MCA (Computer Science)

1. In C programming language, False and True are respectively represented by :

   (a) 0 and non-zero value

   (b) 0 and 1 only

   (c) any −ve value and any non-zero value

   (d) any −ve value and non-zero value

2. The result of the expression (5%7) in C is :

   (a) 2

   (b) 5

   (c) 7

   (d) None of the above

3. For function overloading in C++, name of the functions should be same and :

   (a) return type and all the arguments must be different

   (b) all the arguments must be different

   (c) return type and any one argument must be different

   (d) any one argument must be different

4. The destructor function in C++ can be invoked :

   (a) only explicitly

   (b) either explicitly or implicitly

   (c) only implicitly

   (d) none of the above

5. In C++, reusability of the code can be achieved with use of :

   (a) inheritance

   (b) polymorphism

   (c) abstraction

   (d) none of the above

6. In MS-DOS, to delete the entire directory (files as well as folder) we can use the command :

   (a) Del

   (b) DelTree

   (c) DelDir

   (d) None of the above

7. Which of the following is *not* a part of Windows operating system ?

   (a) MS-Word

   (b) WordPad

   (c) Calculator

   (d) Paint

8. The fundamental purpose of cat command in UNIX/LUNIX is :

   (a) to make a text file

   (b) to copy

   (c) to display

   (d) none of the above

9. The statements/instructions of an algorithm should be :

   (a) infinite and ambiguous

   (b) finite and ambiguous

   (c) infinite and unambiguous

   (d) finite and unambiguous

10. Which of the following is the fastest searching algorithm ?

    (a) Linear Search Technique

    (b) Binary Search Technique

    (c) Hashing Technique

    (d) None of the above

11. Which of the following is *not* a Data Structure ?

   (a)   FILE

   (b)   TREE

   (c)   ARRAY

   (d)   None of the above

12. In SQL, we can merge the output of two or more queries into a single set of rows and columns using the verb :

   (a)   Join

   (b)   Merge

   (c)   Union

   (d)   None of the above

13. Rows in a Relation (i.e., table) are called :

   (a)   Entity

   (b)   Attribute

   (c)   Tuples

   (d)   None of the above

14. The octal equivalent of the $(10001)_2$ is :

   (a)   21

   (b)   17

   (c)   5

   (d)   None of the above

15. 16-bit word machine using 2's complement notation can represent an integer N where N is as :

   (a) $-2^{15} \leq N \leq 2^{15} - 1$

   (b) $-2^{16} \leq N \leq 2^{16} - 1$

   (c) $-2^{15} \leq N \leq 2^{15}$

   (d) $-2^{16} \leq N \leq 2^{16}$

16. Which of the following is a linear expression ?

    (a) $aX^2 + b$

    (b) $XY + Z + C$

    (c) $aX^2 + bX + C$

    (d) None of the above

17. Which of the following is *not* an iterative method ?

    (a) Gauss-Jordan Elimination Method

    (b) Euler's Method

    (c) Bisection Method

    (d) None of the above

18. When 6 litres petrol is put in a car the indicator moves from 1/4 to 5/8. The total capacity of petrol tank in litres is :

    (a) 12

    (b) 15

    (c) 16

    (d) None of the above

19. A number of men went to a hotel and each spent as many paise as there are men. If the total money spent was Rs. 151.29, how many people were there in the group ?

    (a) 1512

    (b) 113

    (c) 123

    (d) None of the above

20. What is the greatest number that divides 87, 143 and 227 to give the same remainder in all the three cases ?

    (a) 14

    (b) 21

    (c) 26

    (d) 28

21. Hamid can do a piece of work in 10 days. Ahmad can do it in 15 days. If they work together and finish the work, Hamid and Ahmad should share the earnings in the ratio :

   (a)   1 : 1

   (b)   2 : 3

   (c)   3 : 2

   (d)   5 : 3

22. A room has dimensions 3m × 4m × 12m. What is the length of the largest pole that can be put the room ?

   (a)   12 m

   (b)   13 m

   (c)   12.5 m

   (d)   None of the above

23. A lamp is manufactured to sell for Rs. 35 which yields a profit of 25% of the cost. If the profit is to be reduced to 15% the new retail price would be :

   (a)   Rs. 21.00

   (b)   Rs. 28.00

   (c)   Rs. 31.50

   (d)   Rs. 32.20

24. Only birds have feathers. If this statement is true, which of the statement is also true ?

   (a)   All feathers are light

   (b)   Birds fly in the air

   (c)   Elephants do not have feathers

   (d)   None of the above

25. The day that will come after two days after tomorrow will be Friday. What was the day that dawned two days before yesterday ?

   (a)   Saturday

   (b)   Sunday

   (c)   Monday

   (d)   Friday

26. In the following sets of figures, find the value of K :

1	2	21
3	4	17
7	K	8

(a) 5

(b) 9

(c) 11

(d) 13

27. In a group of 15 men, 7 can speak Russian, 8 can speak German, and 3 can speak neither. What fraction of group can speak both Russian and German ?

(a) 4/5

(b) 3/5

(c) 2/5

(d) 1/5

28. What percent is $1/5^2$ of 5^2 ?

(a) 160

(b) 15

(c) 0.16

(d) 4.5

29. Rekha went shopping with D rupees. She spent 20% of her money on a blouse and 25% of what was left on a pair of shows. What percent of original D rupees, did she spend ?

(a) 25

(b) 40

(c) 45

(d) 54

30. If the diameter of each wheel of a train is 90 cm and speed of the train is 66 kmph, what will be the appropriate number of revolutions made by the wheel in one minute ?

