

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013****Subject code: 1720711****Date: 07-06-2013****Subject Name: Electrical Power Utilization****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is resistance welding? Explain any one resistance welding with necessary diagrams. **07**
(b) Explain different methods of induction heating. Give some applications of induction heating. **07**
- Q.2** (a) Comparison between Resistance welding and Arc welding. **07**
(b) Give advantages & disadvantages of electrical welding. **07**
OR
(b) Explain Dielectric Heating with its application and advantages. **07**
- Q.3** (a) Derive the relevant formulas of Quadrilateral speed-time curve of a traction system. **07**
(b) Explain following terms. **07**
1) Crest Speed 2) Average Speed 3) Scheduled Speed 4) Acceleration
OR
- Q.3** (a) Enlist the requirements of an ideal traction system. **07**
(b) A train run with an average speed of 40 kmph. Distance between station is 2 km. Values of acceleration and retardation are 1.5 kmphs and 2.5 kmphs respectively. Find maximum speed assuming trapezoidal speed time curve. **07**
- Q.4** (a) Discuss the working of filament type bulb with neat sketch. **07**
(b) Explain following terms. **07**
1) Light 2) Candle Power 3) Luminous Flux 4) M.H.C.P
OR
- Q.4** (a) State and explain laws of Illumination. **07**
(b) The c.p. of lamp is 100. A plane surface is placed at a distance of 2 meters from this lamp. Calculate the illumination on the surface when it is (i) normal (ii) inclined to 45 (iii) parallel to rays. **07**
- Q.5** (a) What are the different applications of electrolysis? **07**
(b) State and explain faraday's law of electrolysis. **07**
OR
- Q.5** (a) Write a short note of Working and construction of Microwave oven in detail. **07**
(b) What do you understand by refrigerator? Draw and explain the electric circuit used in a refrigerator. **07**
