**18EE402**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
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| **July, 2021** | **Electrical & Electronics Engineering** | | |
| **Fourth Semester** | **Digital Electronics** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| ***Answer question 1 compulsory.*** | | | **(10X1 = 10Marks)** |
| ***Answer one question from each unit.*** | | | **(4X10=40Marks)** |

|  |  |  | CO | BL | M |
| --- | --- | --- | --- | --- | --- |
| 1 | a) | A group of 4 bits is known as \_\_\_\_\_\_\_\_\_\_. | CO1 | L1 | 1M |
|  | b) | (44)8 in Hexadecimal system is \_\_\_\_\_\_\_\_\_\_. | CO1 | L1 | 1M |
|  | c) | What is Excess 3 code. | CO1 | L1 | 1M |
|  | d) | State Distributive law. | CO2 | L1 | 1M |
|  | e) | Convert A+AB+ABC into canonical SOP form. | CO2 | L1 | 1M |
|  | f) | What is application of comparator? | CO2 | L1 | 1M |
|  | g) | What is a Decoder?. | CO3 | L1 | 1M |
|  | h) | What do you mean by Latch? | CO4 | L1 | 1M |
|  | i) | What is Asynchronous counter? | CO4 | L1 | 1M |
|  | j) | What are the applications of D/A converters? | CO5 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Subtract the following in Excess 3 Code.  79 - 27 ii. 476.7 – 258.9 | CO1 | L2 | 5M |
|  | b) | What are the different types of logic gates and explain it. | CO1 | L2 | 5M |
|  |  | **(OR)** |  |  |  |
| 3 | a) | Expand A( + B) ( + B + ) to maxterms and minterms. | CO1 | L2 | 5M |
|  | b) | Explain TTL -Logic family with neat sketches. | CO1 | L2 | 5M |
| **Unit-II** | | | | | |
| 4 |  | Simplify the Boolean function using K map in SOP form.  F= ∑m(0,1,2,4,7,8,12,14,15,16,17,18,20,24,28,30,31) | CO2 | L3 | 10M |
| **(OR)** | | | | | |
| 5 | a) | Design a 2 bit Comparator. | CO3 | L2 | 5M |
|  | b) | Design a decimal to BCD encoder. | CO3 | L2 | 5M |
| **Unit-III** | | | | | |
| 6 | a) | Explain JK flip flop with logic diagram and truth table. | CO3 | L2 | 5M |
|  | b) | Convert T flip flop to D flip flop. | CO3 | L3 | 5M |
| **(OR)** | | | | | |
| 7 | a) | Explain Parallel-In, Parallel-Out shift register. | CO4 | L2 | 5M |
|  | b) | Design 3 bit synchronous down counter. | CO4 | L2 | 5M |
| **Unit-IV** | | | | | |
| 8 | a) | Explain Dual slope A/D converter. | CO5 | L2 | 5M |
|  | b) | Explain Sample and Hold circuit. | CO5 | L2 | 5M |
| **(OR)** | | | | | |
| 9 |  | Explain the classification and characteristics of memories. | CO6 | L2 | 10M |

