

Printed Pages – 3

Roll No. : .....

**328653(28)**

**B. E. (Sixth Semester) Examination, Nov.-Dec. 2021**

**(New Scheme)**

**(Et & T Branch)**

**MICROCONTROLLER & EMBEDDED SYSTEMS**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : Attempt all questions. Part (a) is compulsory, attempt any two parts from (b), (c) and (d) of each question.***

**Unit-I**

1. (a) Define the term microcontroller.

2

**328653(28)**

**PTO**

[ 2 ]

- (b) Describe the block diagram of 8051. 7
- (c) Compare 8051, 8052 and 8031. 7
- (d) Explain PSW register in 8051. 7

**Unit-II**

- 2. (a) What is TMOD register in 8051? 2
- (b) Write a program to generate square wave with 2 KH requency on pin 1.5. 7
- (c) Describe the interrupt structure of 8051. 7
- (d) Describe the mode 2 programming steps in 8051. 7

**Unit-III**

- 3. (a) Describe role of RI and TI flag bit. 2
- (b) Explain 8 bit SCON register in detail. 7
- (c) Describe purpose of MAX 232 driver. 7
- (d) Write a program to transfer message 'YES' serially at 9600 baud, 8 bit data, 1 stop bit. 7

**Unit-IV**

[ 3 ]

- 4. (a) What are the role of  $\overline{\text{PSEN}}$ ,  $\overline{\text{RD}}$  and  $\overline{\text{WR}}$  in accessing external memory? 2
- (b) Interface stepper motor with 8051. 7
- (c) Interface the ADC 0804 with 8051. 7
- (d) Interface 8 K × 8 data ROM with 8051. 7

**Unit-V**

- 5. (a) Define the term Embedded system. 2
- (b) Describe Embedded system with real life example. 7
- (c) Describe different design challenges in development of Embedded system. 7
- (d) Explain characteristics of real time. 7