



01

No. Classes

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**Under the Guidance of
Amit Katiyar**



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**AMIT KATIYAR
(MCA-JNU)**

0512-3163515 9935985550



- A combinational circuit can be designed using
 - XOR gates
 - NOR gates
 - AND gates
 - OR gates
- While calculating standard deviation the deviation of a series is taken from
 - Mean value of the series
 - Mode value of the series
 - Median value of the series
 - Quartile value of the series
- Order of the partial differentiation

$$\frac{\partial^2 z}{\partial x^2} - \left(\frac{\partial z}{\partial y}\right)^5 + \frac{\partial^2 z}{\partial x \partial y} = 0$$
 - 5
 - 4
 - 2
 - 1
- Probability of a obtaining number greater than 6 on an unbiased die
 - $\frac{5}{6}$
 - $\frac{3}{6}$
 - 1
 - 0
- Error correction & detection is done in computer network by
 - Passing it through equalizer
 - By amplifying
 - Adding redundancy bits
 - Passing through filter
- The function $x^3 - 12x^2 + 45x + 8 = 0$ is maximum at
 - 3
 - 1
 - 2
 - 4
- Algorithm to sort n -integer having range 0 to $(n^2 - 1)$ is ascending order in $O(n)$ time is
 - Bubble sort
 - Insertion sort
 - Selection sort
 - Radix sort
- Which one of the following is false
 - A tree is a continuous graph
 - A tree with n nodes contain $(n - 1)$ edge
 - A tree has bipartite graph
 - Tree contains cycle
- Which one of the following is false
 - Virtual memory is used only in multiuser system
 - Segmented memory can be paged
 - Segmentation suffer from external fragmentation
 - Paging suffer from internal fragmentation
- Which of the following is true
 - $A^T = A$
 - $(A^*)^* = I$
 - $(AB)^{-1} = B^{-1}A^{-1}$
 - $AB = BA$
- Number of vertices of odd degree in a graph equals to
 - Always Even
 - Zero
 - Either Even even or odd
 - Always odd
- In c programming, pointer variable to be integer can be created by the declaration
 - `int p*`
 - `int *p`
 - `int -p`
 - `int &p`
- Complete binary tree with the property that the value of each node is atleast as large as the values of its children is
 - Binary search tree
 - Completely balanced tree
 - AVL tree
 - HEAP
- Lowest level of abstraction that describes how the data are stored in a database is
 - Physical schema
 - ER Schema
 - External Schema
 - Conceptual Schema
- In CISC Architecture most of the complex instruction are stored in
 - Diodes
 - Transistors
 - Register
 - CMOS
- In Boolean Algebra the word "Literal" Means
 - A Product term
 - All the variable
 - A Variable and it's Complement
 - Inverse function
- Actual data stored in DBMS at a particular moment of time is called
 - Instance of database
 - Schema
 - Independence
 - Data Domain
- Which of the following is Lowest in computer hierarchy
 - CPU Register
 - RAM
 - Cache
 - Secondary Memory
- If A is any Square matrix then AA^T is
 - Diagonal matrix
 - Skew symmetric matrix
 - Unit Matrix
 - Symmetric Martix





