# Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
## (GIET University)

B. Tech (Fifth Semester - Regular) Examinations, November – 2024

## 22BELPC35002/22BEEPC35002 – Microprocessors and Microcontrollers

(EE/EEE)

Time: 3 hrs           Maximum: 70 Marks

### Answer ALL questions
### (The figures in the right hand margin indicate marks)

**PART – A**          **(2 x 5 = 10 Marks)**

Q.1. Answer *ALL* questions

| | | CO # | Blooms Level |
|---|---|---|---|
| a. | What is the function of programme counter in 8085 microprocessor? | CO1 | K1 |
| b. | What is the importance of bus interface unit (BIU) in 8086 microprocessor? | CO2 | K2 |
| c. | What are the advantages of memory segmentation? | CO2 | K3 |
| d. | What is N-Key rollover in keyboard and display controller (8279)? | CO3 | K3 |
| e. | Explain the difference between the instruction **MOV R2, #43H** and **MOV R2, #43** in 8051 microcontroller? | CO4 | K2 |

**PART – B**          **(15 x 4 = 60 Marks)**

Answer *All* the questions

| | | Marks | CO # | Blooms Level |
|---|---|---|---|---|
| 2. a. | Explain each bit of the flag register of 8085 microprocessor. | 8 | CO1 | K1 |
| b. | Explain the functional units of 8086 microprocessor with neat sketch. | 7 | CO1 | K2 |
| | (OR) | | | |
| c. | Explain different types of interrupts in 8086 microprocessor. | 7 | CO1 | K1 |
| d. | Explain the minimum mode configuration of 8086 microprocessor with timing diagram. | 8 | CO1 | K2 |
| 3.a. | Write an assembly language program to perform addition of two 8-bit hexadecimal number with considering carry using immediate addressing mode. | 10 | CO2 | K4 |
| b. | Explain the signification of instruction queue in 8086 microprocessor. | 5 | CO2 | K3 |
| | (OR) | | | |
| c. | Write an assembly language program to perform addition of two 8-bit hexadecimal number with considering carry using register indirect addressing mode. | 10 | CO2 | K4 |
| d. | What is the purpose of the **SEGMENT** and **ENDS** assembler directives in 8086 assembly language, and how do they affect memory allocation in a program? | 5 | CO2 | K3 |
| 4.a. | Explain the features of 8255 PPI and describe its modes of operation. | 10 | CO3 | K3 |
| b. | What is two-key lockout in keyboard and display interface 8279? | 5 | CO3 | K2 |
| | (OR) | | | |
| c. | Explain the main features of programmable keyboard/display interface 8279. | 10 | CO3 | K3 |
| d. | What is BSR mode of 8255 PPI? | 5 | CO3 | K2 |
| 5.a. | Explain addressing modes of 8051 microcontroller. | 8 | CO4 | K3 |
| b. | Explain the function of Port-3 of 8051 microcontroller? | 7 | CO4 | K2 |
| | (OR) | | | |
| c. | Discuss RAM memory space allocation of 8051 microcontroller. | 8 | CO4 | K3 |
| d. | Write and explain each bit of the programme status word of 8051. | 7 | CO4 | K2 |

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