M. C. A. ENTRANCE **NIMCET – 207** **MAXIMUM TIME: 2Hrs. 30 Min.**
TOTAL QUESTIONS: 120

DIRECTIONS

The NIMCET 07 examination will be for a duration of 2 hours 30 minute and consists of 120 objective type questions with four options for each question. Each correct answer carries FOUR marks and each wrongly answered question invites NEGATIVE ONE mark. The candidates have to mark the responses in the OMR sheets supplied at the time of examination. The question paper will contain 120 objective type questions covering the following topics:

Mathematics	: 40 Questions
Computer Awareness	: 15 Questions
Analytical ability And Logical Reasoning	: 50 Questions
General Questions	: 15 Questions
Total Questions	: 120 Questions

1. If the angle A of ΔABC is given by the equation $5\cos A + 4 = 0$, then the equation $20x^2 + 3x - 9 = 0$ has for its roots.

(a) $\sin A$ & $\tan A$ (b) $\sin A$ & $\cos A$
(c) $\sin A$ & $\cot A$ (d) $\cos A$ & $\tan A$

2. If α, β are the roots of $x^2 + px + 1 = 0$ γ, δ are the roots of $x^2 + qx + 1 = 0$ then

$$(\alpha - \gamma)(\beta - \gamma)(\alpha - \delta)(\beta + \delta) =$$

(a) p^2 (b) q^2 (c) $p^2 - q^2$ (d) $q^2 - p^2$

3. The rank of the matrix $\begin{vmatrix} -1 & 2 & 5 \\ 2 & -4 & a-4 \\ 1 & -2 & a+1 \end{vmatrix} =$

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

4. If $i = \sqrt{-1}$ then

$$4 + 5\left(\frac{-1}{2} + i\frac{\sqrt{3}}{2}\right)^{334} + 3\left(\frac{-1}{2} + i\frac{\sqrt{3}}{2}\right)^{365} =$$

(a) $1 - i\sqrt{3}$ (b) $-1 + i\sqrt{3}$ (c) $i\sqrt{3}$ (d) $-i\sqrt{3}$

5. The co-efficient of the term independent of x in the expansion of $\left(1 + x + 2x^3\right)\left(\frac{3}{2}x^2 - \frac{1}{3x}\right)^9 =$

(a) 1/3 (b) 19/24 (c) 17/54 (d) 1/4

6. If $A + B + C = \pi$, then the value of

$$\begin{vmatrix} 1 & \sin^2 A & \cot A \\ 1 & \sin^2 B & \cot B \\ 1 & \sin^2 C & \cot C \end{vmatrix}$$

(a) 0 (b) 1 (c) π (d) $\pi/2$

7. Let $\vec{a} = 2\vec{i} + \vec{j} - 2\vec{k}$ and $\vec{b} = \vec{i} + \vec{j}$. if $\vec{c}$ is a vector such that $\vec{a}.\vec{c} = |\vec{c}|$, $|\vec{c} - \vec{a}| = 2\sqrt{2}$ and the angle between $(\vec{a} \times \vec{b})$ and $\vec{c}$ is 30°, then $|(\vec{a} \times \vec{b}) \times \vec{c}| =$

(a) 2/3 (b) 3/2 (c) 2 (d) 3

8. If $a^{1/x} = b^{1/y} = c^{1/z}$ and *a, b, c* are in G. P. Then *x, y, z* are in

(a) A. P. (b) G. P. (c) H. P. (d) none of these

9. Angle between the regression lines is θ then $\tan\theta =$

(a) $\left(\frac{1-r}{r}\right)\left(\frac{\sigma_x\sigma_y}{\sigma_x^2+\sigma_y^2}\right)$ (b) $\pm\left(\frac{1-r^2}{r}\right)\left(\frac{\sigma_x\sigma_y}{\sigma_x^2+\sigma_y^2}\right)$

(c) $\left(\frac{1-r^2}{r}\right)\left(\frac{\sigma_x\sigma_y}{\sigma_x^2+\sigma_y^2}\right)$ (d) none of these

10. The square root of $-5+12\sqrt{-1}$

(a) $\pm(2+3i)$ (b) $\pm(2+i)$ (c) $\pm(1+i)$ (d) $-5\pm 2i$

11. The value of $\int_0^{2\pi}\left|\sin^3\theta\right|d\theta =$

(a) 0 (b) 3/8 (c) 8/3 (d) π

12. The line $y=2x+1$ cuts the ellipse $\frac{x^2}{9}=\frac{y^2}{4}=1$ at A, B. Where do the tangents at A and B to the ellipse intersect?

