R20 Regulation *Subject code: 3P4FB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Supplementary Examinations, February 2024

Computer Organization

(Information Technology)

Maximum Marks: 70 Date:19.02.2024 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 which carries 10M.
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)		CO	Bloom Tx
1	Write a program to evaluate X=(A+B) *(C+D) using two address instructions.	CO1	L3
2	What are the differences between hardwired and micro programmed control units?	CO1	L2
3	What do you mean by asynchronous data transfer?	CO2	L1
4	Draw the block diagram for CPU-IOP communication.	CO2	L2
5	Draw the block diagram of typical RAM chip.	CO3	L2
6	Define Virtual memory.	CO3	L1
7	List the special purpose registers used in 8086 microprocessors.	CO4	L1
8	Define segmentations in 8086 microprocessors.	CO4	L1
9	What is the difference between JA and JG in ASM?	CO5	L2
10	How to access subroutine within the main program procedure?	CO5	L2
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	An instruction is stored at location 300 with its address field at location 301. The address field has the value 400. A processor register R1 contains the number 200.Evaluate the effective address if the addressing mode of the instruction is a) direct b) immediate c) relative d) register indirect e) index with R1 as the index register. (10M)	CO1	L3
	OR		
12	Draw and explain about micro program control unit. (10M)	CO1	L2
13	a) What is the difference between isolated I/O and memory mapped I/O? State the advantages and disadvantages of each. (5M) b) What is a DMA controller? Explain. (5M)	CO2	L4 L2
	OR		
14	How the data transfer to and from peripherals is done? Discuss with neat diagrams and examples. (10M)	CO2	L2

15	Explain various memory technologies in detail. (10M)	CO3	L2
	OR		
16	Discuss the concept of Memory interleaving and give its advantages. (10M)	CO3	L2
17	Explain the internal architecture of 8086 microprocessors. (10M)	CO4	L2
	OR		
18	Explain in detail about the interrupts and interrupt service routines of 8086. (10M)	CO4	L2
19	Write an ALP in 8086 to perform series addition of N 16-bit numbers. (10M)	CO5	L3
	OR		
20	Write an ALP in 8086 to evaluate the following expressions. (10M) i. $AB - \frac{C}{D} + E$ ii. $\sum_{n=1}^{n} X_n Y_n$	CO5	L3