 

# 2022-25

*Full Marks : 60*

*Time : 3 Hours*

*Candidates are required to give their answer in their own words as far as practicable. Their figures in the margin indicate full marks.*

## Group – A
## (Compulsory)

**1.** Choose the **correct** answer for the following : 1×10=10

(i) A decimal counter has ..... states.

(a) 5 (b) 10

(c) 15 (d) 20

(ii) The primary memory (also called main memory) of a personal computer consists of :

(a) RAM only

(b) ROM only

(c) Both RAM and ROM

(d) Cache memory

(iii) Cache memory acts between :

(a) CPU and RAM

(b) RAM and ROM

(c) ROM and Hard Disk

(d) None

(iv) Von Neumann architecture is .....

(a) SISD

(b) SIMD

(c) MIMD

(d) MISD

(v) Which of the following Logical operations is represented by the + sign in Boolean algebra ?

(a) AND

(b) OR

(c) NOT

(d) None

(vi) Which of the following is **not** a pointing device ?

(a) Mouse

(b) Joystick

(c) Light Pen

(d) Digitizer

(vii) Which of the following is **not** an output device ?

(a) Monitor

(b) Printer

(c) Headphone

(d) Scanner

(viii) How many select lines would be required for an 8-Line -to -1-line multiplexer ?

(a) 2 (b) 4

(c) 8 (d) 3

(ix) The CISC stands for :

(a) Computer Instruction Set Compliment

(b) Complete Instruction Set Compliment

(c) Computer Indexed Set Components

(d) Complex Instruction Set Computer

(x) A decoder converts n inputs to ..... outputs.

(a) n (b) $n^2$

(c) $2^n$ (d) $n^n$

**2.** What is difference between RAM and ROM ? 5

## Group - B

Answer any **three** questions of the following : 15×3=45

**3.** Convert the following numbers :

(a) $(234)_{10} = (\ )_{16}$

(b) $(1001110)_2 = (\ )_{16}$

(c) $(254)_8 = (\ )_2$

(d) $(BCD)_{16} = (\ )_{10}$

(e) Find 2's complement of $(101110011)_2$

**4.** (a) Simplify by using the Karnaugh map.

$F(a, b, c, d) = \Sigma\ (0, 1, 4, 5, 7, 8, 11, 14. 15)$

(b) Explain J Flip- Flop with a truth table and diagram.

**5.** (a) What is difference between RISC and CISC ?

(b) Explain instruction set and addressing modes of 8086 architecture ?

**6.** Explain Cache memory and Associative memory in a computer system ?

**7.** Write short notes on :

(a) Direct Memory Access

(b) Interrupt-Driven I/O

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