(a) (4, 4) (b) (0, 1) (c) (–18, 4) (d) (1, 2)

13. Which of the following statements is *false*?

(a) Sum of two symmetric matrices is a symmetrices matrix

(b) Product of two symmetric matrices is a symmetric matrix

(c) Product of two diagonal matrices is a diagonal matrix

(d) square of a skew symmetric matrix is a symmetrix matrix

14. Volume of the parallelepiped with sides (1, 1, -1), (2, –3, 0), (3, 0, –1) is

(a) 5 (b) 4 (c) 3 (d) – 4

15. The mean deviation of a given distribution is least, when it is measured from

(a) A. M (b) Median (c) Mode (d) G. M.

16. $\int \sin(\log x)\,dx$ is

(a) $\frac{x}{2}(\sin(\log x)-\cos(\log x))$ (b) –x cos(log x+c)

(c) x sin(log x)+c (d) none

17. Height of a cylinder of maximum volume contained in a sphere of radius 'a' is

(a) $a/\sqrt{3}$ (b) $a\sqrt{3}$ (c) $2a/\sqrt{3}$ (d) $2a\sqrt{3}$

18. Given two vectors $\vec{a}=2\vec{i}-3\vec{j}+6\vec{k}$; $\vec{b}=-2\vec{i}+2\vec{j}-\vec{k}$ and $\lambda=\frac{\text{Projection of }\vec{a}\text{ on }\vec{b}}{\text{Projection of }\vec{b}\text{ on }\vec{a}}$ then $\lambda =$

(a) 3/7 (b) 7/3 (c) 3 (d) 7

19. The value of $\tan\left(\cos^{-1}(4/5)+\tan^{-1}(2/3)\right)=$

(a) $7/16$ (b) $17/6$ (c) $6/17$ (d) $16/7$

20. Equation of asymptotes to hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ are

(a) $\frac{x}{a}\pm\frac{y}{a}=0$ (b) $\frac{x}{a}\pm\frac{y}{b}=1$

(c) $\frac{x}{b}\pm\frac{y}{a}=1$ (d) $\frac{x}{a}\pm\frac{y}{b}=0$

21. The number of 4 letters words that can be formed from the letters of the word INFINITE is

(a) 4! (b) ${}^8C_4$ (c) 286 (d) 120

22. A number lock consist 3 rings each marked 0 to 9. Find maximum no. of unsuccessful attempts made to open the lock.....

(a) 998 (b) 999 (c) 100 (d) none of these

23. The line $y=mx+c$ touches ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ if

(a) $c=\pm\sqrt{a^2+b^2m^2}$ (b) $c=\pm\sqrt{a^2m^2+b^2}$

(c) $c=a^2m^2+b^2$ (d) none of these

24. The Quartile derivation of daily wages of 7 persons which are Rs. 12, 7, 15, 10, 17, 17, 25 is

(a) 14.5 (b) 7 (c) 9 (d) 3.5

25. The integral $\int_0^{1.5}\left[x^2\right]dx$ where [ ] denotes the greater integer function equals

(a) $2-\sqrt{2}$ (b) $2+\sqrt{2}$ (c) $\sqrt{2}$ (d) none of these

26. The graph of an even function is symmetrical about

(a) x-axis (b) y-axis (c) the origin (d) none of these

27. If the second degree expression $ax^2+2hxy+by^2+2gx+2fy+c$ is resolved into two real factors then $\Delta=abc+2fgh-af^2-bg^2-ch^2$ is

