π (d) 150π

21. $\int_0^{\pi} \frac{\theta\sin\theta}{1+\cos^2\theta}\, d\theta$ is equal to
    (a) $\frac{\pi^2}{2}$ (b) $\frac{\pi^3}{3}$ (c) π^2 (d) $\frac{\pi^2}{4}$

22. $\int_0^{\infty} \frac{x\,dx}{(1+x)(1+x^2)}$ is equal to
    (a) $\frac{\pi}{2}$ (b) 0   (c) $\frac{\pi}{4}$ (d) 1

23. $\int_0^{\pi} \frac{x\,dx}{a^2\cos^2 x + b^2\sin^2 x}$ is equal to
    (a) $\frac{\pi}{2ab}$ (b) $\frac{\pi}{ab}$ (c) $\frac{\pi^2}{2ab}$ (d) $\frac{\pi^2}{ab}$

24. The mean of n terms is $\bar{x}$. If the first term is increased by 1, second by 2 and so on, then the new mean is
    (a) $\bar{x} + n$ (b) $\bar{x} + \frac{n}{2}$
    (c) $\bar{x} + \frac{n+1}{2}$ (d) None of these

25. The AM of 9 terms is 15. If one more term is added to this series, then the AM becomes 16. The value of the added term is
    (a) 30   (b) 27   (c) 25   (d) 23

26. If the median of $\frac{x}{5}, \frac{x}{4}, \frac{x}{3}, \frac{x}{2}, x$ $(x > 0)$ is 8, then the value of the x is
    (a) 24   (b) 32   (c) 8   (d) 16

27. The mean of the values 0, 1, 2, ..., n with the corresponding weights $^nC_0, ^nC_1, ... ^nC_n$ respectively, is
    (a) $\frac{n+1}{2}$ (b) $\frac{n-1}{2}$ (c) $\frac{2^n-1}{2}$ (d) $\frac{n}{2}$

28. If $(0, \pm 4)$ and $(0, \pm 2)$ be the foci and vertices of a hyperbola then its equation is
    (a) $\frac{x^2}{4} - \frac{y^2}{12} = 1$ (b) $\frac{x^2}{12} - \frac{y^2}{4} = 1$
    (c) $\frac{y^2}{4} - \frac{x^2}{12} = 1$ (d) $-\frac{x^2}{4} + \frac{y^2}{12} = 1$

29. The number of tangents to the hyperbola $\frac{x^2}{4} - \frac{y^2}{3} = 1$ through (4,1) is
    (a) 1   (b) 2   (c) 0   (d) 3

30. If A and B are two fix points and P is a variable point such that $PA + PB = 4$, the locus of P is
    (a) Parabola   (b) Ellipse
    (c) hyperbola   (d) none of these

31. The line $y = 2t^2$ meets the ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$ in real points, if
    (a) $|t| \le 1$ (b) $|t| > 1$
    (c) $|t| < 3$ (d) *none of these*

32. A variable point P on an ellipse of eccentricity e is joined to its foci S, S'. The locus of the incentre of $\Delta PSS'$ in an ellipse of eccentricity
    (a) $\sqrt{\frac{e}{1+e}}$ (b) $\sqrt{\frac{2e}{1+e}}$
    (c) $\sqrt{\frac{3e}{1+e}}$ (d) None of these

33. For the ellipse $3x^2 + 4y^2 - 6x + 8y - 5 = 0$
    (a) centre is $(1, -1)$
    (b) eccentricity is $\frac{1}{2}$
    (c) foci are $(3, -1)$ and $(-1, -1)$
    (d) all of these are true

34. The circle is dawn on the major axis of the ellipse $9x^2 + 16y^2 = 144$ as diameter. The equation of circle is
    (a) $x^2 + y^2 = 3$ (b) $x^2 + y^2 = 4$
    (c) $x^2 + y^2 = 9$ (d) $x^2 + y^2 = 16$

35. The equation $2x^2 + 3y^2 - 8x - 18y + 35 = k$ represents
    (a) no locus $k > 0$ (b) *an ellipse if $k < 0$*
    (c) *a point if $k = 0$*   (d) all of these

