

Seat
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मठ - 051

ELECTIVE - II
Power Plant Engineering
(New) (1311)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. All questions are compulsory and Attempt **any two** bits from each questions.
5. Figures to the right indicate full marks.
6. Non programmable calculator is allowed.

1. a) Why are steam turbines compounded ? What are different methods of compounding. Explain any one method of compounding. **10**
b) How was coal formed ? What is rank of Coal ? What are different rank of coal ? Explain proximate and ultimate analysis of coal. **10**
c) What are the basic objectives of feed water treatment ? Explain the lime - soda process for softening of feed water. **10**
2. a) Explain the essential elements of a hydroelectric power plant. **10**
b) Describe briefly the classification of hydraulic turbines in different categories. **10**
c) How is the Governing of reaction turbine carried out ? Explain with neat sketch. **10**
3. a) What is thermal reactor ? What is fast reactor ? Explain with neat sketch External and Internal circulation system of Boiling Water Reactor. **10**
b) Give the schematic layout of Diesel power plant. **10**
c) Explain the Morse Test. What is Willan's Line. **10**

4. a) Why is power generation by gas turbines attractive these day ? Also bring out the difference between the closed cycle and open cycle gas turbine power plants. 10
- b) With the help of neat sketches explain the operation of free piston engine plant. Explain its applications. What are its advantages and disadvantage. 10
- c) What are the various types of combined power plant ? Explain briefly. What are the inherent advantages of such a plant. 10
5. a) Explain with neat sketch a closed cycle MHD power plant. 10
- b) Explain with neat sketches how fuel cell operate. 10
- c) Explain geothermal heat as an energy source. What are sites where geothermal power plant have been established ? Give the five types of geothermal system in commercial use. 10