(a) 0 (b) > 0 (c) < 0 (d) none of these

28. Every diagonal element of a skew-symmetric matrix is

(a) 0 (b) 1

(c) purity real (d) purely imaginary

29. If the difference between the mean and variance of Binomial distribution for 5 trials is 5 / 9, the distribution is of the form

(a) ${}^5C_r\left(\frac{2}{3}\right)^r\left(\frac{1}{3}\right)^{5-r}$ (b) ${}^5C_r\left(\frac{1}{3}\right)^r\left(\frac{2}{3}\right)^{5-r}$

(c) ${}^5C_5\left(\frac{1}{3}\right)^5\left(\frac{2}{3}\right)^0$ (d) none of these

30. If $z = \cos\left(\frac{x}{y}\right) + \sin\left(\frac{x}{y}\right)$ then $x\frac{\partial z}{\partial x} + y\frac{\partial z}{\partial y} = ?$

(a) 0 (b) –1 (c) 2 (d) –4

31. The angles of elevation of the top of a tower standing on a horizontal plane from a point A is α. After walking a distance d towards the foot of the tower, the angle of elevation is found to be α. The height of the tower is

(a) $\frac{d\sin\alpha\sin\beta}{\sin(\beta-\alpha)}$ (b) $\frac{d\sin\alpha\sin\beta}{\sin(\alpha-\beta)}$

(c) $\frac{d\sin(\beta-\alpha)}{\sin\alpha\sin\beta}$ (d) $\frac{d\sin(\alpha-\beta)}{\sin\alpha\sin\beta}$

32. If A is a square matrix then $adjA^T - (adjA)^T$ is equal to

(a) 2|A| (b) 2 |A| I

(c) null matrix (d) none of these

33. If |A| = 2 and A is a 2×2 matrix then

Det {adj {adj {adj A^2 } } } is

(a) 4 (b) 4^2 (c) 4^3 (d) none of these

34. Let R be a relation on a set A such that $R = R^{-1}$ then R is

(a) reflexive (b) symmetric (c) transitive (d) none

35. Given $\sec\theta + \sqrt{2}\tan\theta = \sqrt{2}$, then the value of $\tan\theta$ is equal to

(a) $2+\sqrt{3}$ (b) $2-\sqrt{3}$ (c) $\sqrt{3}$ (d) $2\pm\sqrt{3}$

36. The maximum value of the function $f(x) = x(\log x)^2$

(a) $4/e^2$ (b) e^2 (c) $2/e^2$ (d) $1/e^2$

37. The locus of the point of intersection of the perpendicular tangents to the parabola $x^2 = 4ay$ is

(a) $x = a$ (b) $y = a$ (c) $x = -a$ (d) $y = -a$

38. If $\vec{a},\vec{b},\vec{c}$ are unit vectors such that $\vec{a}+\vec{b}+\vec{c} = 0$, then the value of $\vec{a}.\vec{b} + \vec{b}.\vec{c} + \vec{c}.\vec{a}$ is

(a) $1/2$ (b) $-3/2$ (c) $3/2$ (d) $-1/2$

39. If G is the GM of the product of K sets of observations with G. M.'s $G_1, G_2, \ldots, G_k$ respectively, then G is equal to

