



R20 Regulation *Subject code:3P4EB*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech IV Semester Supplementary Examinations, December 2024

COMPUTER ORGANIZATION AND ARCHITECTURE
(Computer Science & Engineering)

Maximum Marks: 70

Date:05.12.2024

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	Define the term Computer Architecture.	1	L1
2	Draw the flow of Instruction cycle.	1	L1
3	What is queue in 8086?	2	L1
4	State the function of XLAT instruction.	2	L1
5	Write the 2's complement of 1011011?	3	L1
6	Define Exponent Under flow.	3	L1
7	Define Memory Access Time?	4	L1
8	Define asynchronous bus.	4	L1
9	How the timeslice method works?	5	L1
10	Define Processor Synchronization.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	A. Explain Instruction Codes in Basic Computer Organization [5M] B. Explain about Computer Registers in Basic Computer Organization [5M]	1	L2
OR			
12	A. Explain about Input-output and Interrupt [5M] B. Write in detail bout Computer Instructions [5M]	1	L2
13	A. Explain Instruction Cycle with neat timing diagram [5M] B. Write about different registers in Basic computer and Draw the diagram how they are connected with bus [5M]	2	L2
OR			
14	Draw the PIN configuration of 8086 microprocessor and explain about the PINs [10M]	2	L2
15	A. How many bits are needed to store the result addition, subtraction, multiplication and division of two n-bit unsigned numbers. Prove. [5M] B. What is overflow and underflow? What is the reason? If the computer is considered as infinite system do we still have these problems. [5M]	3	L2

	OR		
16	A. Explain Booth's algorithm with its theoretical basis. [5M] B. Represent two n-bit unsigned numbers multiplications with a series of n/2-bit multiplications. [5M]	3	L2
17	A. What is DMA? Explain [5M] B. Explain about serial communication [5M]	4	L2
	OR		
18	Explain the following a) Memory mapped I/O b) I/O Registers c) Hardware Interrupts and Programmed I/O [10M]	4	L2
19	A. Explain how Flynn classified the processors into different streams by giving an example for each stream. [5M] B. Explain tightly coupled and loosely coupled systems with suitable examples. [5M]	5	L2
	OR		
20	A. Draw and explain a typical functional structure of SIMD array processor. [5M] B. Explain array processor. [5M]	5	L2