

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

B.Tech-V Semester (ECE/ECE Minor)

COURSE CODE (CREDITS):18B11EC512 (3)

MAX. MARKS: 25

COURSE NAME: Microprocessor and Interfacing

COURSE INSTRUCTORS: Dr. Shweta Pandit

MAX. TIME: 1 Hour 30 Min.

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

	Question	CO	Marks
Q1	a. What condition or conditions will terminate the repeated string instruction REPNE SCASB? b. What is the role of bit masking and its application? Explain the concept of mask creation. Develop a sequence of instructions that clears the rightmost 4 bits of BX; sets the leftmost 3 bits of BX; and inverts the remaining bit positions of BX. c. Analyze the bit-level representation of data and develop an assembly language program that extracts all even-numbered bits (0, 2, 4, ...) from register CX and places them in corresponding bit positions of register DX, ensuring all odd bits of DX are zero. Write proper comments for each instruction used in the program.	2	[1] [3] [3]
Q2	a. Write a set of only logical instruction/s which take a word placed in SP register to make it equal to 050A H, no matter what the starting value in SP was. Write proper comments for each instruction used in the program. b. Develop a sequence of instructions that adds the 8-digit BCD number in CX and BX to the 8-digit BCD number in AX and DX. (AX and CX are the most significant registers. The result must be found in AX and BX after the addition). Write proper comments for each instruction used in the program.	2	[2] [4]
Q3	Select the correct instruction to perform each of the following tasks: (a) shift SI right three places, with zeros moved into the leftmost bit (b) move all bits in AL left one place, making sure that a 0 moves into the rightmost bit position (c) rotate all the bits of BL left three places (d) rotate carry right one place through BX (e) move the DIH register right one place, making sure that the sign of the result is the same as the sign of the original number.	2	[5]
Q4.	Design address decoder circuit for eight 8Kx8 EPROM starting in the address space: 50000H - 5FFFFH. Provide the address range of each of the eight chips connected to microprocessor and 3-to-8 line decoder connections.	3	[7]