(a) $\log G_1 + \log G_2 + \ldots + \log G_k$

(b) $\log G_1 . \log G_2 \ldots\ldots \log G_k$

(c) $G_1 . G_2 \ldots\ldots G_k$ (d) none of these

40. In a distribution mean = 65, median = 70 and coefficient of skewness is -0.6. Its mode is

(a) 80 (b) 100 (c) 0.80 (d) none of these

41. The ascending order of a data – hierarchy is

(a) bit – byte – record – field – file – database

(b) byte – bit – field – record – file – database

(c) byte – bit – record – file – field – database

(d) bit – byte – field – record – file – database

42. The register which holds the address of the location to or from which data are to be transferred is

(a) MDR (b) IR (c) MAR (d) MBR

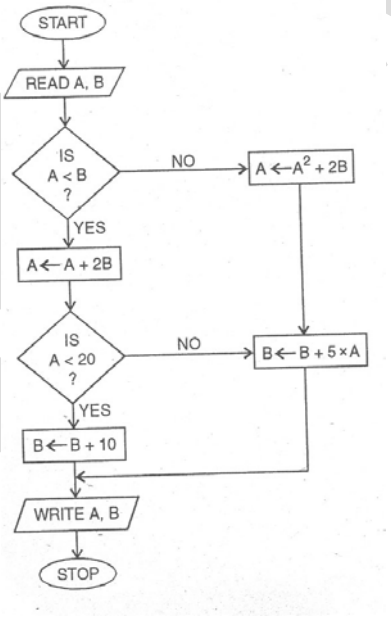
43. Addition of 1101011 & 0101100 gives

(a) 10010111 (b) 1010110 (c) 00110101 (d) 10101100

44. $(10110011100011110000)_2$ in base 32 is

(a) 2214716 (b) 1192331 (c) 119716 (d) 11142316

45. Trace the resulting values of A and B through the flowchart in the figure where A=25 & B=30



(a) A = 75 B = 455 (b) A = 85 B = 455

(c) A = 80 B = 450 (d) none of these

46. Language that increases CPU speed is

(a) Assembly language (b) High level language

(c) Middle level language (d) Machine language

47. The printing speed of the range 300-3000 LPM is obtained by

(a) Line printer (b) Page printer

(c) Character printer (d) none of these

48. Select the correct arrangement

(a) Bit, nibble, byte, MB, KB, GB

(b) Bit, byte, GB, MB, nibble

(c) Bit, nibble, byte, KB, MB, GB

(d) Bit, byte, nibble, KB, GB, MB

49. Multiprocessor is used because

(a) it saves money compared to multiple single systems

(b) they increase reliability

(c) distributed capability (d) all of the above

50. When an interrupt occurs, an operating system

(a) ignores the interrupt

(b) always changes state of interrupted process after processing the interrupt
(c) always resumes execution of interrupted process after processing the interrupt
(d) may change state of interrupted process to blocked state & scheduled to another process

51. Which of the following statements is wrong?
(a) Magnetic tape is non volatile
(b) Magnetic core and semiconductor memories are used as mass memory medium
(c) An EPROM can be programmed, erased and reprogrammed by the user with an EPROM programming instrument
(d) None of the above

52. A storage device used to compensate the differences in *flow of data* is known as
(a) main storage (b) auxiliary storage
(c) buffer (d) virtual memory

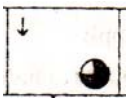
53. The octal equivalent to the binary number $(101111001011110)_2$ is
(a) $(47136)_8$ (b) $(457132)_8$ (c) $(57136)_8$ (d) none

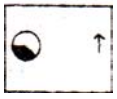
54. In a Boolean algebra (B,+,.,'), the value of (xy'+yz)(xz+yz') is
(a) xyz (b) 1 (c) xz (d) x(y'+z')

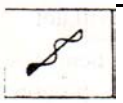
55. The value of $(10110111)_2 \oplus (11010110)_2$; where $\oplus$ denotes XOR is
(a) (11000010)2 (b) (01100010)2
(c) (01100001)2 (d) none of these

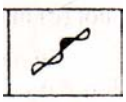
Directions (Q. 56 – 58): In each of the following problems, a series is established if the positions of the two out of four numbered figures are interchanged. The position of the initial, unnumbered figure remains the same. It is the beginning of the series. The earlier of the two numbered figures whose positions are interchanged is the answer. If it is not necessary to interchange the positions of figures to establish the series, write Y as the answer. Remember that when the series is established, the figure change from left to right (i.e. from the unnumbered figure to the last figure).

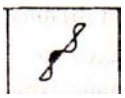
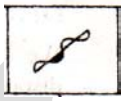
56.

