

Total No. of Questions : 4]

SEAT No. :

PE-3434

[Total No. of Pages : 2

[6502]-105

S.Y. B.Sc. (Computer Science)

ELECTRONICS

ELC-241-MN-T : Embedded System With AVR
Microcontroller

(Rev. 2024) (Semester - III)

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Use of calculator is allowed.

Q1) Answer the following (Any five) :

[5 × 1 = 5]

- a) State any two software development tools used in embedded system.
- b) What is the ROM size of AT-mega 32?
- c) How many timer register supported by AT mega 32?
- d) What is the role of PWM in DC motor interfacing?
- e) Write full form of SPI.
- f) Does LM-35 is Analog or Digital temperature sensor?

Q2) Answer the following (Any two) :

[2 × 5 = 10]

- a) List the different criteria for choosing a micro controller.
- b) Differentiate between serial and parallel communication with respective to data transfer, speed, no of wires, distance, cost.
- c) Explain the concept of Relay interfacing with an AVR and write an appropriate C-program to demonstrate the same.

Q3) Answer the following (Any two) :

[2 × 5 = 10]

- a) Write the name of various in build hardware units present in typical AVR mega series microcontroller unit.
- b) What are the features of ADC in AVR?
- c) Draw common Anode SSD interfacing with AVR microcontroller. Also write C-program to display numeric 'g' on common Anode SSD.

P.T.O.

Q4) Answer the following (Any four) :

[4 × 2½ = 10]

- a) Discuss any five application areas of Embedded system.
- b) Write short note on I/O ports in AVR microcontroller.
- c) Write embedded C-Program to toggle port-B of AVR microcontroller using delay function.
- d) Draw LCD interfacing diagram with ATmega 16/32 microcontroller.
- e) Draw bit format of TIFR ie timer counter interrupt flag register.
- f) Write short note on I2C.

