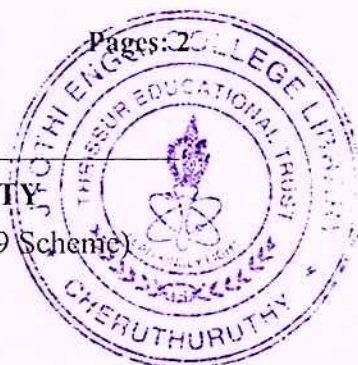


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (S,FE) (FT/WP/S3PT) Examinations June 2026 (2019 Scheme)



Course Code: EET303

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100

Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

Marks

- | | | |
|----|--|---|
| 1 | Explain the control and status signals of 8085. | 3 |
| 2 | Draw and explain the flag register of 8085 Microprocessor. | 3 |
| 3 | Explain the significance of stack memory while executing CALL and RET instructions. | 3 |
| 4 | Explain the operation of DAA instruction in 8085 Microprocessor. | 3 |
| 5 | Explain different mode of operation of 8255. | 3 |
| 6 | Differentiate between Microprocessor and Microcontroller. | 3 |
| 7 | Explain the operation of the following instructions of 8051 Microcontroller.
(a)JNB (b)CJNE (c)DJNZ | 3 |
| 8 | List out different bit handling instructions in 8051 and explain its operations. | 3 |
| 9 | Explain the significance of SM0,SM1 and REN in SCON register in 8051 Microcontroller. | 3 |
| 10 | List the C data types for 8051 Microcontroller . | 3 |

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

- | | | |
|----|---|----|
| 11 | a) Explain machine cycle and T State in 8085. | 4 |
| | b) Sketch and explain the timing diagram of the instruction MVI A,FF H with opcode 3EH stored in the memory location 6500H. | 10 |
| 12 | a) Explain with neat block diagram the architecture of Intel 8085 Microprocessor. | 9 |
| | b) List the various addressing modes of 8085 Microprocessor and explain each with suitable example. | 5 |

Module -2

- 13 a) Calculate the loop delay if the register pair BC of 8085 microprocessor is loaded with 8000H. Assume the system clock frequency to be 3 MHz. 5
- b) Develop the algorithm and explain an assembly language program in 8085 to find the largest number in a data array stored from memory location 6200H onwards. 9
- 14 a) Explain the following instructions used in 8085 Microprocessor.. 6
- i) LDAX B ii) OUT 01H iii) STA 6500
- b) Explain the instruction set in 8085 Microprocessor with suitable examples. 8

Module -3

- 15 a) Design a memory interface of 2K ROM and 4K RAM with 8085 using 2Kx8bit memory chips. 9
- b) Explain the I/O ports and their functions in 8051 Microcontroller. 5
- 16 a) Draw and explain the architecture of 8051 Microcontroller. 10
- b) Explain the Special Function Registers in 8051 Microcontroller. 4

Module -4

- 17 a) Explain the assembler directives and data types in 8051 Microcontroller with suitable examples. 6
- b) Write an ALP in 8051 to create a square wave with 50% duty cycle on Port 1.5. Assume XTAL= 11.05MHz. 8
- 18 a) Explain the addressing modes of 8051 Microcontroller with suitable examples. 8
- b) Write an ALP in 8051 to add two 8 bit numbers. 6

Module -5

- 19 a) With XTAL = 11.0592 MHz, find the TH1 value needed to have the following baud rates. (a) 9600 (b) 2400 (c) 1200 (d)4800 8
- b) Write a program for the 8051 to transfer letter "A" serially at 4800 Baud rate, continuously. 6
- 20 a) Write an 8051 C program to send values 00-FF to port P1. 6
- b) Explain the timer control logic in 8051 Microcontroller. 8
