Seat No.: _____ Enrolment No._____

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. 1) Crest Speed 2) Average Speed 3) Scheduled Speed 4) Acceleration	**07**
		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 kmphps and 2.5 kmphps 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. 1) Light 2) Candle Power 3)Luminous Flux 4) M.H.C.P	**07**
		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 faradayôs 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**

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