20. If there are 32 Segment each of size 1 KB, then the logical address should have
 (a) 14 bits (b) 15 bits
 (c) 16 bits (d) 13 bits
21. Number of real roots of $(x + 1)^2 - x^2 = 0$ is
 (a) 1 (b) 2
 (c) 3 (d) 4
22. MS-Dos reallocatable object files & load module have the extensions
 (a) .exe & .obj (b) .com & .obj
 (c) .obj & .com or .exe (d) .dos & .exe
23. Which is not done by data link layer
 (a) Error detection & Counter
 (b) Channels coding
 (c) Framing
 (d) Flow control
24. Entity Relationship Model was is _____ proposed by
 (a) Jaiwei HAN (b) Peter P Chen
 (c) Elmaske Nanethe (d) Agrawal & Srikant
25. Dijkstra's Banking Algorithm solve the problem of
 (a) Context Switching
 (b) Deadlock avoidance
 (c) Deadlock recovery
 (d) Mutual exclusion
26. Minimum Number of stack needed to implement a queue
 (a) 1 (b) 2 (c) 3 (d) 4
27. Condition for second order partial equation to be hyperbolic
 (a) $b^2 - ac \leq 0$ (b) $b^2 - ac = 0$
 (c) $b^2 - ac < 0$ (d) $b^2 - ac > 0$
28. Which is not a backtrack algorithm
 (a) N-queen algorithm
 (b) Tower of Hanoi
 (c) M-coloring Algorithm
 (d) Kinght tour problem
29. When collection of various computer seems a single coherent system to its client then it is called
 (a) Distributed system (b) Networking system
 (c) Mailing System (d) Computer network
30. Number of Arbitrary constant in a particular solution of differential equation of 3rd order
 (a) 0 (b) 3
 (c) 2 (d) 1
31. Solve by Gauss Elimination Method
 $2x + y - 3z = -10$
 $-2y + z = -2$
 $z = 6$
 (a) 2,4,6 (b) 3,4,6
 (c) 2, 7, 6 (d) 2,4,5
32. If a box A consists of 5 black and 4 green coins, and a box B consists of 6 green and 3 black coins. If a coin is taken from A and transferred to B, and then a coin is drawn from B. Then find the probability that a black coin is transferred to B, given that a green coin is drawn from B ?
 (a) $\frac{1}{2}$ (b) $\frac{14}{29}$ (c) $\frac{15}{29}$ (d) $\frac{7}{10}$
33. Only one location is reserved for a class variable no matter how many times it is initialized then variable should be
 (a) Extern (b) Static
 (c) Volatile (d) Count
34. Which Scale applied in statistics to distinguish the difference in magnitude and proportion of a quantity
 (a) Exponential scale (b) Good Scale
 (c) Ratio Scale (d) Satisfactory scale
35. 4 byte IP address consists
 (a) Network & mac address
 (b) Network & host address
 (c) Network address only
 (d) host address only
36. A Process is in "Blocked" state waiting for I/O service, when the service is completed then it goes to
 (a) Ready state (b) Suspended state
 (c) Terminate state (d) Running State
37. Which of the following is Not correct about having clause
 (a) Invoke group, attribute & aggegriate function
 (b) used before grouping
 (c) used after grouping
 (d) Used in group to eliminate group which does not satisfy the condition
38. Order of differential equation of family of circles with one diameter along line $y = x$
 (a) 0 (b) 1 (c) 2 (d) 3
39. Eigen value $\begin{bmatrix} 1 & 8 \\ 2 & 1 \end{bmatrix}$
 (a) 4 (b) 6 (c) -3 (d) 2





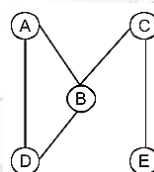
40. Automatic repeat request error management mechanism is provided by
 (a) Network Interface control sub layer
 (b) Media access control sub layer
 (c) Logical link control sub layer
 (d) Application access control sub layers
41. Output of C program

```
int main()
{
    int a = 1, b = 2, c = 3;
    printf("%d", a + (a + 3, 5, a));
}
```

 How is this evaluated?
 (a) 8 (b) 6 (c) 9 (d) 12
42. Device that store one bits is called
 (a) Flip-flop (b) Gate
 (c) Register (d) counter
43. In a GP where first term = 20 common ratio = 4 then 5th term
 (a) 2560 (b) 10240 (c) 10496 (d) 5120
44. Hamming distance between 001111&010011 is
 (a) 1 (b) 2 (c) 3 (d) 4
45. In DBMS cardinality of relationship is defined by
 (a) Number of non null relation
 (b) No's of Rows in relation
 (c) No's of column in relation
 (d) No of tuples in relation
46. In UNIX system can create new program by
 (a) Init (b) New
 (c) Create (d) fork
47. A subset of Network that include all the routers but contains no loop is
 (a) spider tree (b) spider structure
 (c) spanning tree (d) special tree
48. Dirty bit is used in
 (a) Page within the memory
 (b) Page that is being modified
 (c) Page that is less frequently used
 (d) Page with corrupted data
49. The necessary condition for using binary search in an array is
 (a) The array should be sorted
 (b) The array should be not too long
 (c) The array should be less size
 (d) The array should be more size

50. A stack based CPU organization uses address instruction
 (a) 2 (b) 3 (c) 1 (d) 0
51. How many bits of data can be transfer by parallel port
 (a) 8 (b) 4
 (c) 2 (d) 16
52. Which of these characters does the second - order Runge - Kutta - method use
 (a) forward rule corrector
 (b) Mid point rule corrector
 (c) Backward rule corrector
 (d) Trapezoidal corrector
53. A partial differential equation requires :
 (a) Move then one dependent variable
 (b) Exactly one independent variable
 (c) Two or more independent variable
 (d) Exactly one dependent variable
54. Given that $x = 7.5, j = -1.0, n = 1.0, m = 2.0$ the value of $-(x + j) = (x > (n = m))$ is :
 (a) 2 (b) 0 (c) 1 (d) 3

55.



