

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (AI&DS/AI&ML/CS/DS/CSE/Internet of Things and Cyber Security including Block Chain Technology) (Sem.-4)

COMPUTER ORGANIZATION AND ARCHITECTURE

Subject Code : BTES-401-18

M.Code : 77627

Date of Examination : 17-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Write briefly :

- a) Define Computer architecture.
- b) What is Control Unit?
- c) Differentiate between Logical and Physical addresses.
- d) What is instruction-level parallelism?
- e) What are the disadvantages of increasing the number of stages in pipeline processing?
- f) Define and explain memory hierarchy.
- g) Write use of software interrupts.
- h) Write functioning of USB.
- i) Differentiate between Arithmetic Shift Left and Arithmetic Shift Right.
- j) Why does increasing the capacity of cache tend to increase its hit rate?

SECTION - B

2. Explain different addressing modes used in central processing unit.
3. How is Virtual Memory different from Cache memory?
4. What are the advantages and disadvantages of hardwired and micro-programmed design approaches?
5. Explain the working of carry look ahead adder.
6. Formulate a six-segment instruction pipeline for a computer. Specify the operations to be performed in each pipeline.

SECTION - C

7. Briefly explain the block diagram and instruction set of 8085 processor. How 8085 is different from 8086?
8. What is the need of replacement algorithms in memory organization? Explain with example.
9. Discuss the role of pipelining for data processing in computer organization. How it increases the throughput?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.