SET1
PART A:

Unit1

a) What is computer architecture? 1m 1a
b) What is ALU? 1m 1c
c) Name the list of microoperations 1m 1e
d) Define Register. 1m 1d

Unit2

e) Define microprogrammed control unit 1m 1a
f) Name any five addressing modes 1m 1c
g) Write the relation between the number of processor registers and the address bits required to address each register 1m 1e
h) Name the three types of CPU Organizations 1m 1b

Unit3:

i) Classify the data types in digital computers 1m 1a
j) What are the different number systems 1m 1b

PART B:

Unit1:

2a. Differentiate Computer organization and architecture.
2b. Draw the block diagram of digital computer and explain its components.

Or

3a. Draw Arithmetic Logic Shift Unit 3m 2e
3b. Explain logical shift microoperations. 5m 3b

Unit2:

4a. Explain the following instructions. i. PUSH, ii. POP, iii. CMP 3m 2a
4b. List and explain the unsigned CMP Program Control Instructions. 5m 3a

Or

5a. For the operation X = (A + B) x (C + D) , write
i. Three address instruction code,
ii. Zero Address Instruction code and
5b. Explain with a neat diagram, how the status bits are affected during a ALU operation

Unit3:

6a. Using 2's complement method solve the following
i. -75 +26
ii. 46 - 14

Or

7a. Explain (r-1) complement in decimal and binary number systems

SET2

Part A

Unit1:

a. What is ALU? 1m 1c
b. Define Computer Organization. 1m 1b
c. Define Register. 1m 1d
d. Name the list of microoperations 1m 1e

Unit2:

e. Name any five addressing modes 1m 1c
f. Write the relation between the number of processor registers and the address bits required to address each register 1m 1e
g. Which status bits are affected after execution of COMPARE Instruction 1m 1d
h. Explain the PUSH instruction 3m 2ai

Unit3:

i. Represent +6132.789 as a floating-point number 1m 1c
j. What are the different number systems 1m 1b

Part B:

Unit 1:

2a. Give any 3 applications of logic microoperations 3m 2b
2b. With the help of block diagram, explain the input-output instructions 10m 4c

Or

3a. Draw the hardware implementation of 4-bit shift operation
3b. Explain in detail about the Memory Transfer

Unit2:

4a. List and explain the signed CMP Program Control Instructions. 5m 3a
4b. Explain the following instructions: i. BR and ii. JMP gpt

Or

5a. For the operation X = (A + B) x (C + D) , write
i. Zero Address Instruction code and
ii. RISC Instruction set
Where, A, B, C, D, X are memory locations
5b. Explain the mapping of instructions

Unit3:

6a. Using 2's complement method solve the following
i. -75 +26
ii. – 6 – 13

Or

7a. Find the 1's and 2's complement of the following eight-digit binary number
i. 10101010
ii. 10111001

Set 3

Part A

Unit1:

a. What is computer architecture? 1m 1a
b. What is ALU? 1m 1c
c. Name the list of microoperations 1m 1e
d. Define Computer Organization 1m 1b

Unit2:

e. Define microprogrammed control unit 1m 1a
f. Name the three types of CPU Organizations 1m 1b
g. Which status bits are affected after execution of COMPARE Instruction 1m 1d
h. Write the relation between the number of processor registers and the address bits required to address each register 1m 1e

Unit3:

i. Classify the data types in digital computers 1m 1a
j. Represent +6132.789 as a floating-point number 1m 1c

Part B

Unit1:

2a. Draw the block diagram of digital computer and explain its components.
2b. Differentiate hardwired and micro-programmed control organizations

Or

3a. Draw Arithmetic Logic Shift Unit 3m 2e
3b. Give any 3 applications of logic microoperations 3m 2b

Unit2:

4a. Explain the following instructions
i.PUSH, ii. POP, iii. CMP
4b. Explain with a neat diagram, how the status bits are affected during a ALU operation 5m 3c

Or

5a. Explain the mapping of instructions
5b. Explain address sequencing for control memory

Unit3:

6a. Using 2's complement method solve the following
i. 46 – 14
ii. – 6 – 13

Or

7a. Discuss the different types of representation of signed numbers.