

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

- i) Q. No. 1 and Q. No. 6 are compulsory.
- ii) Attempt any two questions from remaining for each section.
- iii) Assume suitable data if necessary
- iv) Figures to the right indicate full marks.

SECTION-A

- Q.1 Solve any five questions 10
- 1) What is the function of moderator?
 - 2) Write the types of boilers.
 - 3) Define the term hydrograph.
 - 4) What is the function of gate?
 - 5) Draw the structure of dams.
 - 6) What is the meaning of the terms a) Atomic energy b) Isotope
 - 7) What are the components evolved in feed water and its treatment?
 - 8) Write the use of steam turbine in thermal power plant.
- Q.2 05
- a) Draw the neat sketch of hydropower plant.
 - b) Explain the working of hydropower plants. 05
 - c) What are the types of turbines used for hydroelectric power plant. Explain. 05
- Q.3 05
- a) What are the factors considered while selecting the site for internal power plant 05
 - b) Write the function and use of draught systems. 05
 - c) Write short note on water hammer. 05
- Q.4 05
- a) What are the prospectus and development of nuclear plants in india. 05
 - b) The mean monthly discharge for 12 months at a particular site of a river is given below. 05
- | Month | Discharge in millions m ³ /month | Month | Discharge in million of m ³ /month |
|-------|---|-------|---|
| A | 500 | O | 2000 |
| M | 200 | N | 1500 |
| J | 1500 | D | 1500 |
| I | 2500 | J | 1000 |
| A | 3000 | F | 800 |
| S | 2000 | M | 600 |
- Draw the hydrograph for the given discharge and fluid the arrange monthly flow take 30 days in month.
- Q.5 05
- a) What factors control the selection of a particular type of a reactor. 05
 - a) Explain the properties of shielding materials used in reactor. 05
 - b) Explain the classification of nuclear reactor. 05
 - c) Draw the layout of diesel power plant 05

SECTION-B

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| Q.6 | Solve <u>any five</u> questions | 10 |
| | 1) What are the components of gas turbine plant | |
| | 2) What are the forms of geothermal energy | |
| | 3) Draw the classification of tidal power plant | |
| | 4) What is meant by ZERO ENERGY HOUSE | |
| | 5) What are the basic requirements for locating a wind power plant. | |
| | 6) What are the different sources of geothermal energy. | |
| | 7) List the methods used for finding out the depreciation cost | |
| | 8) Draw the input output curves of thermal plant | |
| Q.7 | a) What are the factors considered for selecting a suitable site for tidal power plant? | 05 |
| | b) Explain horizontal axis wind mill with neat sketch. | 05 |
| | c) What is the importance of solar power in the present energy uses in the world. | 05 |
| Q.8 | a) Draw a neat diagram of a pump storage plant | 05 |
| | b) What are the basic requirements of a peak load plant? Explain. | 05 |
| | c) Explain the methods of determining the depreciation of electrical power plant. | 05 |
| Q.9 | a) The input – output characteristics of a 10mw thermal power stations is $I = 5 \times 10^6(10 + 8L + 0.4L^2)$ where I is in ks/hr & L is in mw. find the load at which the plant runs of maximum efficiency. | 05 |
| | b) Explain the plant MHD and draw its layout | 05 |
| | c) What are the constraints of economic generation. | 05 |
| Q.10 | a) Explain the advantages of gas plants | 05 |
| | b) Explain the function of componants of gas turbine plant | 05 |
| | c) Write the methods to improve thermal efficiency of gas power plant. | 05 |