JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-3 EXAMINATION – DECEMBER 2021

B.Tech, Vth Semester (ECE and minor ECE)

COURSE CODE: **18B11EC512**

MAX. MARKS: **35**

COURSE NAME: **MICROPROCESSOR AND INTERFACING**

COURSE CREDITS: **3**

MAX. TIME: **02 Hrs**

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Missing data, if any, can be appropriately assumed.

Q1. What is the need to use a decoder circuit to interface memory with the microprocessor? Design an address decoder circuit using 3-to-8 line decoder to interface eight 32K×8 EPROMs with microprocessor to address memory starting from 50000H. Find the starting and ending address of each of the eight EPROMs interfaced to the microprocessor. **(2+4)**

Q2. What is an interrupt and interrupt vector? The interrupt vector for an INT 60H instruction is stored at which memory locations? What are the different actions performed by the microprocessor when a software interrupt instruction is executed? **(2+1+2)**

Q3. Write an assembly language program that scans through a 150H-byte section of memory 2000:0200H, located in the data segment, searching for a 20H. (Give proper comments with the instructions for your program) **(2+1)**

Q4. Write a program to find the area of a rectangle whose length and breadth is stored at memory location 1000:0000H and 1000:0001H, respectively. The word size area computed of the rectangle should be provided to the 8-bit I/O ports 4000H and 4001H. **(2+1)**

Q5. Write short notes on following: **(5)**

a) Direct memory access (DMA)

b) Arithmetic coprocessor

Q6. Write a near procedure that generates first ten elements of a Fibonacci series. (Give proper comments with the instructions for your program) **(3+1)**

Q7. Differentiate between **(6*1.5=9M)**

a) SRAM and DRAM

b) Interrupts and procedures

c) INT and far CALL instructions

d) short JUMP, near JUMP and far JUMP instructions

e) JG (jump if greater) and JA (jump if above) instructions

f) IN, INS, OUT, and OUTs instructions