

Seat No. : _____

NH-104

November-2023

BCA, Sem.-III

**CC-201 : Computer Organization and Advanced Micro-Processors
(Old)**

Time : 2½ Hours]

[Max. Marks : 70

1. (A) What is Flip-flop ? List all flip-flops and explain any two in detail. 7
1. (B) Draw and explain 4×1 line multiplexer in detail. 7

OR

1. (A) Draw the block diagram of digital computer and explain its working in detail. 7
1. (B) Draw and explain the working of an 8×3 line Encoder. 7
2. (A) Explain 1's and 2's complements in binary system with suitable examples. 7
2. (B) Draw a 4 bit adder circuit and explain its working with an example. 7

OR

2. (A) Solve : (i) $(59)_{10} = (\quad)_2$ (ii) $(C4A)_{16} = (\quad)_8$ 7
2. (B) List the types of shift micro-operations and explain with an example. 7
3. (A) Explain various phases of an Instruction cycle in detail. 7
3. (B) Explain the format of Memory-Reference Instruction in detail. 7

OR

3. (A) Draw and explain the use of all registers of 8086 Basic Computer. 7
3. (B) What is Direct and Indirect addressing mode of an instruction ? Explain in detail. 7
4. (A) List Peripheral devices used in Digital Computer and explain them in brief. 7
4. (B) Explain Direct mapping scheme of cache memory with its benefits and limitations. 7

OR

4. (A) Draw and explain the design of Daisy Chain priority interrupt. 7
4. (B) Write a note on Associative memory. 7

5. MCQs : (Any 7 × 2 marks each)

- (i) _____ performs addition of 2 bits.
 - (A) 4 bit Incrementer
 - (B) Half Adder
 - (C) Register
 - (D) AC
- (ii) Which flip-flop gives 0 as an output when both input bits are 1 ?
 - (A) SR
 - (B) JK
 - (C) D
 - (D) T
- (iii) Multiplexer is _____ device.
 - (A) one to one
 - (B) one to many
 - (C) many to one
 - (D) None of the above
- (iv) In a fixed point representation, a binary point assumed at a left of a register indicates the value is _____.
 - (A) fraction
 - (B) integer
 - (C) precision
 - (D) exponent
- (v) $(8A)_{16} = (\text{_____})_2$
 - (A) 11101111
 - (B) 10101000
 - (C) 11111110
 - (D) 10001010
- (vi) Binary Incrementer increases the bit value by _____.
 - (A) 0
 - (B) 1
 - (C) 2
 - (D) 10
- (vii) AC Register is known as _____.
 - (A) Accumulator
 - (B) Accomodator
 - (C) Adder-Complementer
 - (D) None of the above
- (viii) Instruction starting with _____ code is Register Reference Instruction.
 - (A) 7
 - (B) 8
 - (C) 9
 - (D) F
- (ix) _____ instruction is used for accessing stack type of memory.
 - (A) PUSH
 - (B) POP
 - (C) Both (A) and (B)
 - (D) None of the above
- (x) Pen drive is an example of _____ device.
 - (A) Input
 - (B) Output
 - (C) Recording
 - (D) Input-Output
- (xi) Input-Output interface uses _____ bus.
 - (A) Data
 - (B) Address
 - (C) Control
 - (D) All of the above
- (xii) RAM chip uses _____ access method for addresses.
 - (A) Random
 - (B) Sequential
 - (C) Serial
 - (D) Binary