Code No: 138FB **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, December - 2020
UTILIZATION OF ELECTRIC POWER
(Electrical and Electronics Engineering)

Time: 2 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks
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1. Discuss the starting and running characteristics of d.c motor drives. Also, explain different speed control methods. [15]

2. What are different classifications of industrial loads and how they affect the motor selection? What is the main requirement to accelerate load of high moment of inertia.[15]

3. Explain the different welding processes under resistance welding. [15]

4. Why electric heating is preferred over other forms of heating? Explain the principle of operation of Dielectric heating. What are the applications of dielectric heating? [15]

5. Describe the construction and working of fluorescent lamp with a neat circuit diagram. [15]

6.a) State and explain laws of illumination.
b) A lamp of 250 candle power is mounted at a height of 2.5 meters from the centre of a table 6m×3m. Find the maximum and minimum illumination. [7+8]

7. What types of train services correspond to trapezoidal and quadrilateral speed time curves? Explain them with suitable graphs. [15]

8. An electric train has an average speed of 40 km ph on a level track between stops 2.2 Km apart. It is accelerated at 2.1 kmphps and braked at 2.9 kmphps. Draw the speed –time curve for the run. Estimate the energy consumption at the axles of the train per tonne-km. Take tractive resistance constant at 40 Nw per tonne and allow 8% for rotational inertia. [15]

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