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BIEE-029

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

00245

Term-End Examination

December, 2014

BIEE-029 : POWER GENERATION SYSTEM

Time : 2 hours *Maximum Marks : 70*

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

1. State whether the following statements are *true* or *false* : *7×2=14*

(a) Cooling towers are used where water is not available in sufficient quantity. (True/False)

(b) In hydroelectric plant, spillways are used to discharge surplus water on the downstream side of dam. (True/False)

(c) India's first nuclear power plant was built at Calcutta. (True/False)

(d) Most simple and clean plant is Geothermal plant. (True/False)

(e) Economisers are used to heat air. (True/False)

(f) The electrical, heat and mechanical energies cannot be expressed in same units. (True/False)

(g) The electrical energy is cheaper than other forms of energy. (True/False).

2. (a) Explain a high head power plant giving its layout clearly. *7*

(b) Explain with a neat sketch a pumped storage plant. *7*

3. (a) Explain Seebeck effect with suitable example. *7*

(b) Explain the performance of thermo-electric power generator. Also write its applications. *7*

4. (a) What are the problems in operating large wind power generators ? *7*

(b) Discuss about wind electricity in small independent grids. *7*

5. (a) Discuss basic photovoltaic system for power generator with suitable diagram. *7*

(b) Write advantages and disadvantages of photovoltaic solar energy conversion. *7*

6. Explain the construction and working of Geothermal power plant. Write five general categories of geothermal sources. *14*

7. Discuss about solid fuels. Explain the classification and nature of fuels. Also write the importance of non-conventional sources of energy. *14*

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

(a) Fuel cells

(b) Future prospects of non-conventional sources of energy

(c) Dry process of Bio-mass conversion

(d) Ocean thermal electric conversion

(e) Steam generation

(f) Solar furnaces