In the given graph identify at cut curves

- (a) A & E (b) C & B
 (c) B & E (d) C & D
56. Arrange the steps given below in correct order to form a differential equation
 1. Eliminate the arbitrary constant
 2. Find in the form of $dy/dx, x, y$
 3. Differentiate the given equation with respect to x as many times the number of arbitrary element given
 (a) 3,2,1 (b) 2,3,1
 (c) 3,1,2 (d) 2,1,3
57. If $z = 3xy + 4x^2$, what is the value of $\frac{dz}{dx}$
 (a) $3y + 3x + 8y^2$ (b) $3x + 8y$
 (c) $3y + 8x$ (d) $3x + 4x^2$
58. A register capable of shift its binary information either information either to the right or to the left :
 (a) Storage (b) Series Register
 (c) Parallel Register (d) Shift Register





59. There are 5 strawberries, 4 apples, 3 banana & 1 fruit of each three kind are there. Then how many way one fruit from each kind is to be selected
 (a) 45 (b) 43
 (c) 60 (d) 35
60. $3x \log x + 5e^x x^6$ is derivative with respect to x is :
 (a) $3 + 3 \log x + 30e^x x^5 + 5e^x \cdot x^6$
 (b) $3e \log x$
 (c) $5ex + 5x^6$
 (d) $3 \log x + 5e^x x^6$
61. Suppose the number 7, 5, 1, 8, 3, 6, 0, 9, 4, 2 are inserted in that order into initially empty binary search tree. The binary search tree uses the usual ordering on natural number. What is the in-order transversal sequence of the resultant tree
 (a) 0243165987 (b) 7510324689
 (c) 9864230157 (d) 0123456789
62. What is the output of following c programming?

```
#include <stdio.h>
int main ()
{
    int i = 3;
    print f("%d", (++i)++);
    return ();
}
```

 (a) 3 (b) 5
 (c) 4 (d) Compilation error
63. Which of the following standard algorithms is not dynamic programming based:
 (a) Floyd warshall Algorithm for all pairs shortest paths
 (b) 0 – 1 knapsack problem
 (c) Prim's minimum spanning tree
 (d) Bellman-ford algorithm for single source shortest path
64. In comparison to Gauss Seidel, Newton Raphson method taken
 (a) less of iterations and more time per iteration
 (b) more of iterations and less time per iteration
 (c) more of iterations and more time per iteration
 (d) less of iteration and less time per iteration
65. How many bit of data can transfer by parallel port
 (a) 4 (b) 16
 (c) 2 (d) 8
66. Find which of the following is continuous random variable
 (a) Number of planets around the sun
 (b) number of tales tossing a coin four times
 (c) life of an electric fan
 (d) Number of kids in family
67. What will be output of following program.

```
#include <stdio.h >
int main ()
{
    int i = 2;
    {
        int i = 4, j = 5
        printf("%d%d", i, j)
    }
    printf ( " %d%d", i, j);
}
```

 (a) 4545 (b) 2525
 (c) 4525 (d) 2545
68. Number of edges present in a complete graph having n vertices
 (a) n (b) $\frac{n}{2}$
 (c) $\frac{n(n+1)}{2}$ (d) $\frac{n(n-1)}{2}$
69. The minimum number of stack needed to implement of queue is
 (a) 1 (b) 3 (c) 2 (d) 4
70. For sliding window $(n - 1)$ (sequence number) there can be maximum of how many frame sent but unacknowledged
 (a) 0 (b) $(n - 1)$ (c) n (d) $(n + 1)$
71. In a complete K-ary tree, every internal node has exactly K-children then no. leaves in such a tree with n internal nodes
 (a) $n(k - 1)$ (b) $(n - 1)k + 1$
 (c) nk (d) $n(k - 1) + 1$
72. Quick sort takes in 2 input
 $C_1 = 1, 2, 3, 4, \dots, N$
 $C_2 = n(n - 1)(n - 2) \dots \dots 2.1$
 Comparison for C_1 and C_2
 (a) $C_1 = C_2$ (b) $C_1 > C_2$
 (c) $C_1 < C_2$
 (d) Any value for arbitrary n ,





73. In DBMS, having clause doesn't perform function
 (a) having clause performed after grouping
 (b) having clause performed before grouping
 (c) having clause perform after grouping perform test of grouping & eliminates group which are not satisfied function
 (d) None of these
74. A B-tree is used to store as an index for a larger database table that has four levels including the roots nodes. If a new key is inserted in this index, then the maximum number of nodes that would be newly created in the process are
 (a) 4 (b) 2
 (c) 5 (d) 1
75. Which of the following command in DBMS is sued to remove a rout from a table, yet keeping the structure of row?
 (a) Truncate (b) Remove
 (c) Drop (d) None
76. Which of the following is not a logical operator of c language
 (a) ! (b) ||
 (c) | (d) &&

77.

0	
1	
2	42
3	23
4	34
5	52
6	46
7	33
8	
9	

If 6 values are to be inserted in a 10 -bit hashing. Using hasing function $10(\text{mod}k)$ Then which of the following could be possible sequence.

