Model Question
Sixth Semester B. Tech. Degree Examination
(2013 Scheme)
13.606.9: NEW ENERGY SYSTEMS (MP) - EL 2

Time: 3hrs
Max. Marks: 100

Answer all questions in part A

PART –A
(Each question carries 2 marks)

1. Is renewable energy the best reuse for contaminated land or a mine site?
2. Explain Seebeck thermoelectric effect.
3. Explain the effect of bio-fouling in OTEC plants.
4. Explain one method of solar radiation measurement.
5. Explain a thermoionic generator.
6. Explain polarization of cells.
7. What is a solar pond?
8. Describe any two geothermal source.
9. Enumerate the different components of a fossil fuel cell.
10. Describe an alkali-metal-high temperature battery.

(2 x 10 = 20 Marks)

PART B
Answer any one full question from each module in part B
(4 x 20 = 80 Marks)

MODULE 1

11. Give an account of the working of a closed cycle MHD power generator.
20 Marks

OR

12. (a) What are the factors to be considered for selection of materials for thermo-electric generator. (8 marks)
(b) Explain the working principle of a photo-voltaic cell. (12 marks)

MODULE 2

13. Explain with suitable sketch the various methods of plasma heating and confinement adopted in nuclear fusion reactors.
20 Marks

OR

14. (a) Illustrate the different types of solar energy collectors (10 marks)
(b) Explain any two non-electrical application of solar energy. (10 marks)
MODULE 3

15.  (a) Explain the different basin arrangements possible in a tidal energy conversion system.  \( (6 \text{ marks}) \)
(b) Explain an open cycle OTEC system and a hybrid cycle OTEC plant.  \( (14 \text{ marks}) \)

\textbf{OR}

16.  Compare and contrast between horizontal axis and vertical axis power conversion systems.  \( 20\text{Marks} \)

MODULE 4

17.  (a) Explain the various methods of hydrogen production, storage and transportation.  \( 20\text{Marks} \)

\textbf{OR}

18.  (a) Compare continuous and batch type digesters.  \( (12 \text{ marks}) \)
(b) Explain the KVIC plant.  \( (8 \text{ marks}) \)