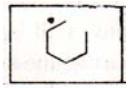
(a)  (b) 

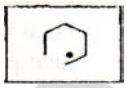
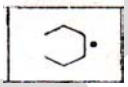
(c)  (d) 

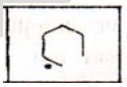
57. 

(a)  (b) 

(c)  (d) 

58. 

(a)  (b) 

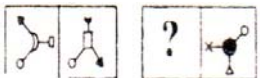
(c)  (d) 

Directions (Q. 59 – 61): The second figure on the first unit of the problem figures bears a certain relationship to the first figure. Similarly, one of the figures in the answer figures bears the same relationship to the first figure in the second unit of the problem figures. Locate the figure that would replace the question mark.

59. 

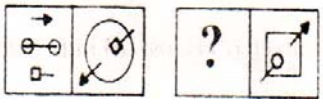
(a)  (b) 

(c)  (d) 

60. 

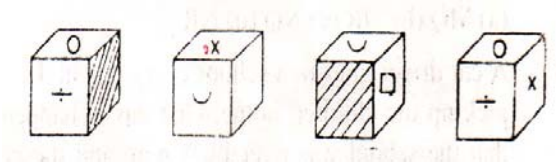
(a)  (b) 

(c)  (d) 

61. 

(a)  (b)  (c)  (d) none

62. The figure (X) given on the left hand side, in each problem, is folded to from a cube. Choose from amongst the alternatives **(a)**, **(b)**, **(c)** and **(d)**, the cubes that are similar to the cube formed.



(a) A and B only (b) D only
(c) C and D only (d) B and D only

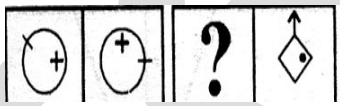
Directions (Q. 63 – 65): The problems below contain a question and two statements giving certain data. You have to decide whether the data given in the statements are sufficient to answer the question. The correct answer is
(a) If statement (I) alone is sufficient but statement (II) alone is not sufficient.
(b) If statement (II) alone is sufficient but statement (I) alone is not sufficient.
(c) If both statements (I) and (II) together are sufficient but neither of statements alone is sufficient.
(d) If statements (I) and (II) together are not sufficient

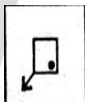
63. When one ball is drawn at random from an urn containing 25 balls, what is the chance that it is red?
I. The urn contains 10 yellow and 8 green balls.
II. The urn contains all coloured balls.

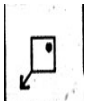
64. How long did the secretary's speech last?
I. He spoke at an average of 50 words per minute.
II. He would have spoken for 10 minutes extra, had his speech rate been 4 words less per minute.

65. Asha and Munni share a room on rent in proportion to their stay period. How much would each pay in Apr 2004?
I. Asha had gone out for 10 days and her friends stayed alone till Asha returned and then both stayed for the remaining part of the month.
II. Asha's friend paid Rs 15 for her stay.

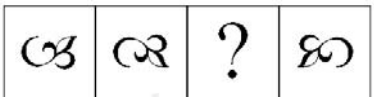
66. The first figure in the first unit of the problem figures bears a certain relationship to the second figure. Similarly, one of the figures in the answer figures bears the same relationship to the second figure in the second unit of the problem figures. You are therefore to locate the figure which would replace the question mark.



a)  (b) 

(c)  (d) 

67. Find the missing term



(a)  (b) 

(c)  (d) 

68. Study the following information carefully and answer the question following it.
A. 'P + Q' means 'P' is the father of 'Q'.
B. 'P – Q' means 'P' is the sister of 'Q'.
C. 'P × Q' means 'Q' is the brother of 'P'.
D. 'P * Q' means 'P' is the son of 'Q'.
E. 'P # Q' means 'Q' is the daughter of 'P'.
Which of the following means 'R' is the grandson of 'B'?
(a) K × D + M * B # Q × R (b) K × B + M * D # Q - R
(c) K × B + M * D # Q × R (d) none of these

Directions (Q. 69 – 72):
I. A cause B or C but not both
II. F occurs only if B occurs
III. D occurs if B or C occurs
IV. E occurs only if E or F occurs
V. J occurs only if C occurs
VI. D causes G or H or both
VII. H occurs if E occurs VIII. G occurs if F occurs