36. The area of the triangle form by the lines joining the vertex of the parabola $x^2 = 12y$ to the ends of its latus rectum is
    (a) $12\, Sq.\, UniT$ (b) $16\, Sq.\, Unit$
    (c) $18\, Sq.\, Unit$ (d) $24\, Sq.\, Unit$

37. The locus of point of intersection of the lines $bxt - ayt = ab$ and $bx + ay = abt$ is
    (a) a parabola   (b) an ellipse
    (c) a hyperbola   (d) none of these

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38. If ABS is a focal chord of the parabola such that $AS = 2$ and $SB = 4$, then the latus rectum of the parabola is
(a) $\frac{8}{3}$ (b) $\frac{16}{3}$ (c) $\frac{25}{3}$ (d) None

39. A point moves on the parabola $y^2 = 4ax$. Its distance from the focus is minimum for the following value(s) of x
(a) -1 (b) 0 (c) 1 (d) a

40. The number of common tangents to the circles $x^2 + y^2 - 4x - 4y - 10 = 0$ and $x^2 + y^2 = 0$:
(a) 1 (b) 2 (c) 3 (d) 4

41. The limiting points of the system of circles represents by the equation $2(x^2 + y^2) + \lambda x + \frac{9}{2} = 0$ are:
(a) $(\pm \frac{3}{2}, 0)$ (b) $(0,0)$ and $(\frac{9}{2}, 0)$
(c) $(\pm \frac{9}{2}, 0)$ (d) $(\pm 3, 0)$

42. The length of the transversal common tangent to the circle $x^2 + y^2 = 1$ and $(x - t)^2 + y^2 = 1$ is $\sqrt{21}$, then t is equal to
(a) ± 2 (b) ± 5 (c) ± 3 (d) None

43. The circle of the circle passing through the points $(1,2), (5,2)$ and $(5,-2)$ is:
(a) $2\sqrt{5}$ (b) $3\sqrt{2}$ (c) $5\sqrt{2}$ (d) $2\sqrt{2}$

44. If the lines represented by the equation $2x^2 - 3xy + y^2 = 0$ makes angle α and β with $x-$ axis, then $\cot^2 \alpha + \cot^2 \beta =$
(a) 0 (b) $\frac{3}{2}$ (c) $\frac{7}{4}$ (d) $\frac{5}{4}$

45. The point(s) on the curve $y^2 + 3x^2 = 12y$ where tangent is vertical, is (are) :
(a) $\left(\pm \frac{4}{\sqrt{3}}, -2\right)$ (b) $\left(\pm \sqrt{\frac{11}{3}}, 1\right)$
(c) $(0,0)$ (d) $\left(\pm \frac{4}{\sqrt{3}}, 2\right)$

46. If m_1 and m_2 are the roots of the equation $x^2 + (\sqrt{3} + 2)x + (\sqrt{3} - 1) = 0$, then the area of the triangle formed by the lines $y = m_1 x$, $y = m_2 x$ and $y = 2$ is
(a) $\sqrt{33} - \sqrt{11}$ (b) $\sqrt{33} + \sqrt{11}$
(c) $\sqrt{33} + \sqrt{7}$ (d) none of these

47. Let $g(x)$ be a function defined in $(-1,1)$. If the area of the equilateral triangle with two vertices at $(0,0)$ and $(x, g(x))$ is $\frac{\sqrt{3}}{4}$, then $g(x) =$
(a) $g(x) = \pm\sqrt{1 - x^2}$ (b) $g(x) = \sqrt{1 - x^2}$
(c) $g(x) = -\sqrt{1 - x^2}$ (d) $g(x) = \sqrt{1 + x^2}$

48. The solution of the equation $\frac{dy}{dx} = \frac{x+y}{x-y}$ is:
(a) $c(x^2 + y^2)^{\frac{1}{2}} + e^{\tan^{-1}\left(\frac{y}{x}\right)} = 0$
(b) $c(x^2 + y^2)^{1/2} - e^{\tan^{-1}\left(\frac{y}{x}\right)} = 0$
(c) $c(x^2 + y^2) - e^{\tan^{-1}\left(\frac{y}{x}\right)} = 0$
(d) None of these

