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BIEEE-011

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

00506

Term-End Examination

June, 2015

BIEEE-011 : ELECTRIC ENERGY UTILIZATION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) What do you mean by "Electric traction". How are traction systems classified ? 7

(b) Explain the working principle of arc furnace with help of a neat diagram. 7

2. (a) An electric train has an average speed of 42 km/h on a level track between stops 1400 metres apart. It is accelerated at 1·7 km/h/s and is braked at 3·3 km/h/s. Draw the speed-time curve for the run. 7

(b) Define the term "welding". Compare A.C. and D.C. welding. 7

3. Define the following terms : *7×2=14*

(a) Luminous flux

(b) Solid angle

(c) Candle power

(d) Utilization factor

(e) Reduction factor

(f) Lamp efficiency

(g) Space-height ratio

4. Draw the electric circuit of a refrigerator and explain its working. How can the temperature inside the refrigerator be adjusted ? *14*

5. (a) What are electrolytic processes ? Also write the applications of electrolysis. *7*

(b) Explain in brief the different processes involved in comfort air-conditioning. *7*

6. (a) What are the aims of flood-lighting and how are they achieved ? *7*

(b) Explain how regenerative braking can be obtained in D.C. locomotives. *7*

7. Write short notes on any ***two*** of the following : *2×7=14*

(a) Hybrid Electric Vehicle

(b) High Frequency Eddy Current Heating

(c) Laws of Illumination