69. If A occurs which of the following may occur?
(i) F and G (ii) E and H (iii) D
(a) i, ii & iii (b) i & iii or ii and iii but not both
(c) i only (d) iii only

70. If B occurs which must occurs?
(a) F & G (b) D & G (c) D (d) G & H

71. If J occurs which must have occurred?
(a) E (b) Both B & C
(c) Either B or C (d) Both E & F

72. Which may occur as a result of a cause not mentioned?
(i) D (ii) A (iii) F
(a) i only (b) ii only
(c) i and ii only (d) ii and iii only

73. The value of $\frac{2}{3!}+\frac{4}{5!}+\frac{6}{7!}+....$ is
(a) e^{-2} (b) e^{-1} (c) $2e^{-1}$ (d) $2e$

Directions (Q. 74 – 76): Find the missing term in the number series given in each of the questions.

74. 5, 24, 98, 291, 586, ?
(a) 581 (b) 640 (c) 520 (d) 508

75. 1, –2, 6, –3, 4, ?, 24
(a) –9 (b) 9 (c) –8 (d) 8

76. 2, 2, 4, 64, ?
(a) 64 (b) 128 (c) 256 (d) 16777216

Directions (Q. 77 –80): Study the following information carefully and answer the questions given below it:
(1) Six boys B_1, B_2, B_3, B_4, B_5 and B_6 and six girls C_1, C_2, C_3, C_4, C_5, and C_6 are standing in rows in such a way that each girl faces one boy, not necessarily in the same order.
(2) C_1 is to the immediate right of the girl who is facing B_5, the boy at the extreme right. Only B_2 is between B_4 and B_5. B_6 is to the immediate left of B_1 and is to the immediate right of B_3. C_3 is facing B_1 and is to the immediate left of C_2. C_6 is third to the left of C_4.

77. Which of the following girls is facing B_4?
(a) C_5 (b) C_4 (c) C_3 (d) C_6

78. Which of the following pairs of boy and girl is at one of the extreme ends?
(a) C_1, B_5 (b) C_4, B_5 (c) C_5, B_2 (d) none of these

79. Which of the following boys is to the immediate left of B_4?
(a) B_1 (b) B_2 (c) B_1 or B_2 (d) none of these

80. Who is facing C_2?
(a) B_1 (b) B_6 (c) B_4 (d) none of these

Directions (Q. 81–85): Study the following information carefully and answer the questions given below:
Six books on different subjects viz, Physics, Chemistry, Mathematics, Zoology, English and History are placed one above the other but not necessarily in the same order. Each book belongs to different persons viz, A,B,C,D,E and F but not necessarily in the same order.
Only the book of Zoology, which belongs to F, is placed between the books of History and Chemistry. The book of English is just above the book of Chemistry and just below the book of Physics. The book of Mathematics is not kept above the book of Zoology.
The book of B is neither on the top nor at the bottom. The book of Chemistry of D is kept just below the book of A. The book of E is at the bottom.

81. On which subject does B have the book?
(a) Chemistry (b) English (c) History (d) none of these

82. Which of the following book is kept on the top?
(a) Mathematics (b) English
(c) Zoology (d) physics

83. Who among the following has the book of History?
(a) B (b) E (c) C (d) none of these

84. Which of the following books is third from the bottom?
(a) Chemistry (b) Zoology
(c) History (d) English

85. In a shop, there were 4 dolls of different heights M, N, O and P. 'P' is neither as tall as 'M' nor as short as 'O'. 'N' is shorter than 'P' but taller than 'O'. If Anvi wants to purchase the tallest doll, which one should she purchase?
(a) Either M or P (b) Either P or N
(c) Only P (d) Only M

Directions (Q. 86 – 90): In each question below are given two statements followed by four conclusions numbered I, II, III and IV. You have to take the two given statements to be true even if they seem to be at variance with commonly known facts. Read all conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

