



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 3P4FB

B.Tech IV Semester Regular/Supplementary Examinations, September 2023

## Computer Organization (Information Technology)

Maximum Marks: 70

Date: 15.09.2023 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 What is the difference between two address and three address instruction format with an example?
- 2 What are the types of micro instruction?
- 3 Discuss source initiated transfer using handshaking.
- 4 What is a DMA controller?
- 5 What is meant by locality of reference?
- 6 How do you calculate cache hit ratio and why is it important?
- 7 What are the functions of general purpose registers?
- 8 What is TRAP interrupt? Mention its significance.
- 9 Define sorting.
- 10 What is a recursive procedure?

### Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Write a program to evaluate arithmetic expressions using three, zero address instruction:  
$$X = (A-B) + C * (D * E - F) / G + H * K$$

(10M)
- OR
- 12 A. Give characteristics of RISC and CISC. (5M)  
B. Draw and explain the flowchart for instruction cycle. (5M)
- 13 A. Why does DMA have priority over the CPU When both request a memory transfer? (5M)  
B. Discuss asynchronous data transfer. (5M)
- OR
- 14 Write a short note on  
A. Programmed I/O. (5M)  
B. Interrupt Initiated I/O. (5M)
- 15 Describe in detail about associative memory. (10M)

- OR
- 16 Discuss any six ways of improving the cache performance. (10M)
- 17 Define Addressing modes. List the various Addressing modes of 8086 Microprocessor with an example. (10M)
- OR
- 18 Explain minimum mode pin configuration of 8086 microprocessor. (10M)
- 19 Write an ALP in 8086 to transfer a block of N bytes from one location to another location. (10M)
- OR
- 20 A. Write an ALP in 8086 to count no. of even and odd numbers from the given array. (5M)  
B. Write an ALP in 8086 to arrange a given array of N bytes in ascending order. (5M)