

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2024

B.Tech.-V Semester (ECE)

COURSE CODE (CREDITS): 18B11EC512 (3)

MAX. MARKS: 25

COURSE NAME: Microprocessor and Interfacing

COURSE INSTRUCTORS: Dr. Shweta Pandit

MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory.

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

Q.No	Question	CO	Marks
Q1	Given a byte of sensor data at a memory location where least significant 4 bits of sensor data need to be isolated for processing. Devise an assembly language program that reads from memory, applies a bitmask, and processes the isolated bits. Write proper comments in the program.	2	1.5+1
Q2	Write an assembly program to compare two strings of characters using the CMPS instruction where the two 10 byte length strings are stored from memory location 1000:1000 and 2000:2000, respectively. The program should determine if the strings are identical and return the index of the first mismatch if they differ. Write proper comments for the instructions.	2	2+1
Q3	a) Explain the difference between a near jump and a far jump with diagram. When would you use each in a program? Provide an example in assembly code for both. b) Analyze the following code and explain how the loop works. What will be the final value of AX after the loop terminates? Explain how the LOOP and JNZ instructions are working together. MOV CX, 05H MOV AX, 00H L1: ADD AX, 02H LOOP L1 JNZ L1	2	1+.5+.5 2
Q4	Justify the need of address decoding in memory interfacing. Interface eight 8Kx8 EPROM with 8086 microprocessor starting in the address space 40000. Justify the interfacing using address decoding. Explain how you can ensure that the microprocessor addresses all memory locations correctly. Provide neat and clean diagram of interfacing with address range for each of the eight EPROMs.	3	1+5
Q5	a) How does the IRET instruction differs from the RET instruction? b) Define interrupt vector and its scheme of storage in memory. Write an interrupt service procedure that adds the contents of AX, BX, CX, and DX registers and stores the result in AX. Write proper comments in the program	4	1 1.5+1
Q6	Write an assembly language program to count the number of bytes between location 60000H and 60100H that are an even number. Place the count in register BH. Write proper comments in the program	2	3

Q7	Write an assembly language program to swap the bytes in register DI s.t. least significant byte of DI becomes the most significant byte and vice-versa. Write proper comments in the program.	2	3
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UNIT TEST-2 EXAMINATION - OCT-2024