86. Statements:
Some blues are bills.
Some bills are shoes.
Conclusions:
I. Some bills are blues II. Some shoes are bills
III. All bills are blues IV. No blue is bill
(a) Only I, II and III follow
(b) Only I and either III or IV follow
(c) none of these follows (d) Only I and II follow

87. Statements:
All doors are matches.
Some matches are bricks.
Conclusions:
I. Some matches are doors.
II. Some matches are not doors.
III. Some doors are brick. IV. No door is brick
(a) Only either I or II and III or IV follow
(b) Only I and either III or IV follow
(c) All follow (d) none of these follows

88. Statements:
No book is prize.
All prizes are shops.
Conclusions:
I. No book is shop. II. Some shops are books.
III. Some shops are prizes. IV. Some prizes are books.
(a) Only III follows

(b) Only either I or II follows
(c) Only either I or II and III follow
(d) All follow

89. Statements:
All cigars are dogs.
All dogs are cats.
Conclusions:
I. All cats are cigars. II. All cigars are cats.
III. Some cats are dogs. IV. No cat is dog.
(a) Only I and IV follow (b) Only II and IV follow
(c) Only II and III follow (d) none of these

90. Statements:
Some big are small.
All small are huge.
Conclusions:
I. Some huge are big. II. Some big are huge.
III. All huge are small. IV. All small are big.
(a) none of these follows (b) Only I and III follow
(c) All follow (d) Only I and II follow

Directions (Q.91 – 95):
(i) In a joint family of 8 persons A, B, C, D, E, F, G and H, there are 3 married couples. Two of them have one child each while one has 2 children. The no. of generations is three.
(ii) F is lawyer and a grandfather of D. E is the son of G, who is a housewife. The CA is married to the actress. B, who is the brother of E is a police men. H is a married teacher. A is not married. There is a doctor and a musician in the family.

91. Who is the grandmother of D?
(a) H (b) C (c) A (d) G

92. What is A's profession?
(a) Doctor (b) Musician (c) CA (d) data inadequate

93. Who is the CA?
(a) A (b) C (c) E (d) none of these

94. If the sum of all the positive even integers < 1000 is A, what is the sum of all positive odd integers less than 1000 ?
(a) A – 998 (b) A – 449 (c) A + 1 (d) A + 500

95. A sequence of numbers begins 1, 1, 1, 2, 2, 3 and repeats this pattern for ever. What is the sum of 141^{th}, 143^{rd} and 145^{th} number?
(a) 4 (b) 5 (c) 6 (d) 7

Directions (Q. 96 – 98): Three statements follow below the questions asked. How many statement(s) would be required to answer the questions from the options given below?

96. What is the present age of father?
(A) Difference in ages of father and son is 24 years.
(B) Present age of son is 1/5 of present age of father
(C) After 6 years from now, the age of son will be 1/3 of father's age.
(a) Only A and B (b) only B and C
(c) Only A and C
(d) Any two of the statements are required to answer the question.

97. What is the cost of fencing a rectangular plot?
(A) Length of the plot is twice its breadth
(B) Area of the plot is 288 Square metres
(C) Cost of fencing is Rs. 4/- per metre
(a) B and C only (b) A and C only
(c) A and B only
(d) All the three statements A, B and C are required to answer the question.

98. What is the length of the train?
(A) The train crosses a signal pole in 18 seconds.
(B) Train crosses a 200 m platform in 30 seconds
(C) Speed of the train is 60 kmph.
(a) A and C only (b) B and C only
(c) C and A or B only (d) none of these

Directions (Q. 99 – 100): Study the following information carefully and answer the questions given below it.
Sanjay starts walking from a point P and walks towards south a distance of 10 m and reaches point Q. Now he turns right and walks again a distance of 10 m and reaches R. Again he turns left and walks 10 m and reaches S. Now he turns right and reaches T after walking a distance of 10 m more. He again turns left and reaches U after walking a distance of 10 m more. Again returns right and walks a distance of 10 m and reaches point V. Now, after making a journey 40 m further west he reaches point W.
At this point he turns right and reaches point X after walking 50 m more. He always follows the straight route between any two points.

