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BIEE-029

DIPLOMA ELECTRICAL ENGINEERING (DELVI)/ADVANCED LEVEL CERTIFICATE COURSE IN ELECTRICAL ENGINEERING (ACELVI)

00534

Term-End Examination

June, 2014

BIEE-029 : POWER GENERATION SYSTEM

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions including Question no. 1 which is* ***compulsory.***

1. Write the correct answer as *True* or *False* : *7×2=14*

(a) Sun is the primary source of energy. (True/False)

(b) Mechanical energy is the most important form of energy. (True/False)

(c) 1 kWh = 860 kcal. (True/False)

(d) The calorific value of a solid fuel is expressed in kcal/kg. (True/False)

(e) Three principal sources of energy used for the generation of electrical energy are water, fuels and radioactive substances. (True/False)

(f) The basic unit of energy is watt. (True/False)

(g) An alternator is a machine which converts mechanical energy into electrical energy. (True/False).

2. (a) Write the various sources of energy. Explain any one of them. *7*

(b) Discuss the comparison of generating stations on the basis of initial cost. *7*

3. Explain schematic arrangement of hydro-electric power stations. Also mention advantages and disadvantages. *14*

4. Write the principle of MHD power generation. Explain open and closed cycle system. *14*

5. Discuss the construction and working of thermoelectric power generator. Write the materials which are used in the making of thermoelectric elements. *14*

6. Write the characteristics and availability of wind energy. Name the types of wind-mills. Explain any one type of wind-mill. *14*

7. (a) Write the components of Tidal Power Plants. Show with a suitable diagram. *7*

(b) Name five general categories of geothermal sources. Explain hydrothermal convective systems. *7*

8. Write short notes on any ***four*** of the following : $3\frac{1}{2} \times 4 = 14$

(a) Electricity generation

(b) Solar water heater

(c) Non-conventional energy resources

(d) Mini hydro-electric power generation

(e) Photo-voltaic cell

(f) Maintenance of batteries