**18EE504**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular / Supplementary) DEGREE EXAMINATION** | | | |
| **January, 2022** | **Electrical & Electronics Engineering** | | |
| **Fifth Semester** | **Microprocessor & Microcontroller** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1. | a) | Explain the ALE of 8086? | CO1 |  |
|  | b) | What is Program Counter register in 8085? | CO1 |  |
|  | c) | Differentiate between DAA and ADD operations in 8086? | CO1 |  |
|  | d) | List the features of DMA Controller Intel 8257. | CO2 |  |
|  | e) | Explain basic I/O Mode Of 8255. | CO2 |  |
|  | f) | Explain ICW1 in 8259A PIC. | CO2 |  |
|  | g) | Explain features of 8051 microcontroller. | CO3 |  |
|  | h) | What is the importance of DPTR register in micro controller? | CO3 |  |
|  | i) | What is split timer mode in 8051? | CO4 |  |
|  | j) | Draw the diagram for interfacing 7 segment displays with 8051. | CO4 |  |
| **Unit -I** | | | | |
| 2. | a) | Explain The Internal Architecture Of 8086 Microprocessors With Neat Sketch. | CO1 | 5M |
|  | b) | Develop 8086 assembly language program to find the smallest number in a given array? | CO1 | 5M |
| **(OR)** | | | | |
| 3. | a) | Explain the concept of memory segmentation of 8086 Microprocessor. | CO1 | 5M |
|  | b) | Write An ALP To add Two 16 Bit Numbers In 8086 Microprocessors. | CO1 | 5M |
| **Unit -II** | | | | |
| 4. | a) | Explain 8255 modes of operation. | CO2 | 5M |
|  | b) | Explain Interfacing Of 7-Segment Display To 8086 Using 8255. | CO2 | 5M |
| **(OR)** | | | | |
| 5. | a) | Draw and explain the architecture of 8254. | CO2 | 5M |
|  | b) | Draw and explain the internal architecture of 8251 USART. | CO2 | 5M |
| **Unit -III** | | | | |
| 6. | a) | Draw the functional block diagram of 8051 microcontroller and explain. | CO3 | 5M |
|  | b) | Explain about the register banks and SFR in 8051? | CO3 | 5M |
| **(OR)** | | | | |
| 7. | a) | Explain different addressing modes used in 8051 with examples. | CO3 | 5M |
|  | b) | Describe the operation of I/O ports in 8051 with neat sketch. | CO3 | 5M |
| **Unit -IV** | | | | |
| 8. | a) | Briefly Explain The Interfacing Of Keyboard InterfacingWith 8051. | CO4 | 5M |
|  | b) | Explain timer programming in 8051 micro controller. | CO4 | 5M |
| **(OR)** | | | | |
| 9. | a) | Explain Sensor Interfacing To 8051 Microcontrollers. | CO4 | 5M |
|  | b) | Explain LCD Interfacing To 8051 Microcontrollers. | CO4 | 5M |

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| **III/IV B.Tech (Regular / Supplementary) DEGREE EXAMINATION** | | | |
| **January, 2022** | **Electrical & Electronics Engineering** | | |
| **Fifth Semester** | **Microprocessor & Microcontroller** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No.1 compulsorily.* | | | (10X1= 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| --- | --- | --- | --- | --- |
| 1. | Answer All Questions | | (10x1=10 Marks) | |
|  | a) | Explain the ALE of 8086? (Co1) | |  |
|  | b) | What is Program Counter register in 8085? (Co1) | |  |
|  | c) | Differentiate between DAA and ADD operations in 8086? (Co1) | |  |
|  | d) | List the features of DMA Controller Intel 8257. (Co2) | |  |
|  | e) | Explain basic I/O Mode Of 8255. (Co2) | |  |
|  | f) | Explain ICW1 in 8259A PIC. (Co2) | |  |
|  | g) | Explain features of 8051 microcontroller.. (Co3) | |  |
|  | h) | What is the importance of DPTR register in micro controller? (Co3) | |  |
|  | i) | What is split timer mode in 8051? (Co4) | |  |
|  | j) | Draw the diagram for interfacing 7 segment displays with 8051. (Co4) | |  |
| **Unit-I** | | | | |
| 2. | a) | Explain The Internal Architecture Of 8086 Microprocessors With Neat Sketch. (Co1) | | 5M |
|  | b) | Develop 8086 assembly language program to find the smallest number in a given array? (Co1) | | 5M |
| **(OR)** | | | | |
| 3. | a) | Explain the concept of memory segmentation of 8086 micro processor. (Co1) | | 5M |
|  | b) | Write An ALP To add Two 16 Bit Numbers In 8086 Microprocessors. (Co1) | | 5M |
| **Unit-II** | | | | |
| 4. | a) | Explain 8255 modes of operation. (Co2) | | 5M |
|  | b) | Explain Interfacing Of 7-Segment Display To 8086 Using 8255. (Co2) | | 5M |
| **(OR)** | | | | |
| 5. | a) | Draw and explain the architecture of 8254. (Co2) | | 5M |
|  | b) | Draw and explain the internal architecture of 8251 USART (Co3) | | 5M |
| **Unit-III** | | | | |
| 6. | a) | Draw the functional block diagram of 8051 microcontroller and explain. (Co3) | | 5M |
|  | b) | Explain about the register banks and SFR in 8051? (Co3) | | 5M |
| **(OR)** | | | | |
| 7. | a) | Explain different addressing modes used in 8051 with examples. (Co3) | | 5M |
|  | b) | Describe the operation of I/O ports in 8051 with neat sketch. (Co3) | | 5M |
| **Unit-IV** | | | | |
| 8. | a) | Briefly Explain The Interfacing Of Keyboard InterfacingWith 8051. (Co4) | | 5M |
|  | b) | Explain timer programming in 8051 micro controller. | | 5M |
| **(OR)** | | | | |
| 9. | a) | Explain Sensor Interfacing To 8051 Microcontrollers. (Co4) | | 5M |
|  | b) | Explain LCD Interfacing To 8051 Microcontrollers. (Co4) | | 5M |

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**Scheme**

1. All bits carry one mark.

2. a) Architecture-2 M

Explanation- 3M

b) Program with explanation -5 M

3. a) Explanation- 5 M

b) Program with explanation 5 M

4. a) List- 1 M

Explanation- 4 M

b) Explanation- 5 M

5. a) Architecture-2 M

Explanation- 3 M

b) Architecture-2 M

Explanation- 3 M

6. a) Architecture-2 M

Explanation- 3 M

b) Explanation -5 M

7. a) List- 1 M

Explanation- 4 M

b) Diagram-2 M

Explanation 3 M

8. a) Explanation -5 M

b) Program with explanation -5 M

9. a) Explanation -5 M

b) Explanation -5 M