

S.No. : 121

BIT 3404

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 33707

Roll
No.

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B. Tech. Examination 2021-22

(Even Semester)

**COMPUTER ORGANIZATION &
ARCHITECTURE**

Time : Three Hours]

[Maximum Marks : 60

Note :- Attempt all questions.

SECTION – A

1. Attempt all parts of the following : 1 × 8 = 8
- (a) Define program counter.
 - (b) What is handshaking signal?
 - (c) Define interrupt.
 - (d) Define auto increment addressing mode.
 - (e) Write the functions of Bus.
 - (f) What is microinstruction?

[P. T. O.

- (g) What is function of flage?
- (h) Differentiate between synchronous and asynchronous data transfer.

SECTION –B

2. Attempt any two parts of the following : $2 \times 6 = 12$

- (a) What do you mean by computer architecture? How computer architecture is different from computer organisation?
- (b) Explain two and $2 \frac{1}{2}$ D memory organisation.
- (c) What do you mean by asynchronous data transfer? Explain stroke control and handshaking mechanism.
- (d) Evaluate the arithmetic statement

$$X = (A+B) (C+D)$$

using general register computer with three address, two address and one address instruction format.

SECTION –C

Note:- Attempt any two parts from each question. Each question carries equal marks. $8 \times 5 = 40$

3. (a) What is peripheral device? Give example of peripheral devices.
- (b) Briefly discuss Von Neumann Architecture.
- (c) A computer uses memory unit with 256K words of 32 bits each. A binary instruction code is stored in one word of memory. The instruction has four parts an indirect bit, an operation code, a register code part to specify one of 64 registers and an address part
- (i) How many bits are there in operation code the register code part and address part?
- (ii) How many bits are there in data and address inputs of the memory?
4. (a) Define Bus arbitration. Discuss various types of Bus arbitration approaches.
- (b) Perform following booth multiplication 6 bit operation $\rightarrow (-8 \times 5)$
- (c) Describe hardwired control. Compare and contrast hardwired approach to micro programmed control.

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5. (a) What is pipeline control? How is the performance of pipeline measured?
- (b) Explain arithmetic, logical and shift micro operations.
- (c) Discuss stack organisation.
6. (a) Explain function of direct memory access. How DMA is different from programmed I/O?
- (b) Discuss memory organisation. Compare various levels on basis of cost and size.
- (c) Define RISC. Compare and contrast RISC and CISC.
