

**SUBJECT CODE NO:- P-59**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**S.E.(EEP/EE/EEE) Examination MAY/JUNE-2016**  
**Electrical Power Generation & its Economics**  
**(Revised)**

[Time:Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

- N.B
- i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
  - ii) Attempt any two questions from the remaining questions in each section.
  - iii) Assume suitable data, if necessary.
  - iv) Figure to the right indicates full marks.

**SECTION A**

- Q.1 Solve any five questions. 10
- a) What is function of air pre heater in steam power plant?
  - b) Explain condenser used in steam power plant.
  - c) Discuss the factor which affect- the thermal efficiency of thermal power plant in short.
  - d) What is the function of storage and pondage in hydro power plant?
  - e) Write factor considered for selection of nuclear power plant.
  - f) Why water hammer creates & How?.
  - g) What is hydrology?
  - h) When & where diesel electric power plants are used.
- Q.2 05
- a) Discuss factor to be taken into account while selecting site for a thermal power station. 05
  - b) Explain Ash handling in thermal power plant. 05
  - c) Explain stage of coal handling in thermal power plant. 05
- Q.3 05
- a) Explain working of hydro power plant. 05
  - b) Write short note of pelton wheel with diagram. 05
  - c) Draw the hydrograph and find average monthly flow. 05
- | Month | Discharge m <sup>3</sup> /s | Month     | Discharge m <sup>3</sup> /s |
|-------|-----------------------------|-----------|-----------------------------|
| Jan   | 1000                        | July      | 2500                        |
| Feb   | 800                         | Aug       | 3000                        |
| Mar   | 600                         | September | 2400                        |
| April | 500                         | Oct       | 2000                        |
| May   | 200                         | Nov       | 1500                        |
| June  | 1500                        | Dec       | 1500                        |
- Q.4 05
- a) Discuss the function of 05
    - i) Penstock
    - ii) surge Tank
    - iii) spill way
    - iv) Forebay
    - v) Trash Rack.
  - b) Write short note on economizer of thermal power plant. 05
  - c) Write prospectus and development of nuclear power plant in India. 05
- Q.5 05
- a) Write main components with their function in diesel power plant. 05
  - b) With neat diagram explain various parts of nuclear reactor. 05
  - c) Write short note on nuclear waste disposal. 05

## SECTION B

- Q.6 Solve any five questions. 10
- a) Write in short about gas plant fuel.
  - b) Write application where solar energy used.
  - c) What are forms of geothermal energy?
  - d) Draw sketch of wind power mills.
  - e) List the method of finding out the depreciation cost.
  - f) What do you mean by base load and peak load plant?
  - g) Differentiate between fixed cost & operating cost.
  - h) Draw sketch of incremental fuel cost curve.
- Q.7
- a) Method of improving efficiency of gas power plant. 05
  - b) Write components of gas power plant with their functions. 05
  - c) Why gas power plant used as peak load power plants. 05
- Q.8
- a) Explain MHD plant with diagram. 05
  - b) Write note on photo voltaic cell. 05
  - c) Write note on Tidal Power Generation. 05
- Q.9
- a) Write short note on constrains of economic generation. 05
  - b) Write short note on choice of size and number of generator units. 05
  - c) How is reduction of cost is done by using inter connecting generators. 05
- Q.10
- a) What is importance of solar power in present energy used in world? 05
  - b) Explain comparison of all power plants. 05
  - c) Describe in brief cost of electrical energy. 05