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BIEEE-011

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

00769

Term-End Examination

December, 2017

BIEEE-011 : ELECTRIC ENERGY UTILIZATION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. Use of scientific calculator is allowed. Assume any suitable data, if missing.*

1. What are the requirements of a good heating material ? Describe different types of heating materials. *10*

2. Briefly describe the principle of induction heating at high frequency and highlight few applications of eddy current heating. *10*

3. Compare in detail, electric arc welding with resistance welding. Explain with the help of a neat sketch, the process of spot welding. *10*

4. A light source having an intensity of 300 CP in all directions is fitted with a reflector so that it directs 90% of its light along a beam having a divergence of 25°. Calculate the total light flux emitted along the beam and average illumination produced on a surface normal to the beam direction at a distance of 6 metres. *10*

5. Discuss the construction, principle of operation and application of the following : *10*

   (a) Sodium Vapour Lamp

   (b) Fluorescent Lamp

6. What are the merits and demerits of the DC system electrification ? *10*

7. Explain different types of speed control schemes in electric traction. *10*

8. Explain the tractive effort during acceleration of a train. *10*

9. Explain Hybrid Electric Vehicles in detail. *10*

10. Describe with the help of a neat sketch, the working of a refrigerator. *10*
