Regulation R17 *Subject code: 1P4EA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech II Year II Semester Supplementary Examinations, July 2022

COMPUTER ORGANIZATION

(CSE)

Maximum Marks: 70 Date:20.07.2022 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Define control register.

2 What is the role of PC, IR registers?

3 Write about condition code flag register in 8086

4 What is the purpose of INTR in 8086.

5 Define sorting instructions in 8086.

6 What is the use of priority interrupt?

7 What is the concept of partial remainder?

8 Perform the following subtractions in the binary number system, using 2's complements : (i) 1111 – 110 (ii) 1110 – 1100

9 What are the advantages of DMA?

10 What is the impact of the cache on overall performance of the computer?

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Explain in detail about conditional branch instructions. [10]

OR

12 Explain the functioning of a control unit explaining the terms control word, control memory, control address register and control buffer register [10]

13 What do you mean by pipelined architecture? How is it implemented in 8086? [10]

OR

14 A) Draw and discuss a typical maximum mode 8086 system. What is the use of a bus controller in maximum mode? [5 + 5]
B) How does the CPU identify between 8-bit and 16-bit operations?

15 Explain the steps involved in writing a program using an assembler? [10]

OR

16 Write a program for addition of two numbers. [10]

17 Draw a flow chart for Floating point Add/Subtract Operations. [10]

OR

18 Explain how we can identify arithmetic overflow is occurred while adding/subtracting two signed numbers. Draw the circuit for performing addition/subtraction of two 4 bit numbers that checks the overflow. [10]

19 A) What is the difference between isolated I/O and memory mapped I/O? What are the advantages and disadvantages of each?

B) Explain about 8089 IOP? [5 + 5]

OR

20 A) What is cache coherence problem? Explain the conditions for incoherence.

B) Discuss the mechanisms and possible solutions to overcome cache coherence problem.

[5 + 5]