T·E Electrical·sem·VI CBSGS Nov-Dec·15   **QP Code : 6342**

Duration – 3 Hours   **Total Marks assigned to the paper- 80**

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. A) Why photometers required? B) What is the difference between electric and non-electric traction? C) Derive an expression for tractive effort produced by electric motors to bogie wheel. D) Explain working principle of CFL bulbs.	20
Q 2 a)	What do you mean by torque converter? Why it is required?	10
Q 2 b)	Write the design steps involved in illumination of office room with an example.	10
Q 3 a)	Explain the configuration of Hybrid Electric vehicle and explain its power flow for different modes of operation	10
Q 3 b)	What are the different Electric heating methods	10
Q 4 a)	Write a short note on electric welding methods.	10
Q 4 b)	Explain the working principle of sodium vapor lamp and mention its disadvantage	10
Q 5 a)	A train runs between 2 stations 2km apart at an average speed of 40kmph. The run is to be made according to the trapezoidal speed time curve. If maximum speed is to be limited to 60kmph, acceleration to 2kmphps, coasting retardation to 0.15kmphps and braking retardation to 3kmphps. Determine the duration of acceleration, coasting and braking.	10
Q 5 b)	Explain the electric circuit of domestic refrigerator.	10
Q 6 a)	With neat diagrams, derive an expression for the energy conservation in traction	10
Q 6 b)	Explain the working principle of electric furnace.	10

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