

S.No. : 202

BCS 3404

No. of Printed Pages : 04

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

PAPER ID : 33218

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 : 8×1=8
- (a) What do you mean by register?
 - (b) How many types of buses are there?
 - (c) Explain two logical micro operations.
 - (d) What is meant by instruction?
 - (e) What is synchronous communication?
 - (f) What is an I/O interface?

[P. T. O.

- (g) What is cache memory?
- (h) Define memory access time.

SECTION – B

2. Attempt any two parts of the following : $2 \times 6 = 12$
- (a) Draw the flow chart and explain about booth's algorithm. Multiply 100111 with 11011 using booth's algorithm.
 - (b) What is the difference between a hardwired control design and a microprogrammed control design?
 - (c) What do you mean by interrupts? Explain different types of interrupts.
 - (d) What do you mean by memory hierarchy? Why such hierarchy is required? Draw a suitable memory hierarchy block diagram with the parameters you have considered.

SECTION – C

Note :- Attempt all questions. Attempt any two parts from each questions. $5 \times 8 = 40$

3. (a) Explain briefly the Von-Neumann architecture.

- (b) Illustrate the register transfer mechanism for $P : R2 \leftarrow R1$ with necessary diagram.
 - (c) Define briefly the bus arbitration technique.
- 4.
- (a) What do you mean by microinstruction sequencing?
 - (b) What is instruction pipelines? Also explain the performance of pipeline.
 - (c) Define the following :
 - (i) Micro instruction
 - (ii) Micro-program
- 5.
- (a) Write short notes on programmed I/O and interrupt initiated I/O.
 - (b) What is the difference between I/O interface and I/O port.
 - (c) With a neat schematic, explain about DMA controller and its mode of data transfer.
- 6.
- (a) Write about auxiliary memory devices.
 - (b) Explain the mechanism involved in magnetic disk and magnetic tapes.

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- (c) Illustrate the mapping process involved in transformation of data from main memory to cache memory.

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