Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-II Examination July 2010

Subject code: 720711
Subject Name: Electrical Power Utilization

Date: 09 / 07 / 2010 **Time: 11.00am – 1.30pm**

Total Marks: 60

Instructions:

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

Q.1	**(a)**	Explain the process of Die-electric heating.	**06**
	(b)	Give the difference between D.C.welding and A.C.welding	**06**
Q.2	**(a)**	State the laws of illumination.	**06**
	(b)	The illumination at a point on a working plane directly below the lamp is to be 100 lumens/m^2. The lamp gives 256 C.P. uniformly below the horizontal plane. Determine the height at which the lamp is suspended and find illumination at a point on the working table 1.2 meters away from the vertical axis of the lamp.	**06**
		OR	
	(b)	Make a neat sketch of Ajax-Wyatt core type induction furnace.	**06**
Q.3	**(a)**	Explain clearly speed-time curves for different services.	**06**
	(b)	A train runs with an average speed of 40 kmph. Distance between stations is 2 km. values of acceleration and retardation are 1.5 km.p.h.s. and 2.5 km.p.h.s. respectively. Find the maximum speed of train assuming trapezoidal speed-time curve.	**06**
		OR	
Q.3	**(a)**	Write short note on Regenerative braking used in traction system.	**06**
	(b)	Explain requirement of Ideal traction system with advantage of electric traction.	**06**
Q.4	**(a)**	Construction and working of Electric-Mixer.	**06**
	(b)	Explain electric circuit diagram of an Air-conditioner.	**06**
		OR	
Q.4	**(a)**	Construction and working of Washing machine.	**06**
	(b)	Draw and explain electric circuit of Refrigerator.	**06**
Q.5	**(a)**	State and explain faraday's law of electrolysis.	**06**
	(b)	If current of 10 amperes deposits 13.42gm. of silver from a silver nitrate solution in 20 minutes, calculate the electro-chemical equivalent of silver.	**06**
		OR	
Q.5	**(a)**	Explain in brief the different applications of electrolysis.	**06**
	(b)	What factors govern the better electro-deposition process?	**06**

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