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MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY

NH-58, Delhi-Roorkee Highway, Baghpat Road, Meerut – 250 005 U.P.

Second Sessional Examination: Odd Semester 2022-23

Course/Branch	: B Tech – CSE and Allied Branches	Semester	: III
Subject Name	: Computer Architecture and Organization	Max. Marks	: 60
Subject Code	: KCS302	Time	: 120 min

1. *CO-2* : To Apply the basic logic for arithmetic & logic unit design and summarize the floating & fixed points arithmetic operations. (K2, K3)
2. *CO-3* : To understand the control unit techniques & microprogramming controls and compute different pipeline techniques. (K2, K3)
3. *CO-4* : To Understand the hierarchical memory systems and correlate the cache and virtual memory. (K2, K4)

Section – A (CO - 3) # Attempt both the questions # 30 Marks

Q.1: Attempt any **SIX** questions (Short Answer Type). Each question is of two marks. (2 x 6 = 12 Marks)

Q. No.	Question	Level of Taxonomy	Course Outcome
A	Interpret the different cycles of an instruction execution.	K3	CO3
B	Illustrate the steps in fetching a word from memory.	K2	CO3
C	How pipelining is classified?	K2	CO3
D	What do you mean by sequencer? Draw its block diagram only.	K2	CO3
E	Differentiate between RISC and CISC? Explain its various characteristics.	K2	CO3
F	Discuss Micro-operation and Control memory.	K2	CO3
G	Define interrupt service routine.	K2	CO3

Q.2: Attempt any **THREE** questions (Medium Answer Type). Each question is of 6 marks. (3 x 6 = 18 Marks)

Q. No.	Question	Level of Taxonomy	Course Outcome
A	Determine the concept of vertical and horizontal multi-programming.	K3	CO3
B	Discuss hardwired and micro programmed control units. Also lists their advantages and disadvantages.	K3	CO3
C	Execute instruction pipelining with the help of suitable example.	K3	CO3
D	Determine the different categories of micro-operations that may be carried out by CPU? Explain each category of micro-operations giving one example	K3	CO3
E	Interpret the meaning of Program Control? Also explain its flow chart.	Creative level	CO3

Section – B (CO4,CO2) # Attempt both the questions # 30 Marks

Q.3: Attempt any **SIX** questions (Short Answer Type). Each question is of two marks. (2 x 6 = 12 Marks)

Q. No.	Question	Level of Taxonomy	Course Outcome
A	Define hit ratio.	K2	CO4
B	Explain SRAM and DRAM.	K2	CO4
C	what do you understand by locality of reference.	K2	CO4
D	What are the different types of ROM available?	K2	CO4
E	Define Cache memory and how a block is transferred from main memory to cache memory.	K2	CO4
F	Draw and explain the pin configuration of RAM chip.	K2	CO4
G	A computer uses RAM chip of 1024x1 capacities. How many chips are needed to provide a memory capacity of 1024x8?	K3	CO4

Q.4: Attempt any **THREE** questions (Medium Answer Type). Each question is of 6 marks. (3 x 6 = 18 Marks)

Q. No.	Question	Level of Taxonomy	Course Outcome
A	Distinguish Cache Read operation in detail along with labeled Diagram.	K2	CO4
B	Classify the Memory Hierarchy with neat Diagram?	K2	CO4
C	Distinguish the main memory and classify it?	K2	CO4
D	Represent $-(1460.125)_{10}$ in single precision and double precision formats.	K3	CO2
E	Draw the flow chart for restoring and non-restoring division operation of two numbers for unsigned integer? And perform the division process of 00001111 by 0011	Creative level	CO2