

E-3918

B. C. A. (Part - III) EXAMINATION : 2021

(New Course)

Paper Sixth

Computer System Architecture

(306)

Time : Three Hours]

[Maximum Marks : 80

Note :-All questions are compulsory. Attempt **any two** questions from each unit. All questions carry equal marks.

UNIT -1

Q.1. Convert following number system as directed- (any four)

1. $(128)_{10} = (?)_8$
2. $(1101)_2 = (?)_{10}$
3. $(22)_8 = (?)_{10}$
4. $(121)_{16} = (?)_2$
5. $(214)_8 = (?)_2$

Q.2. What are error detecting and correcting codes? How can we detect error by parity code.

Q.3. What are basic Binary Arithmetic operations? Explain them briefly.

UNIT -2

Q.1. Write short note on following- (any four)

1. OR Gate
2. NAND Gate
3. XOR Gate
4. NOT Gate
5. AND Gate

Q.2. Briefly describe various laws of Boolean algebra.

Q.3. What is Flip-Flop? Explain J-K Flip-Flop, D Flip-Flop and S-R Flip-Flop with truth table and logic diagram.

UNIT -3

Q.1. Write short note on following- (any four)

1. ALU
2. CPU Organization
3. Registers
4. RAM
5. Cache Memory

UNIT -4

Q.1. Write short note on following- (any four)

1. Peripheral device
2. Interfaces
3. I/O Subsystem
4. I/O Controller
5. Memory Mapped I/O

Q.2. Explain various modes of I/O Data Transfer.

Q.3. What is I/O Processor? Explain with block diagram.

UNIT -5

Q.1. Write short note on following- (any four)

1. Associative Memory
2. Hit Ratio
3. Memory Mapping
4. Replacement Algorithms
5. Page Table

Q.2. Explain memory organization in computer architecture? Draw memory Hierarchy diagram.

Q.3. Explain the concept of Virtual memory.