(a) 398

(b) 389

(c) 366

(d) 636

31. A merchant sold two dresses for Rs. 24 each. He made a 25% profit on one and lost 20% on the other. What was his net gain or loss on the sale of two dresses ?

    (a)   Rs. 1.80 gain

    (b)   Rs. 1.20 loss

    (c)   Rs. 6.00 loss

    (d)   Rs. 2.40 gain

32. 6, 9, 14, 21, ...

    (a)   25

    (b)   30

    (c)   256

    (d)   384

33. 3, 9, 21, ..., 93

    (a)   54

    (b)   83

    (c)   69

    (d)   45

34. 5, 7, 12, 19, ...

    (a)   23

    (b)   31

    (c)   29

    (d)   None of the above

35. The derivative of x^x with respect to x is :

    (a) $x^x (1 + \log x)$

    (b) x^x

    (c) $x^{x-1} (1 + \log x)$

    (d)   None of the above

36. The fifth derivative of $(2x + 3)^5$ with respect to x is :
   (a) 120
   (b) 3840
   (c) 3600
   (d) $240 (2x + 3)$

37. The equation of the tangent at $(4, 4)$ to $y^2 = 4x$ is :
   (a) $x - 2y = 0$
   (b) $x - 2y + 5 = 0$
   (c) $x - 2y + 4 = 0$
   (d) $x + 2y - 12 = 0$

38. The angle between $x^2 = y$ and $y^2 = x$ at $(0, 0)$ is :
   (a) $0°$
   (b) $30°$
   (c) $60°$
   (d) $90°$

39. The gradient of the normal to $y = x^2 - 2$ at $(-2, 2)$ is :
   (a) $1/4$
   (b) $-1/4$
   (c) 4
   (d) -4

40. If the radius of a sphere is 7 cm, the error in the surface area of the sphere due to an error of 0.25 cm in the radius is :
   (a) 7π sq. cm
   (b) 14π sq. cm
   (c) 2π sq. cm
   (d) 21π sq. cm

41. Which one of the following sentences is *true* ?
   (a) Every stationary point need not be a turning point
   (b) Every stationary point is a turning point
   (c) A turning point need not be a stationary point
   (d) None of the above

42. The fraction, the difference between which and its squire is a maximum, is :
   (a) $1/4$
   (b) $3/4$
   (c) $1/2$
   (d) $1/3$

43. The standard deviation of natural numbers 1 to 20 is :
   (a)   5.7
   (b)   4.3
   (c)   7.3
   (d)   None of the above

44. In a batch of 15 students, 5 students failed in a test. The marks of 10 students who passed were 9, 6, 7, 8, 8, 9, 6, 5, 4 and 7. What was the median of all the fifteen students ?
   (a)   8
   (b)   6
   (c)   7
   (d)   None of the above

45. If $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 2 & 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -2 \\ -1 & 0 \\ 2 & -1 \end{bmatrix}$ the product AB is :

   (a) $\begin{bmatrix} 3 & -2 \\ 5 & -5 \\ 7 & -8 \end{bmatrix}$

   (b) $\begin{bmatrix} 8 & 7 \\ 7 & -5 \\ 9 & -4 \end{bmatrix}$

   (c) $\begin{bmatrix} -5 & -7 \\ 2 & -4 \\ -6 & 7 \end{bmatrix}$

   (d)   None of the above

46. The real root of the equation $x^3 - 2x - 5 = 0$ is :

   (a) 2.999

   (b) 2.094

   (c) 1.898

   (d) None of the above

47. If A and B are two sets, then $A \cup (A \cap B)$ equals :

   (a) A

   (b) B

   (c) $A \cup B$

   (d) $A \cap B$

48. The determinant of :

$$\begin{bmatrix} 0 & 1 & 2 & 3 \\ 1 & 0 & 3 & 0 \\ 2 & 3 & 0 & 1 \\ 3 & 0 & 1 & 2 \end{bmatrix}$$

   is :

   (a) 44

   (b) 66

   (c) 8

   (d) None of the above

49. The value of $\underset{x \to 0}{\text{Lt}} \dfrac{\log x}{\cot x}$ is :

   (a) 1

   (b) ∞

   (c) 0

   (d) None of the above

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50. The rank of

$$\begin{bmatrix} 2 & 1 & 3 \\ 4 & 2 & 0 \\ 0 & 0 & 5 \end{bmatrix}$$

is :

(a) 1
(b) 2
(c) 3
(d) None of the above

51. The series $\displaystyle\sum_{1}^{\infty} \frac{n^p}{n!}$ will :

(a) Diverge
(b) Converge
(c) Uncertain
(d) None of the above

52. The correct antonym for RECTIFY is :

(a) Specify
(b) To set right
(c) Modify
(d) Purify

53. The correct antonym for QUIXOTIC is :

(a) Serious
(b) Foolish
(c) Subdue
(d) None of the above

54. The correct synonym for Spouse is :

(a) hard working officer
(b) husband/wife
(c) an irregular spot
(d) none of the above

55. The correct synonym for RETRACE is :

   (a) To certify

   (b) To run

   (c) To go back

   (d) To payback

56. He has grown quite feeble :

   (a) poor

   (b) weak

   (c) strong

   (d) none of the above

57. The correct synonym for PIGMY is :

   (a) dwarf

   (b) designed

   (c) spotted

   (d) related

58. The correct synonym for Falter is :

   (a) To speak clearly

   (b) To hesitate in speech

   (c) To put on flesh

   (d) None of the above

59. The correct synonym for Taunt is :

   (a) Subdue

   (b) Sarcastic remark

   (c) Hooked

   (d) None of the above

60 The correct synonym for constraint is :

   (a) Constant

   (b) Variable

   (c) Compulsion

   (d) None of the above