Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Microprocessor **Semester: IV**
Program: B.tech Electronics and Communication
Time : 03 hrs.
Course Code: ECEG 2034 **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
1	Specify the number of registers in a 2K memory chip.	**4**	**CO1**
2	Define opcode and operand and specify the opcode and operand in the instruction MOV H,L	**4**	**CO2**
3	Calculate the number of memory chips needed to design 8K-byte of memory if the memory chip size is 1024x1	**4**	**CO1**
4	Explain the flag register of 80486 microprocessor	**4**	**CO2**
5	Write a program to enable all the interrupts of 8085	**4**	**CO3**

SECTION B
(4Qx10M= 40 Marks)

Q	Statement of question		CO
6	Draw a timing diagram for the instruction 2050 IN 01 h	**10**	**CO3**
7	Write a program to add two hex numbers 7A and 46 and to store the sum at memory location 2098 h and the flag status at location at 2297	**10**	**CO3**
8	Explain with the help of block diagram the operation of 80386 Microprocessor **OR** What are the addressing modes of 8086? Give examples of each. How doe pipelining in 8086 help in speeding up the process?	**10**	**CO2**
9	With the help of a block diagram explain the principle of operation of a ARM 7 processor	**10**	**CO2**

SECTION-C
(2Qx20M=40 Marks)

Q	Statement of question		CO

10	8085 is interfaced with 8255A in mode 1.Port Bdesigned as the intput port for a keyboard with interrupt I/O, and port A is designed as the outport port for a printer with status check I/O/. Address lines A2-A7 are connected to a NAND gate output of which is connected to chip select line of 8255.IOR and IOW are connected to RD and WR of 8255. a) Find port addresses by analyzing the decoding logic. b) Determine the control word to set up port A as output and port B as input in Mode 1 c) Determine the BSR word to enable $INTE_A$ d) Determine the masking byte to verify the $OBF_{B\ line}$ (Connected to PC1 in the status check I/O Write initialize instructions and a printer subroutine to ouput characters that are stored in memory.	**20**	**CO4**
11	8254 is interfaced with 8085 with A7 is connected to Chipselect pin of 8254, A0 and A1 of 8085 connected to A0, A1 of 8254 in an IO mapped IO scheme.. a)Write a subroutine to initialize counter 2 in mode 0 with a count of 50000_{10} b)Write a main program to display seconds by calling the subroutine as many times as possible c) Show the interfacing scheme of 8259 for managing multiple interrupts **OR** i)Write a program to add series of N 32 bit numbers using ARM 7 ii)Write a program to multiply two 32 but numbers using ARM 7	**20**	**CO4**