TE sem VI (CBGS) Electrical
Sub- UOEE

Q. P. Code: 36420

Duration – 3 Hours

Total Marks - 80

24/05/18

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N.B.:- (1) Question No.**1** is compulsory.
(2) **Attempt** any **three** questions out of remaining **FIVE** questions.
(3) Assume suitable data if necessary and justify the same.

Q 1.	Answer the following questions.	20
	A) Explain Lambert's Cosine Law.	
	B) Compare AC and DC Systems of Railway Electrification.	
	C) Define Lux, Candle Power, and Maintenance Factor.	
	D) Draw Block Diagram of Electric Locomotive.	

Q 2 a) State and describe various types of lighting schemes. 10

Q 2 b) An electric Train has average speed of 50kmph between 2 stations having 10
same height from the sea level and 2km apart from each other. The
acceleration is 2 kmphps and Retardation is 4kmphps. Find the specific Energy
consumption per tonkm of train. Specific resistance of train is 40Nw/ton.
Combined motor and gear efficiency 70% and effect of rotational inertia 10%.

Q 3 a) Explain with diagram vapour compression system of refrigeration. 10

Q3 b) Explain Direct and Indirect Arc Furnace. 10

Q 4 a) What is Photometry? Explain in detail. 10

Q 4 b) It is required to provide an Illumination of 100 Lux in a factory hall of 30mx12m. 10
Assume that the Depreciation factor is 0.8, co-efficient of utilization is 0.4 and
efficiency of proposed lamp is 11 lumens per watt. Calculate the number of
lamps and their disposition.

Q5 a) Draw and explain the typical speed time curve for an electric train and explain 10
what you understand by crest speed, average speed and schedule speed.

Q 5 b) Explain series-parallel Hybrid Drive along with power flow during various 10
operating speed.

Q 6 Write short Notes on: 20
a) Laser welding.
b) Traction scada
c) Compact Fluorescent Lamps.

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