99. What is the shortest distance between X and V?
(a) Can't say (b) 90 m (c) 64.03m (d) none of these

100. What is the shortest distance between X and P?
(a) 67.81m (b) 76.81m
(c) 86.18m (d) none of these

Directions (Q. 101 – 103): In each of the following questions, a given statement is followed by two assumptions X and Y, You have to choose
(a) if only assumption X is implicit
(b) if only assumption Y is implicit
(c) if both X and Y are implicit

(d) if neither X nor Y is implicit

101. Statement: 'Write down my telephone number and e-mail address". – A tells B
Assumptions: X. B has no access to Internet
Y. B might need to contact 'A" if situation compels 'B' to do so.

102. Statement: We provide you a better chance to appear for mock-test and get acquainted with your position in All India Ranking as well as your performance in the exam 'Z'. – An advertisement of a leading institution
Assumptions:
X. Performance by student in examination 'Z" can't be predicted before the examination
Y. Student wants to evaluate their preparation for any examination.

103. Statement: Buy 'ABC' herbal shampoos which are made from natural herbs that go deep under the surface to nourish hair from the roots. – An advertisement by a cosmetic producer
Assumptions:
X. People have faith in shampoos.
Y. People have faith in natural herbs.

104. With the help of a wire a square is made of area $225m^2$. If an equilateral triangle is made with the same wire then what would be the length of the side of the triangle?
(a) 15m (b) 17.5m (c) 24m (d) 20m

105. In a certain code language 'ROUTINE' is written as 'VMRGFLI'. How will 'CRUELTY' be written in that code language?
(a) VPVZRL (b) VPCVZRL (c)
(c)WPCVZRL (d) none of these

Directions (106-110): Each of the following questions consists of 2 capitalized words which have a certain relationship to each other, followed by 4 numbered pairs of words, choose the numbered pairs which are related to each other in the same way as the words of the capitalized pair.

106. HOSANNA: PRAISE
(a) MEAL: WORDS (b) SCOLD: ADORE
(c) EULOGY:BALLED (d) UMBARGE:OFFEND

107. SYNCOPE: FAINTING
(a) SUGAR: DIABETES
(b) HYPERTENSION: BLOOD PRESSURE
(c) CONSCIOUS: UNCONSCIOUS
(d) STUPOR: REGALE

108. PRIEST: CASSOCK
(a) DOCTOR: GOWN (b) PRETTY : CHEAP
(c) DUST : MONEY
(d) SHABBY: SPARIGNLY

109. BOOT: FOOT
(a) LANCE : SPEAR (b) HELMET: HEAD
(c) KNIGHT: DOCTOR (d) PROTECT: EXPOSED

110. HURDLE: CROSS
(a) ATHLETE: JUMP (b) BLOCK: AVOID
(c) ROAD: DETOUR (d) BURDEN: CARRY

Complete the Sentence

111. It was the help he got from his friends which _____ him through the tragedy.
(a) supported (b) helped (c) parked (d) boosted

112. Beauty is to ugliness as adversity is to _____.
(a) happiness (b) prosperity (c) misery (d) cowardice

113. All of us should abide _____ the laws of our country.
(a) on (b) to (c) by (d) in

114. Though Bindu is poor, _____ she is honest.
(a) still (b) nevertheless (c) but (d) yet

Against each key word are given some suggested meanings. Choose the word or phrase which is nearest in meaning to the key word.

115. Docile
(a) vague (b) gentle (c) stupid (d) stubborn

116. Aromatic
(a) crippled (b) fragrant (c) sentimental (d) stinking

Pick out the word opposite or nearly so in the meaning of the given words

117. Alleviation
(a) lessening (b) magnification
(c) intensify (d) aggravation

118. Receded
(a) bloomed (b) advanced
(c) increased (d) diminished

119. Transparent
(a) translucent (b) vague (c) blind (d) opaque

120. Extrovert
(a) boaster (b) mixer (c) introvert (d) social