1. Which of the following is a universal gate?
   A. AND  B. NOT  C. NAND  D. OR

2. Binary equivalent of the decimal number 25 is _______
   A. 11001  B. 10011  C. 1001  D. None of these

3. Find the odd one
   A. Keyboard  B. Mouse  C. Scanner  D. Printer

4. Which of the following is an Impact printer?
   A. Dotmatrix printer  B. Laser printer  C. Inkjet printer  D. None of these

5. Flash memory is a type of _______ chip
   A. ROM  B. PROM  C. EEPROM  D. EPROM

6. The software used to translate assembly language program into a machine language program is called
   A. Assembler  B. Compiler  C. Interpreter  D. Linker

7. Which of the following is a multiuser operating system?
   A. MS DOS  B. PC DOS  C. Linux  D. None of these

8. Fragmentation problem can be reduced by _______
   A. Page fault  B. Compaction  C. Thrashing  D. Switching

9. FIFO scheduling is _______
   A. Preemptive  B. deadlock  C. Non preemptive  D. None of these

10. The delay between the job submission and job completion is _______
    A. Turn around time  B. Waiting time  C. Scheduling time  D. None of these

11. The high speed memory placed between CPU and main memory is called _______

12. Special storage locations inside the CPU are called _______

13. _______ is a unidirectional bus

14. The power supply unit of a personal computer is _______

15. The device used to convert digital signals to analog signals and vice versa is called _______

16. An instance of a program in execution is called _______

17. POST stands for _______

18. _______ is a software which acts as an interface between user and hardware

19. _______ is used for deadlock prevention

20. _______ occurs when two processes wait for the same resource.
PART B
(Answer any **EIGHT** questions. Each question carries 5 marks)

21. Differentiate between RAM and ROM
22. Explain how data are stored on a hard disk
23. Write the specification of a present day desktop computer.
24. What is a port? What are the different types of ports?
25. What is an instruction cycle?
26. Explain virtual memory
27. Explain basic file operation
28. Explain preemptive and non-preemptive scheduling
29. Compare real time and multiuser operating system
30. Explain SPOOLing and Buffering

PART C
(Answer any **FOUR** questions. Each question carries 10 marks)

31. Compare Windows and Linux operating system
32. Briefly explain the life cycle of a process
33. Explain dedicated, shared and virtual devices.
34. Briefly explain the different parts of the CPU
35. Write short notes on
   a) Bio-metric access control devices
   b) Motherboard
   c) Optical storage devices
   d) Addressing modes
Choose the correct answer.

1. C language is available for which of the following Operating Systems?
   a) DOS    b) Windows   c) Unix    d) All of these

2. Which of the following symbol is used to denote a pre-processor statement?
   a) !      b) #       c) ~       d) ;

3. Which of the following are tokens in C?
   a) Keywords   b) Variables   c) Constants   d) All of the above

4. What is the valid range of numbers for int type of data?
   a) 0 to 256    b) -32768 to +32767    c) -65536 to +65536   d) No specific range

5. Which escape character can be used to beep from speaker in C?
   a) \a   b) \b   c) \m   d) \n
6. Which of the following is an example of compounded assignment statement?
   a) a = 5    b) a += 5    c) a = b = c    d) a = b

7. The bitwise AND operator is used for
   a) Masking   b) Comparison   c) Division   d) Shifting bits

8. Which operator has the highest priority?
   a) ++    b) %   c) +   d) ||

9. Maximum number of elements in the array declaration int a[5][8] is
   a) 28    b) 32    c) 35    d) 40

10. Array subscripts in C always start at
    a) -1    b) 1    c) 0   d) Value provided by user

Fill in the blanks

11. The output of the expression 11 ^ 5 ---------------

12. An Ampersand before the name of a variable denotes ---------------

13. --------------- header file is essential for using strcmp() function?

