

Roll No. ....

**OLE-3239**  
**B. Tech. 5th Semester (EE)**  
**Examination – April, 2021**

**MICRO PROCESSOR & MICROCONTROLLER**

**Paper : PCC-EE-309-G**

*Time : Three Hours ]*

*[ Maximum Marks : 75*

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*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

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**Note :** Students have to attempt *five* questions in total, *first* being *compulsory* and selecting *one* from each Section.

1. (a) Define Bus Interface Unit.
- (b) What are advantages of Memory segmentation ?
- (c) Why is the 8284 A clock generator used with 8086  $\mu\text{C}$  ?
- (d) What is a bus cycle ?
- (e) Write conditions to start the timer 8253.
- (f) What are functions of handshake signals ?

- (g) Differentiate microprocessor and microcontroller.
- (h) Write various interrupts in microcontrollers.
- (i) Name items that have inbuilt microcontroller.
- (j) Name *two* ways to speed up digital computers.

$$1.5 \times 10 = 15$$

### SECTION – A

- 2. (a) Describe the 8086 internal architecture in detail. 7.5
- (b) Explain difference between linear addressing and segmented memory addressing. 7.5
- 3. (a) Discuss the difference between minimum mode and maximum mode operation. 7.5
- (b) What is assembly language and what are its advantages ? 7.5

### SECTION – B

- 4. (a) List the operating modes of 8255 A programmable peripheral interface. 7.5
- (b) Write about A/D & D/A interface. 7.5
- 5. Describe internal architecture & working of :  $7.5 \times 2 = 15$ 
  - (a) 8259 (Interrupt Controller)
  - (b) 8237 (DMA Controller)

## SECTION – C

6. Write about different types of microcontroller : 7.5 × 2 = 15
- (i) Embedded microcontrollers.
  - (ii) External Memory microcontrollers.
7. Explain various microcontroller features : 15
- Clocking, I/O pins, interrupts.

## SECTION – D

8. (a) Explain the architecture of 8051 microcontrollers. 7.5
- (b) Explain in brief the pin diagram of 8051 microcontroller. 7.5
9. (a) How is the 8051 interrupt priority set ? 7.5
- (b) Write about various applications of microcontrollers. 7.5
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