**18EEI02**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **December, 2021** | **Institutional elective** | | |
| **Seventh Semester** | **Industrial Electrical Systems** | | |
| **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) | Write any two safety practices. | CO1 |  |
|  | b) | Draw the symbols for isolator and lighting arrestor | CO1 |  |
|  | c) | Mention any two types of electrical wiring systems | CO1 |  |
|  | d) | What are different types of earthing systems | CO2 |  |
|  | e) | Define Lumen | CO2 |  |
|  | f) | What is meant by lamp efficiency | CO2 |  |
|  | g) | Write any two specification of LT breakers | CO2 |  |
|  | h) | What is necessity of starter for a motor | CO3 |  |
|  | i) | Mention the advantages of distributed generation | CO3 |  |
|  | j) | Explain The role of PLC in automation | CO3 |  |
| **Unit -I** | | | | |
| 2. | a) | Write about safety measures and precautions to be followed against electric shock | CO1 | 5M |
|  | b) | State IE rules used in residential wiring installation. | CO1 | 5M |
| **(OR)** | | | | |
| 3. | a) | What is meant by earthing. Explain in detail one method of earthing | CO1 | 5M |
|  | b) | Explain the MCB and MCCB. | CO1 | 5M |
| **Unit -II** | | | | |
| 4. | a) | Define the following terms: (i) Illumination (ii) Glare (iii) Luminance (iv) Lamp efficiency. | CO2 | 5M |
|  | b) | Discuss different types of illumination schemes | CO2 | 5M |
| **(OR)** | | | | |
| 5. | a) | Explain the incandescent lab with neat sketch. | CO2 | 5M |
|  | b) | Compare CFL and LED lamps. | CO2 | 5M |
| **Unit -III** | | | | |
| 6. | a) | Define electric drive. List at least four advantages of electric drive | CO3 | 5M |
|  | b) | Illustrate the techniques adopted for improvement in power factor for industrial installation. | CO3 | 5M |
| **(OR)** | | | | |
| 7. | a) | List the factors that govern the selection of transformer for HT substation | CO3 | 5M |
|  | b) | Explain PCC and MCC panels. | CO3 | 5M |
| **Unit -IV** | | | | |
| 8. | a) | Find Demonstrate how to select the size of battery for an UPS | CO4 | 5M |
|  | b) | Explain DG systems. | CO4 | 5M |
| **(OR)** | | | | |
| 9. | a) | Draw a neat block diagram of PLC and Explain function of each block | CO4 | 5M |
|  | b) | Explain the SCADA system for distribution automation. | CO4 | 5M |

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