



R18 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 2P5BC

B.Tech V Semester Regular/Supplementary Examinations, December 2021

MICROPROCESSORS AND MICROCONTROLLERS

(Electrical and Electronics Engineering)

Maximum Marks: 70

Date: 05.01.2022

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 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 meant by maskable interrupt?
- 2 What is the difference between minimum and maximum mode in 8086 processor?
- 3 What is the function of I/O ports in 8051 Microcontroller?
- 4 What is the function of stack pointer and program counter in 8051 Microcontroller?
- 5 What is the difference between I/O mapped I/O and memory mapped I/O?
- 6 What are 9 pins available in RS232 cable?
- 7 List out the various processor modes in ARM.
- 8 Explain the CMN and CMP thump instruction.
- 9 What is the difference between ARM and Cortex?
- 10 What are the features of OMAP processor?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain the functional diagram of 8086 microprocessor in detail with neat diagram. (10M)
OR
- 12 A. Write an Assembly language program to find the largest number in a array. (5M)
B. Write an Assembly language program to arrange the given numbers in ascending order. (5M)
- 13 Describe the interrupts of 8051 microcontroller in detail with a neat diagram. (10M)
OR
- 14 Explain the data transfer and Arithmetic instruction set of 8051 microcontroller in detail. (10M)
- 15 With a neat diagram explain the I2C bus in detail. (10M)
OR
- 16 Explain how to interface ADC with 8051 microcontroller with a neat diagram and also write a program to convert the analog signal into digital signal. (10M)
- 17 Explain in detail about ARM registers and Pipeline with neat diagrams. (10M)
OR
- 18 Explain in detail about Branch, software interrupt and program status register ARM instruction set. (10M)
- 19 Explain the architecture of CORTEX processor in detail with a neat block diagram. (10M)
OR
- 20 Explain the architecture of OMAP processor in detail with a neat block diagram. (10M)