49. Solution of the equation $(1 - x^2)dy + xydx = xy^2 dx$ is:
(a) $(y - 1)^2(1 - x^2) = 0$
(b) $(y - 1)^2(1 - x^2) = c^2 y^2$
(c) $(y - 1)^2(1 + x^2) = c^2 y^2$
(d) None of these

50. The order of the differential equation of all circles of radius r, having centre on $y-axis$ and passing through the origin is
(a) 1 (b) 2 (c) 3 (d)

Logical Reasoning

51. In a certain code language, "TERMINAL" is written as "NSFUMBOJ" and "TOWERS" is written as "XPUTSF". How is "MATE" written in that same code?
(a) FUBN (b) UFNB
(c) BNFU (d) None of these

52. In a certain code language, "CAMERA" is written as "ZIVNZX" .How is "CHAPRA" written in that same code?
(a) ZISKZX (b) ZIKSZX
(c) ZIKXSZ (d) ZIKZSX

53. Pointing to a man in the park, "Naman said. "His son is my son's uncle." How is the man related to Naman?
(a) Brother (b) Father
(c) Uncle (d) Grandfather

54. A told B, "Yesterday I met the only brother of the daughter of my grandmother." Whom did A meet?
(a) Cousin (b) Brother

(c) Nephew   (d) Father

55. On what dates of April 2001 did Sunday fall?
    (a) 1st, 8th, 15th, 22nd, 29th
    (b) 2nd, 9th, 16th, 23rd, 30th
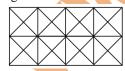   (c) 4th, 11th, 18th, 25th
    (d) 6th, 13th, 20th, 27th

Directions (Q. 56-58): **Read the following information and answer the questions given below:**
Each surface of a dice is painted with different colours and has different numbers (from 1 to 6). Number 1 is opposite 4 and number 2 is opposite 6. Orange face has number 1. The opposite face of orange is black and has number 4. When orange is facing you, the top is pink and has number 3 on it. The surface which is painted grey, when placed facing you, has number 1 on the top, number 2 on its right face and is painted blue on its left. White and blue are on opposite faces.

56. Which of the following colours are on the four adjacent faces of grey?
    (a) Blue, Black, Pink, White
    (b) White, Orange, Black, Blue
    (c) White, Blue, Black, Pink
    (d) Can't be determined

57. Which of the following sides has number six on it?
    (a) Grey   (b) Pink
    (c) Blue   (d) White

58. When the orange side is facing you and the number 2 is on your right, which of the following numbers can be at the top?
    (a) 3   (b) 6   (c) 4   (d) 5

59. How many triangles are there in the figure below?

    (a) 5   (b) 6   (c) 8   (d) 10

60. Count the number of squares in the following figure –f

    (a) 15   (b) 21   (c) 24   (d) 26

61. '34' is related to '12' in the same way as '59' is related to _____.
    (a) 45   (b) 14   (c) 42   (d) 38

62. What should come next in the following number sequence?
    2 2 3 2 3 4 2 3 4 5 2 3 4 5 6 2 3 4 5 6
    (a) 2   (b) 7   (c) 8   (d) 3

63. Four of the following five are alike in a certain way and hence form a group. Which one of the following does not

belong to that group?
    (a) 13   (b) 29   (c) 38   (d) 8

64. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is
    (a) 6 hrs   (b) 10 hrs   (c) 16 hrs   (d) 30 hrs

65. 12 buckets of water fill a tank when the capacity of each tank is 13.5 litres. How many buckets will be needed to fill the same tank, if the capacity of each bucket is 9 litres ?
    (a) 8   (b) 15   (c) 16   (d) 18

66. Ten years ago, A was half of B in age. If the ratio of their present ages is 3 : 4, what will be the total of their present ages ?
    (a) 20 years   (b) 30 years
    (c) 45 years   (d) None of these

67. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B ?
    (a) 7   (b) 8   (c) 9   (d) 10

Direction (Q.68-70) : Read the following information and answer the questions given below it :
Six students A, B, C, D, E and F are sitting in the field. A and B are from Nehru House while the rest belong to Gandhi House. D and F are tall while the others are short. A, C and D are wearing glasses while the others are not.

