



Reg.No.:

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**COMMON QUARTERLY EXAMINATION - 2023****Std - XI****D. KARTHIC PG ASSISTANT**

Time : 3.00 Hours

**COMPUTER SCIENCE**

Marks: 70

I. Choose the best answer:

15 x 1 = 15

1. Expand POST
    - a) Post Of Self Test
    - b) Power On Software Test
    - c) Power On Self Test
    - d) Power On Self Text
  2. Which generation of computer used IC's?
    - a) First
    - b) second
    - c) Third
    - d) fourth
  3. How many bytes does 1 kilobyte contain?
    - a) 1000
    - b) 8
    - c) 4
    - d) 1024
  4.  $\overline{A+B} = ?$ 
    - a)  $\overline{A} + \overline{B}$
    - b)  $\overline{A \cdot B}$
    - c)  $A + (\overline{A \cdot B})$
    - d)  $A \cdot (A+B)$
  5. Which of the following is said to be the brain of a computer?
    - a) Input devices
    - b) output devices
    - c) memory device
    - d) microprocessor
  6. Mention the magnetic disk
    - a) Compact Disk
    - b) Digital versatile Disc
    - c) Hard Disks
    - d) Blu-Ray Disc
  7. Interactive operating system provides
    - a) Graphics user Interface (GUI)
    - b) Data Distribution
    - c) Security Management
    - d) Real Time Processing
  8. Operating system is a
    - a) Application software
    - b) Hardware
    - c) System software
    - d) component
  9. The shortcut key used to rename a file in windows
    - a) F2
    - b) F4
    - c) F5
    - d) F6
  10. Low power mode that retains all running programs - what?
    - a) switch user
    - b) sleep
    - c) restart
    - d) log off
  11. Stating the input property and the input-output relation a problem is known as
    - a) specification
    - b) statement
    - c) algorithm
    - d) definition
  12. if  $0 < i$  before the assignment  $i:=i-1$  after the assignment, we can conclude that
    - a)  $0 < i$
    - b)  $0 \leq i$
    - c)  $i = 0$
    - d)  $0 \geq i$
  13. Mention the notations for expressing algorithms.
    - a) programming language
    - b) pseudo code
    - c) flowchart
    - d) all of the above
  14. .... is an abstraction of a problem and specified by its input property.
    - a) function
    - b) refinement
    - c) psedocode
    - d) flowchart
  15. If  $m \times a + n \times b$  is an invariant for the assignment  $a, b := a + 8, b + 7$ , the
    - a)  $m = 8, n = 7$
    - b)  $m = 7, n = - 8$
    - c)  $m = 7, n = 8$
    - d)  $m = 8, n = - 7$
- II. Answer any six Questions. Q.No. 21 is compulsory: 6 x 2 = 12
16. What is the function of memory?
  17. Convert  $(65)_{10}$  into Binary number.
  18. What is an instruction?
  19. List out any two uses of memory management?
  20. Differentiate save and save as option.



21. Define an algorithm.
22. How do we refine a statement?
23. What is an invariant?
24. Draw the truth table for XOR gate.

**III. Answer any six questions. Q.No. 28 Is Compulsory:**

6 x 3 = 18

25. Write the characteristics of sixth generation.
26. Add a)  $-22_{10} + 15_{10}$       b)  $20_{10} + 25_{10}$
27. Reason out why the NAND and NOR are called universal gates.
28. Differentiate PROM and EPROM.
29. List out the key features of operating system.
30. Write a note on Recycle bin.
31. What is abstraction?
32. What is case analysis?
33. There are 7 tumblers on a table, all standing upside down. You are allowed to turn any 2 tumblers simultaneously in one move. Is it possible to reach a situation when all the tumblers are right side up? (Hint: The parity of the number of upside down tumblers is invariant)

**IV. Answer all the questions in detail:**

5 x 5 = 25

34. a) Differentiate impact and non impact printers. (OR)  
b) Find 1's complement and 2's complement for the following decimal number.  
i) -98 ii) -135
35. a) Explain the fundamental gates with expression and truth table. (OR)  
b) Explain about booting of computer? (OR)
36. a) Explain the characteristics of a microprocessor? (OR)  
b) List out the points to be noted while creating a user interface for an operating system?
37. a) Explain the different ways of finding a file (or) folder? (OR)  
b) Suppose you want to solve the quadratic equation  $ax^2 + bx + c = 0$  an algorithm  
quadratic - solve (a, b, c)  
.... inputs : ?  
.... outputs:?  
You intend to use the formula and you are prepared to handle only real number roots.  
Write a suitable specification.

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

38. a) Power can also be defined recursively as

$$a^n = \begin{cases} 1 & \text{if } n = 0 \\ a \times a^{n-1} & \text{if } n \text{ is odd} \\ a^{n/2} \times a^{n/2} & \text{if } n \text{ is even} \end{cases}$$

Construct a recursive algorithm using the definition. How many multiplications are needed to calculate  $a^{10}$ ? (OR)

- b) Explain the types of ROM.