

Enrolment No:-----

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Odd Semester Examination 2024

Subject Name: Computer Architecture
Subject Code: BTECE 502/ BTECE 502 Lateral

Time: 2Hours 30 minutes
Maximum Marks: 60

Section A (Attempt all questions: 4 x 5 marks = 20 Marks)

Q.No	Questions	Marks	CO	BL
Q1.	Draw the block diagram of one stage ALU circuit and explain its working operation with truth table.	5	CO3	BL3
Q2.	What is signed and unsigned number explain with example. Simplify the decimal number $37 + 25$ in binary form	5	CO1	BL2
Q3.	What is interrupt? Differentiate between external interrupt and internal interrupt with example.	5	CO2	BL5
Q4.	Explain with block diagram the concept of memory hierarchy.	5	CO4	BL1

Section B (Attempt any four questions: 10 x 4marks = 40 Marks)

Q.No	Questions	Marks	CO	BL
Q1.	Explain different types of ALU with their block diagram and what is the role of ALU in processor.	10	CO3	BL3
Q2.	The memory unit of a computer has 256K words of 32 bits each. The computer has an instruction format with four fields:- (1) An operation code (2) A mode field to specify one of the seven Addressing modes (3) A Register address field to specify one of 60 processor register (4) One memory address. Specify the instruction format and the number of bits in each fields if the instruction is in one memory word.	10	CO1	BL1
Q3.	What is mapping. Discuss in details about different types of mapping techniques.	10	CO4	BL5
Q4.	What is assembly language? Write the function of different components of assembly language, its advantages and disadvantages.	10	CO1	BL1
Q5.	What is the role of control unit in processing unit? Discuss in detail with block diagram about hardwired and micro programmed control unit.	10	CO2	BL3
Q6.	Write short notes on any two: (1) DMA (2) Virtual memory (3) Sub routines (4) Instruction format	10	CO1, CO4, CO5	BL2