

[July-22]

GITAM (Deemed to be University)

[CSEN 2011]

B.Tech. Degree Examination

(Elective)

II Semester

COMPUTER ORGANIZATION & ARCHITECTURE

(Effective from the admitted batch 2021–22)

Time: 2 Hours

Max.Marks: 30

Instructions: All parts of the unit must be answered in one place only.
Figures in the right hand margin indicate marks allotted.

SECTION-A

1. **Answer All the Questions:** (5×1=5)

- a) What is the function of Program Counter? What is the initial value stored in PC?
- b) Draw the block diagram of Control Logic associated with AC (Accumulator) and explain in one or two sentence.
- c) Convert the infix expression $(A*B)*(C*(D+E)-F)$ to Reverse Polish Notation.
- d) List the function of Input-output interface circuits.
- e) Define Memory Hierarchy in a computer system with a neat diagram.

SECTION-B

Answer the following: (5×5=25)

UNIT-I

2. Draw the functional block diagram of Binary 4-bit Adder-Subtractor.

OR

3. With suitable example, explain the selective set and selective clear operation.

UNIT-II

4. Differentiate Direct and Indirect addressing modes with suitable example for each.

OR

5. What is Data transfer instruction? Explain any 5 data transfer instructions using suitable example.

UNIT-III

6. Write the Micro-operations for the PUSH and POP operations of Register Stack organization.

OR

7. Discuss the pipeline for floating-point addition and subtraction.

UNIT-IV

8. Draw the block diagram and waveform to explain the source initiated strobe control for the data transfer.

OR

9. With a neat block diagram explain the Asynchronous communication interface.

UNIT-V

10. Explain the address translation in Direct Mapped Cache with an example.

OR

11. With an example explain mapping from logical memory to physical memory.

[1,2,4,5,8,10/II S/122]