

B. Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Final Year)

MECHANICAL ENGINEERING

Paper - III : Energy Resources Utilization

Time : 3 Hours

Maximum Marks : 75

Answer question No. 1 compulsory

(15)

Answer ONE question from each unit

(4 x 15 = 60)

- 1) a) Write the factors affecting run off.
- b) What are the classifications of Hydroelectric power plant?
- c) What are high pressure boilers?
- d) Explain the concept of Radiation shield.
- e) Define collector efficiency.
- f) What is a solar cell?

Unit - I

- 2) a) Describe the essential elements of hydroelectric power plant.
- b) Explain with a simple sketch working of a pumped storage plant with its advantages and disadvantages.

OR

- 3) a) What are the different fuels used for gas turbine power plant, what are the most suitable fuels for gas turbine power plant?
- b) Discuss the advantages and disadvantages of a gas turbine power plant.

Unit – II

- 4) a) Draw a block diagram to represent the various steps involved in coal handling.
b) Explain the construction and working of ESP.

OR

- 5) a) Explain with the help of neat sketch the LA Mont Boiler.
b) Describe the types of cooling towers used in steam power plant.

Unit – III

- 6) a) Explain with neat sketch working of Boiling Water Reactor BWR?
b) What do you understand by the term ozone layer depletion and what are the methods to prevent ozone layer depletion.

OR

- 7) a) What is a moderator in nuclear reactor, explain the desirable properties of a good moderator.
b) Explain the method of disposal of low level solid nuclear waste.

Unit – IV

- 8) a) With a neat sketch explain the working of a solar pond?
b) Explain with neat sketches working of wind mill.

OR

- 9) a) Stating advantages & disadvantages describe hydrogen oxygen fuel cell.
b) What are the advantages and disadvantages of geothermal energy over other energy forms?

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