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**Question Paper Code : 91439**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Fourth Semester

Electrical and Electronics Engineering

EE 2252/EE 43/EE 1252/080280027/10133 EE 403 — POWER PLANT  
ENGINEERING

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

(Use of steam tables and Mollier Chart is permitted)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain basic Thermodynamics cycles.
2. What are the methods of controlling fans? What are the disadvantages of FD fans?
3. Write about types of Turbines.
4. What is a surge tank? Why it is important in Hydro power plant?
5. What is a nuclear fission?
6. What you understand by Radioactive decay?
7. What are the main differences in work output and thermal efficiency of Gas Turbine?
8. What type of cycle is used in Gas Turbine?
9. What are the types of solar collector?
10. Give example of geothermal resources?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the types of coal handling systems? Write any one method with a neat flow diagram.

Or

- (b) Explain with a neat sketch about the following :

(i) Super heater

(ii) Deaerator

12. (a) Write about selection of Water Turbine? Explain any one Turbine with neat sketch used in Hydro electric power plants.

Or

- (b) Explain with neat sketch pumped storage plant. What are its advantages?

13. (a) Write about principles of nuclear energy. List out the various power plants station in India. With neat sketch explain any one.

Or

- (b) Explain the characteristic features of BWR. What do you mean by internal and external circulation.

14. (a) With a neat sketch explain Diesel engine power plant component layout. And also list out merits and demerits.

Or

- (b) Explain the effect of regeneration in gas turbine plant. Give the specific advantage and disadvantage of gas turbine plant for a utility system.

15. (a) What is meant by Thermoelectric power generation and Thermionic power generation. Discuss in detail with suitable sketch.

Or

- (b) Write short notes on:

(i) Fuel cell

(ii) MHD power generation

(iii) OTEC

(iv) Tidal power plants.