68. Which two students, who are not wearing glasses are short ?
    (a) A and F   (b) C and E   (c) B and E
    (d) E and F   (e) None of these

69. Which short student of Gandhi House is not wearing glasses ?
    (a) F   (b) E   (c) B
    (d) A   (e) Data inadequate

70. Which tall student of Gandhi House is not wearing glasses ?
    (a) B   (b) C   (c) E   (d) F
    (e) None of these

71. Six students A, B, C, Df E and F are sitting in the field. A and B are from Delhi while the rest are from Bangalore. D and F are tall while others are short. A, C and D are girls while others are boys. Which is the tall girl from Bangalore ?

(a) C (b) D   (c) E   (d) F

72. On a shelf are placed six volumes side-by-side labelled A, B, C, D, E and F. B, C, E, F have green covers while others have yellow covers. A, D, B are new volumes while the rest are old volumes. A, C, B are law reports while the rest are medical extracts. Which two volumes are old medical extracts and have green covers?

(a) B, C   (b) C, D   (c) C, E   (d) E, F

Directions (73-77): Read the following information carefully and answer the questions given below it:

There are six persons A, B, C, D, E and F in a school. Each of the teachers teaches two subjects, one compulsory subject and the other optional subject. D's optional subject was History while three others have it as compulsory subject. E and F have Physics as one of their subjects. F's compulsory subject is Mathematics which is an optional subject of both C and E. History and English are A's subjects but in terms of compulsory and optional subjects, they are just reverse of those of D's. Chemistry is an optional subject of only one of them. The only female teacher in the school has English as her compulsory subject.

73. What is C's compulsory subject?
(a) History   (b) Physics
(c) Chemistry   *(d)* English

74. Who is a female member in the group ?
(a) A   (b) B   (c) C   (d) D

75. Which of the following has same compulsory and optional subjects as those of F's ?
(a) D   (b) B
(c) A   (d) None of these

76. Disregarding which is the compulsory and which is the optional subject, who has the same Iwo subject combination as F?
(a) A   (b) B
(c) E   (d) D

77. Which of the following groups has History as the compulsory subject ?
(a) *A,* C, D   (b) B, C, D
(c) C, D   (d) *A,* B, C

Directions: (Q.78-81)-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.

78. What is the choice of Asha ?
(a) Pastries   (b) Dry fruits
(c) Bengali sweets   (d) Cannot be determined

79. Which combination of month and item is true for Jayant ?
(a) March — Pastries
(b) February — Pastries
(c) February — tee cream
(d) None of these

80. What is the choice of Kamal ?
(a) Ice cream (b) Bengali sweets
(c) Dry fruits (d) Cannot be determined

81. In which month was Kamal born ?
(a) January   (b) May
(c) January or May   (d) Data inadequate

82. 7 men and 7 boys can do a piece of work in 14 days ; 3 men and 8 boys can do the same in 11 days. 8 men and 6 boys can do 3 times the amount of this work in
(a) 21 days   (b) 18 days
(c) 24 days   (d) 36 days

83. In a game of 100 points, A can give B 20 points and C 28 points. Then B can give C
(a) 8 points   (b) 10 points
(c) 14 points   (d) 40 points

84. C B _ _ D _ B A B C C B
_ _ 1 2 4 3 _ _ ? ? ? ?
a _ a b _ c _ b _ _ _ _ _
(a) 3, 4, 4 3   (b) 3, 2, 2, 3
(c) 3, 1, 1, 3   (d) 1, 4, 4, 1

85. What terms will fill the blank spaces ?
Z, X, V, T, R (...), (...)
(a) O, K   (b) N,M   (c) K, S   (d) P, N

86. 4, 7, 13, ?, 34, 49
(a) 20   (b) 22   (c) 24   (d) 21

87. 3, 7, 11, 19, 27, 39, ?
(a) 53   (b) 55   (c) 52   (d) 51

88. A and B can do a work in 8 days, B and C can do the same work in 12 days. A, B and C together can finish it in 6 days. A and C together will do it in :
(a) 4 days   (b) 6 days
(c) 8 days   (d) 12 days

