[Nov - 24]

GITAM (Deemed to be University)

GST/GSS/GSB/GSHSS Degree Examination

V Semester

CSEN2011 : COMPUTER ORGANIZATION AND ARCHITECTURE

Time: 2 Hours **Max. Marks: 30**

Instruction: All parts of the unit must be answered in one place only.

Section - A

1. Answer all questions **(5x1=05)**

a. Give examples of logical micro-operations using RTL.

b. What is effective address?

c. Explain the term "speedup" in parallel processing.

d. What is a priority interrupt?

e. Explain the difference between volatile and non-volatile memory

Section - B

Answer the following **(5x5=25)**

UNIT - I

2. Explain how an ALU performs an addition operation using binary numbers

OR

3. A computer has a common bus system for 4 registers of 8 bits each. It is implemented using the multiplexer.
a). How many multiplexers are there in the bus?
b). Draw the structure of the bus system.

UNIT - II

4. Draw the diagram for input-output Configuration.

OR

5. Describe the design of a basic computer, highlighting the major components and their roles.

UNIT - III

6. Compare the relative addressing mode with the indexed addressing mode using an example.

OR

7. Describe the concept of stack organization in CPU architecture and how it supports function calls and returns.

UNIT - IV

8. Describe the role of the DMA controller and how it interacts with the CPU and memory.

OR

9. Explain the different types of input-output processors used in modern computer systems? Discuss their features, architecture, and specific applications.

UNIT - V

10. Explain the advantages and disadvantages of using virtual memory.

OR

11. Explain the direct mapping technique used in the organization of a cache memory.