**18EEI02**

**Hall Ticket Number:**

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

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| --- | --- | --- | --- | --- | --- |
|  |  |  | CO | BL | M |
| 1 | a) | Write any two safety practices. | CO1 | L1 | 1M |
|  | b) | Draw the symbols for isolator and lighting arrestor | CO1 | L1 | 1M |
|  | c) | Mention any two types of electrical wiring systems | CO1 | L1 | 1M |
|  | d) | What are different types of earthing systems | CO2 | L1 | 1M |
|  | e) | Define Lumen | CO2 | L1 | 1M |
|  | f) | What is meant by lamp efficiency | CO2 | L1 | 1M |
|  | g) | Write any two specification of LT breakers | CO2 | L1 | 1M |
|  | h) | What is necessity of starter for a motor | CO3 | L1 | 1M |
|  | i) | Mention the advantages of distributed generation | CO3 | L1 | 1M |
|  | j) | Explain The role of PLC in automation | CO3 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Write about safety measures and precautions to be followed against electric shock | CO1 | L2 | 5M |
|  | b) | State IE rules used in residential wiring installation. | CO1 | L2 | 5M |
|  |  | **(OR)** |  |  |  |
| 3 | a) | What is meant by earthing. Explain in detail one method of earthing | CO1 | L3 | 5M |
|  | b) | Explain the MCB and MCCB. | CO1 | L2 | 5M |
| **Unit-II** | | | | | |
| 4 | a) | Define the following terms: (i) Illumination (ii) Glare (iii) Luminance (iv) Lamp efficiency. | CO2 | L1 | 5M |
|  | b) | Discuss different types of illumination schemes | CO2 | L2 | 5M |
| **(OR)** | | | | | |
| 5 | a) | Explain the incandescent lab with neat sketch. | CO2 | L2 | 5M |
|  | b) | Compare CFL and LED lamps. | CO2 | L2 | 5M |
| **Unit-III** | | | | | |
| 6 | a) | Define electric drive. List at least four advantages of electric drive | CO3 | L2 | 5M |
|  | b) | Illustrate the techniques adopted for improvement in power factor for industrial installation. | CO3 | L3 | 5M |
| **(OR)** | | | | | |
| 7 | a) | List the factors that govern the selection of transformer for HT substation | CO3 | L2 | 5M |
|  | b) | Explain PCC and MCC panels. | CO3 | L2 | 5M |
| **Unit-IV** | | | | | |
| 8 | a) | Find Demonstrate how to select the size of battery for an UPS | CO4 | L2 | 5M |
|  | b) | Explain DG systems. | CO4 | L3 | 5M |
| **(OR)** | | | | | |
| 9 | a) | Draw a neat block diagram of PLC and Explain function of each block | CO4 | L2 | 5M |
|  | b) | Explain the SCADA system for distribution automation. | CO4 | L3 | 5M |



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| **December, 2021** | **Electrical & Electronics Engineering** | | |
| **Seventh Semester** | **Industrial Electrical Systems** | | |
| **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) | Any safety practices. | CO1 | L1 | 1M |
|  | b) | Each symbol | CO1 | L1 | 1M |
|  | c) | Types of electrical wiring systems | CO1 | L1 | 1M |
|  | d) | Different types of earthing systems | CO2 | L1 | 1M |
|  | e) | Definition of Lumen | CO2 | L1 | 1M |
|  | f) | Definition lamp efficiency | CO2 | L1 | 1M |
|  | g) | Any Specification of LT breakers | CO2 | L1 | 1M |
|  | h) | Explanation of necessity of starter for a motor | CO3 | L1 | 1M |
|  | i) | Any advantages of distributed generation | CO3 | L1 | 1M |
|  | j) | Explanation of role of PLC in automation | CO3 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Safety measures against electric shock  Safety precautions against electric shock | CO1 | L2 | 3M  2M |
|  | b) | Any four IE rules used for residential wiring installation. | CO1 | L2 | 5M |
|  |  | **(OR)** |  |  |  |
| 3 | a) | Definition of earthing.  Any one method of earthing | CO1 | L3 | 2M  3M |
|  | b) | Calculation Total lighting load  Calculation of Total power load | CO1 | L2 | 3M  2M |
| **Unit-II** | | | | | |
| 4 | a) | Explanation of Definition of (i) Illumination (ii) Glare (iii) Luminance (iv) Lamp efficiency. | CO2 | L1 | 5M |
|  | b) | Explanation of types of illumination schemes | CO2 | L2 | 5M |
| **(OR)** | | | | | |
| 5 | a) | polar curves definition  use of polar curves in Illumination engineering | CO2 | L2 | 3M  2M |
|  | b) | Any four difference between Tungsten filament lamp and fluorescent lamp. | CO2 | L2 | 5M |
| **Unit-III** | | | | | |
| 6 | a) | Definition of electric drive.  Advantages of electric drive | CO3 | L2 | 2M  3M |
|  | b) | Explanation of methods of improvement in power factor | CO3 | L3 | 5M |
| **(OR)** | | | | | |
| 7 | a) | Any 5 factorsfor selection of transformer for HT substation | CO3 | L2 | 5M |
|  | b) | specification of a LT breaker. | CO3 | L2 | 5M |
| **Unit-IV** | | | | | |
| 8 | a) | Find Calculation of Ah rating based on load | CO4 | L2 | 5M |
|  | b) | Explanation how to select the size of DG. | CO4 | L3 | 5M |
| **(OR)** | | | | | |
| 9 | a) | Block diagram of PLC  Explanation of each block | CO4 | L2 | 3M  2M |
|  | b) | Any two factor with their explanation | CO4 | L3 | 5M |



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