R18 Regulation *Subject code:2P4FB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Regular/Supplementary Examinations, July 2021

COMPUTER ORGANIZATION

(INFORMATION TECHNOLOGY)

Maximum Marks: 70 Date:15.07.2021 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)

1 Differentiate the types of Interrupts? L2
2 Write short notes on Conditional branch instruction? L1
3 Illustrate the drawbacks in Interrupt I/O L2
4 Explain the difference between Isolated I/O and Memory mapped I/O? L2
5 List different types of RAM memories? L1
6 Distinguish between Data cache and Instruction cache? L2
7 Draw the pin diagram of 8086? L1
8 Indicate the data types that can be handled by 8086 processor? L1
9 If AX=5678H and CL=04, what will be the value in AX after executing the instruction ROR AX, CL? L3
10 Write a small delay program in Assembly language for 8086 processor? L3

Part-B

Answer All the following questions. (10MX 5=50Marks)

11 A. Define Instruction format and explain types of Instruction formats in detail? L1 (5M)
B. Explain the different types of Addressing modes with an example? L1 (5M)

OR

12 A. Explain different memory reference instruction register and I/O instructions register? L1 (5M)
B. Define Interrupt? Explain the types of Interrupts in detail? L1 (5M)

13 A. With the help of Instruction cycle diagram explain the implementation of I/O instruction execution using Program Interrupt concept? (5M) L2
B. Explain the Asynchronous data transfer process using Hand shaking method? (5M) L2

OR

14 A. What is DMA? Explain the concept of DMA in detail? (5M) L1
B. Illustrate the importance of IOP and explain the communication between IOP-CPU-IOP with neat sketches? (5M) L2

15 A. Set Associative mapping is the combination of direct and associative mapping, justify your answer with suitable diagrams? (5M) L2

B. Derive the Average Access time for the three level Cache memory system? (5M) L3

OR

16 A. Write short notes on Virtual memory. (5M) L1

B. Explain Memory Address map and miss and Hit Ratio concepts in detail? (5M) L2

17 A. Draw a detailed block diagram of 8086, showing the functional units required and indicates the interconnections between the various units. (6M) L2

B. Explain the purpose of Segment Register in detail? (4M) L1

OR

18 A. What are the various addressing modes in 8086 microprocessor? Explain them with examples. (5M) L1

B. Draw the Flag Register format of 8086 and explain the significance of each flag? (5M) L1

19 A. Explain execution of the following instructions w.r.t 8086 microprocessor with one example to each. (2M) L1

i. XLAT

ii. IMUL

B. Write a program to add a 16bit number present at 1111h:1234h with a 16bit number present at 2222h:5678h and store the result at 3333h:1010h. (8M) L3

OR

20 A. Justify the result of multiplying the two 8bit numbers 82H and 35H with MUL and IMUL instructions. (5M) L3

B. Write a program to find sum of squares of first 10 Natural numbers? (5M) L3

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