89. A and B can do a piece of work in 72 days; B and C can do it in 120 days, B and C can do it in 90 days. In what time can A alone do it ?
(a) 80 days   (b) 100 days
(c) 120 days (d) 150 days

90. If it is possible to make a meaningful word from the 1st, 4th, 6th, and 7th letters of the word SUPREMACIST, using each letter only once, third letter of the word would be your answer. If more than one such word can be formed, your answer would be X and if no such word can be formed, answer is Y.
(a) X   (b) Y   (c) A   (d) R

General English

91. She seems offended _____ my remarks.
a) with
b) for
c) upon
d) at

92. The mounting pressure was so overwhelming that he ultimately _____ to her wish.
a) agreed in
b) cowed in
c) gave in
d) yielded in

93. He has no objection _____ my proposal.
a) to
b) for
c) in
d) towards

94. It is no use _____ to come now. He is very busy.
a) To ask him
b) Asking him
c) That you ask him
d) If you asked him

95. They are very grateful _____ your kindness.
a) towards
b) to
c) with
d) for

96. Wash your hands _____ water.
a) from

b) with
c) by
d) in

97. He preferred cricket _____ any other sport.
a) against
b) to
c) over
d) than

98. There is a disturbing nexus _____ politics and sports in India.
a) between
b) with
c) among
d) by

99. Don't loiter _____ the street.
a) in
b) about
c) on
d) into

100. The terms given to you are not _____ acceptable.
a) for
b) by
c) with
d) to

101. Sunita Decided to set _____ some time every day for prayers.
a) up
b) in
c) on
d) aside

102. The Government agreed to pay compensation _____ damage crops, land and cattle.
a) of
b) for
c) to
d) through

103. The boy you met yesterday is in class_____.
a) ninth
b) the ninth
c) nine
d) the nine

104. There was some confusion _____ the agreement.
a) on
b) in
c) around
d) over

105. Speak loudly as he is slow _____ hearing.
   a) in
   b) about
   c) at
   d) of

106. Will you _____ my dog while I am on tour?
   a) Look out
   b) Look up
   c) Look on
   d) Look after

107. Savita is disgusted _____ the habits of her husband.
   a) of
   b) from
   c) with
   d) at

108. Every man craves _____ recognition.
   a) for
   b) about
   c) at
   d) after

109. _____ you meet my son in the market, ask him to come home at once.
   a) Will
   b) While
   c) Should
   d) Would

110. Sanjay was sure _____ getting a first class in the examination.
   a) at
   b) of
   c) on
   d) about

Computer Awareness

111. The decimal equivalent of binary number 10110.11 is
   (a) 16.75
   (b) 20.75
   (c) 16.50
   (d) 22.75

112. Hexadecimal conversion of decimal number 227 will be
   (a) A3
   (b) E3
   (c) CC
   (d) C3

113. The number of 1's present in the binary representation of $15 \times 256 + 5 \times 16 + 3$ are
   (a) 8
   (b) 9
   (c) 10
   (d) 11

114. Given $(135)_X + (144)_X = (323)_X$. What is the value of x?
   (a) 5
   (b) 3
   (c) 12
   (d) 6

115. Which one of the following is correct answer when $11011_{(2)}$ is subtracted from $11101_{(2)}$ by using 1's complement method?
   (a) 01001
   (b) 10001
   (c) 00011
   (d) 00010

116. An Excess-3 code arithmetic operation is used to perform
   (a) Binary addition
   (b) Binary subtraction
   (c) BCD addition
   (d) BCD Subtraction

117. Convert the decimal 44.6875 into octal
   (a) 51.54
   (b) 51.13
   (c) 54.13
   (d) 51.51

118. The decimal equivalent of binary 110.001 is
   (a) 6.25
   (b) 6.125
   (c) 62.5
   (d) 0.162

119. Given $(125)_r = (203)_5$. The value of r will be
   (a) 16
   (b) 10
   (c) 8
   (d) 6

120. The 9's complement of $(25.639)_{10}$ is
   (a) 74.360
   (b) 0.6732
   (c) 6.732
   (d) 7.436

Answers

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