79/2015

(Pages : 4)

Maximum : 200 marks

Time : 1½ hours

PART I

(Each question carries 4 marks)

A. Choose the Correct Answer :

1. The largest positive number which can be stored in a computer that has 8-bit word length and uses 2's complement arithmetic is

   (a) 256 (b) 127

   (c) 128 (d) 235

2. The DBMS language component that can be embedded in a program

   (a) DDL (b) DCL

   (c) DML (d) DAL

3. The prototype of the function **gets(s)** is included in the file

   (a) stdio.h (b) ctype.h

   (c) string.h (d) stdlib.h

4. What will be the output of the following code?

```
#define MAX 5 + 2
main( )
{
    int k = 0;
    k = MAX* MAX ;
    printf ("%d", k);
}
```

   (a) 49 (b) 0

   (c) 37 (d) 14

[P.T.O.]

5. A multiplexer with 3 select line is a

(a) 3:1 MUX (b) 8:1 MUX

(c) 4:1 MUX (d) 16:1 MUX

6. A sequential circuit with 12 states will have ———— flipflops.

(a) 12 (b) 3

(c) 4 (d) 16

7. The key that represents relationship between tables

(a) Foreign Key (b) Super Key

(c) Candidate Key (d) Primary Key

8. Which among the following instruction is not related to carry flag?

(a) CLC (b) STC

(c) CMC (d) CLD

9. The requested tracks in the order received are 56, 58, 40,15, 92, 160, 150, 40, 170. The average seek time of

(1) C-SCAN (2) SCAN (3) SSTF (4) FIFO

(a) 1 > 2 > 3 > 4 (b) 4 > 3 > 1 > 2

(c) 4 > 1 > 2 > 3 (d) 4 > 3 > 2 > 1

10. A Bluetooth network that supports communication between maximum 8 devices is called a

(a) Scatternet (b) Minibus

(c) Piconet (d) VLAN

B. Fill in the Blanks :

11. Bubbled AND gate is equivalent to a ———— gate.

12. ———— bit indicates whether the block has been modified during its cache residency.

13. In class A network ———— bits are used for host identification.

14. An expression tree is generated for the following expression $(-a-(b-c))/(-x^{*}(a+c))$. The operator placed as left chid of root is _____.

15. The minimal FSA accepting the set of all strings of binary numbers that is divisible by 3 has _____ states.

16. The output of LEX compiler is _____.

17. Minimum number of 2 input NAND gates required to implement the expression $(AB'+A'B)(CD+C'D')$ is _____.

18. The merge sort algorithm has a worst case time complexity of _____.

19. The OSI layer deals with the physical address of a device is _____.

20. In a Class B network, how many number of subnets can have with the subnet mask as 255.255.248.0

21. The number of channels needed for a mesh network with one coordinator and 7 end devices is _____.

22. In a time sharing operating system, when the time slot given to a process is completed, it goes to _____ state.

23. What is the size of instruction queue in 8086?

24. The system program that combines one or more object files into single executable file is _____.

25. The graphical representation of the "flow" of data through an information system is _____.

C. Write the full form of the following Acronyms :

26. SDRAM.

27. GPRS.

28. BCNF.

29. MIME.

30. IMAP.

(30 × 4 =120)

PART II

(Each question carries 10 marks)

D. Answer the following Questions :

31. Different class of network addressing in IP V4.

32. Readers-writers problem.

33. Basic COCOMO model.

34. Quick Sort Algorithm.

35. Cloud Computing.

36. Algorithm to insert an element in a circular Linked list.

37. Booth's Multiplication Algorithm.

38. Multivalued dependency.

$(8 \times 10 = 80)$