- (a) 34,42,23,52,33,46 (b) 42,46,33,23,34,52
 (c) 46,42,34,52,23,33 (d) 46,34,42,23,52,33
78. What is the degree of freedom fro an independent chi-squared test that uses a 5×3 contingency table :
 (a) 2 (b) 3
 (c) 8 (d) 12

79. What is output of following program :

```
# include <stdio.h>
int main ( )
{
    int p = 1
    int q = 2;
    p = p == q;
    Printf ( "%d%d", p, q)
    return 0 ;
}
```

- (a) 22 (b) 02
 (c) 12 (d) compilation error

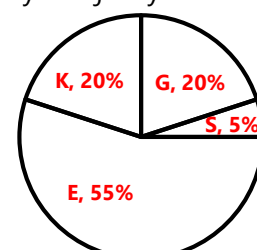
80. What will be output of ' c ' language :

```
#include <stdio. h >
int main ( )
{
    int x, y = 5, z = 5
    x = y == z;
    printf("%d",x);
    getchar 0;
    return 0;
}
```

- (a) 5 (b) 1
 (c) 0 (d) compilation error

ENGLISH SECTION

81. Prof. Suman with his students a project on latest trend in technology
 (a) done (b) are doing
 (c) is doing (d) were doing
82. Spot the grammatical error in the given sentence :
 Sarita will go to the (a) / dance class tomorrow (b) / if she had recovered (c) / from the cold (d)
 (a) b (b) a (c) d (d) c
83. Shravan is not smarter (a)/ then my brother (b) / when it comes (c) / to playing chess (d)
 (a) d (b) a (c) b (d) c
84. Prof. Navin..... this institute since, 2004
 (a) has been serving (b) will leave
 (c) served (d) had been serving
85. Which language is spoken by majority of the students





86. My uncle is _____ MLA
 (a) a (b) an
 (c) the (d) None
87. Preeti sleeping in the morning and work _____ night.
 (a) in (b) at
 (c) for (d) on
88. The work _____ by the workers in a day.
 (a) will be finished (c) has finished
 (b) is being finished (d) will finish
89. We congratulated him _____ his success.
 (a) for (b) on
 (c) at (d) in
90. Which one among the following is not a purpose of a minute writing:
 (a) Meeting minutes is a record for future reference.
 (b) Meeting minutes helps us to understand what being progression has taken place
 (c) Meeting minutes provides historical record of the company is discuss & discussion
 (d) Meeting minutes provides all the information about the company.
91. What is the main purpose of questionnaire?
 (a) To provide information to people
 (b) To make recommendation
 (c) To gather information from respondents
 (d) To share the findings
92. I _____ that movie twenty times
 (a) have seen (b) was seeing
 (c) had been seeing (d) has seen
93. While preparing a questionnaire, the researcher should avoid,
 (a) Writing question respondents, do not understand
 (b) Writing question respondents, are willing to answer
 (c) Writing question respondents are able to answer
 (d) Writing question with filters & routers
94. _____ we had parked our car in the parking lot the traffic police issued us a parking ticket.
 (a) Since (b) Because
 (c) Although (d) As

95. Study the following table, showing monthly sales of mobile phones of five models by the shops to answer the question that follows :

Model	P	Q	R	S	T
A	1750	3850	2340	2380	310
B	3100	2160	4700	2490	1820
C	3670	6530	4700	5600	3660
D	800	586	780	8500	800
E	1150	1320	1180	2000	305

Which mobile shop has the lowest sales of both model A & E as compared to the other shops

- (a) Q (b) S
 (c) R (d) T
96. _____ English professor who taught us, is retiring today
 (a) No article (b) An
 (c) The (d) A
97. Spot the grammatical error in the given sentence-
 The meteorological department (a) / predicted that the (b) / rains & thunderstorm may (c)/ continue throughout today (d)
 (a) a (b) b
 (c) c (d) d
98. Given four steps to operate a fire extinguisher. Arrange them in order
 A. Squeeze the lever slowly
 B. Aim low towards the base of fire.
 C. Pull the pin while holding the extinguisher away from you to unlock the mechanism.
 D. Sweep the nozzle from side to side at the base of fire.
 (a) CBDA (b) CBAD
 (c) BCAD (d) CABD
99. Spot grammatical error
 Instead laying off (a) / the workers, the company (b) / decided to ask them (c) / to avail voluntary retirement (d).
 (a) a (b) c
 (c) b (d) d





100. The purpose of pre-testing the questionnaire is to determine the following except

- (a) Whether the question have been placed in the best order.
- (b) Whether the question as they are asked will achieve the desired results
- (c) Whether the question are difficult
- (d) Whether the instruction to respondents are adequate

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ORIGINAL PAPER

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

