**18EI504**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **February, 2021** | **Electronics and Instrumentation Engineering** | | |
| **Fifth Semester** | **Microcontrollers** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| **Part – A** | | | |
| *Answer Question No.1 compulsorily.* | | | (1X10 = 10 Marks) |

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| 1. | Answer all questions | | |  | |
|  | a) | How many I/O pins are there in 8051? | | |  |
|  | b) | What is the use of PC(Program Counter) register? | | |  |
|  | c) | Which register contains Register Bank Select bits (RS0 and RS1)? | | |  |
|  | d) | What is the addressing mode of instruction MOV A,R0 ? | | |  |
|  | e) | Which Timer Mode will automatically reload value from TH to TL? | | |  |
|  | f) | What is the operation of DJNZ instruction? | | |  |
|  | g) | How many analog input channels are present in ADC0808? | | |  |
|  | h) | What the pins of LM35 temperature sensor? | | |  |
|  | i) | What is EEPROM? | | |  |
|  | j) | What is RISC? | | |  |
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| ***Answer ANY FOUR questions.*** | | | ***(4X10=40 Marks)*** | | |
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| 2. | a) | Write any five differences between microprocessors and microcontrollers. | | | 5M |
|  | b) | Explain functions of Port-3 pins and its pin configuration with a neat circuit diagram. | | | 5M |
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| 3. | a) | Explain various addressing modes with examples. | | | 5M |
|  | b) | Write about IE (Interrupt Enable) and IP (Interrupt Priority) registers. | | | 5M |
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| 4. | a) | Assuming that XTAL ( *f* ) = 11.0592 MHz, write a program to generate a square wave of 2 kHz frequency on pin P1.5. | | | 5M |
|  | b) | Explain various Data Transfer instructions with examples. | | | 5M |
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| 5. | a) | Write an ALP to find largest of an array of numbers. | | | 5M |
|  | b) | Explain briefly various Timer Modes of 8051. | | | 5M |
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| 6. | a) | Explain interfacing of LM35 sensor to 8051 microcontroller. | | | 5M |
|  | b) | Explain interfacing of Seven Segment display to 8051. | | | 5M |
|  | | | | | |
| 7. | a) | Write an ALP to display ‘NO’ on LCD using 8051. | | | 5M |
|  | b) | Explain interfacing of DAC0808 to 8051. | | | 5M |
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| 8. | a) | Explain briefly about various ports of PIC 16F877. | | | 5M |
|  | b) | Write about INTCON (Interrupt Controlling register) | | | 5M |
|  | | | | | |
| 9. | a) | Explain various Port-C pins of 16F877 and their alternate functions. | | | 5M |
|  | b) | Explain about Timers used in 16F877 PIC. | | | 5M |

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