14. The operator << is called ---------------

15. In C++ a function contained within a class is called ---------------

16. Symbolic constants can be defined using ---------------

17. Null character is represented by ---------------

18. --------------- operator in C is called a ternary operator

19. Array subscripts in C always start at ---------------

20. When a language has the capability to produce new data type, it is called-----------------.
PART B

(Answer any eight questions. Each question carries five marks)

21. Explain briefly about the steps in program development.
22. Explain compiling, linking and executing a program.
23. Explain the different types of constants in C.
24. Explain bitwise operators in C.
25. Explain nested if statement with example.
26. What are the different loops available in C. Explain with example.
27. What is an array in C. Explain how arrays can be used for storing and manipulating multiple values.
28. What is a string. Explain how character array can be used for manipulating string.
29. What is formal arguments and actual arguments in a C function. Explain with example.
30. Compare structure, union and enumerated data types.

PART C

(Answer any four. Each question carries 10 marks)

31. a) Draw a flowchart to find the largest element from a set of n elements. (5)
    b) Write a program to generate prime numbers below 100. (5)
32. Write a program using a recursive function to find the sum of digits of a no. (10)
33. Write a program using dynamic memory allocation method to allocate n elements in memory and sort elements in ascending order. (10)
34. Write a program to create a text file and display the contents. (10)
35. Explain the features of object oriented programming. (10)
36. Write short notes on the following.
    a) Inheritance         b) command line arguments (10)

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PGDCA 103 SOFTWARE ENGINEERING & DATABASE MANAGEMENT SYSTEMS

Part A
(Answer all questions. Each carries 1 mark.)

Choose the correct answer.

1. _______ data independence insulates user from making changes to internal level.
   a) physical       b) logical   c) internal     d) external

2. In SQL _______ command is used to confirm transaction.
   a) alter table   b) commit     c) rollback    d) update

3. A schema is written using _______ language.
   a) DDL       b) DML       c) QBE      d) SQUARE

4. Which of the following is not a group function.
   a) max     b) sum       c) round    d) avg

5. _______ symbol in an ER Diagram to represent relationship sets.
   a) rectangle   b) circle    c) diamond   d) arrow

6. The number of tuples in a relation is called _______.
   a) degree    b) cardinality  c) attribute   d) domain

7. _______ is table of contingencies for defining a problem and the action to be taken.
   a) DFD     b) decision table  c) structure chart d) FAT

8. _______ feasibility centres around the existing system hardware, software etc.
   a) technical  b) behavioral  c) economical  d) all of these

9. _______ structured repository of data about data.
   a) view    b) table       c) data dictionary d) data flow diagram

10. _______ is a technique used for generating new ideas and obtaining general information requirements.
    a) prototyping   b) questionnaire  c) brainstorming  d) none of these

Fill in the blanks.

11. The view is a _______ table.

12. The record type at the top of the tree structure is _______.

13. If the records in a file are physically ordered on a non-key field, that field is called _______.

14. UML stands for _______.

15. _______ implies that goals are achieved through differing courses of action and a variety of paths.

State whether True or False.

16. An open system receives inputs from and delivers outputs to the outside world.

17. Structured English is best for logic verifications.

18. A relation can have more than one candidate key.

19. A dense index saves storage space.

20. An application form is an example for action form.
Part B

Answer any 8 questions. Each carries 5 marks.

21. What do you mean by feasibility study?
22. Briefly describe an activity diagram.
23. Describe the different categories of database users.
24. Explain the skills of a system analyst.
25. What are the rules to draw a DFD?
26. Discuss the recovery techniques in databases.
27. Distinguish between open system and closed system.
28. Discuss briefly cost/benefit analysis.
29. Briefly discuss the process of normalization.
30. What are the different types of locks available in databases.

Part C

Answer any 4 questions. Each carries 10 marks.

31. a) Briefly explain the characteristics of a system. (5)
    b) What is a system model? (5)
32. Explain the various criteria for software selection. (10)
33. Discuss various mapping cardinalities in databases. (10)
34. a) What is meant by hashing? (5)
    b) What are the different types of keys in relational model. (5)
35. Explain different information gathering tools. (10)
36. Write short notes on
   a) feasibility analysis
   b) DML

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