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- b) Write a note on the importance of fluctuating load on the power plant.
- c) Discuss the economic operation of power system.
- d) What are the various transmission loss in plants. Also, discuss the criteria of loading of power plants with and without transmission loss.

Or

Explain how economic load division is obtained between two generators of a power station. Show that economical sharing between two generators is when their incremental rates are equal.

Total No. of Questions :5]

[Total No. of Printed Pages : 4

Roll No .

EE - 602

B.E. VI Semester

Examination, June 2016

Electrical Power Generation

Time : Three Hours

Maximum Marks : 70

- Note:* i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.
- ii) All parts of each question are to be attempted at one place.
 - iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.
 - iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) What do you mean by Solar Power Systems?
- b) Write the advantages and disadvantages of wind power.
- c) Explain any one Geothermal system with diagram.
- d) What is meant by MHD power plants? Classify them and discuss any one MHD system with neat diagram.

OR

Explain Horizontal axis and vertical axis wind mills with neat diagram. Also, discuss the performance of wind mills.

Unit - II

2. a) Write the basic elements of a nuclear power plant.
b) Discuss the advantages and disadvantages of steam power plants.
c) Write down the various factors which must be considered in selecting the site for steam power plants.
d) State the main components of a nuclear reactor and their function with figure. Also, classify them.

Or

With the help of schematic diagram, discuss the general layout of steam power plants.

Unit - III

3. a) What are the functions of surge tank and penstock?
b) Discuss base load and peak load power stations.
c) State the points to be considered in locating the site of a hydro power plant.
d) Compare the Thermal, hydro and gas power plant on the basis of site, initial cost, fuel cost, maintenance cost, cooling water requirement and the reliability.

Or

Draw the schematic layout of a hydroelectric power plant and discuss the function of each component and operation of plant.

Unit - IV

4. a) Define load factor and diversity factor.
b) Discuss load curve and load duration curves.
c) What do you mean by Depreciation? Explain sinking fund methods in detail.
d) The loads on power plant with respect to time for 24 hrs are given below:

Time(hrs)	0-6	6-8	8-12	12-14	14-18	18-22	22-24
Load (kW)	40	50	60	50	70	80	40

Draw load curve and find out load factor of power station. If the load above 60MW are taken by a stand by unit of 20MW capacity, find out the load factor of standby unit.

Or

The maximum demand of a generating station is 18MW. Calculate the cost per kWh generated from the data given below:

Capital cost = Rs. 180×10^6

Annual cost of fuel and lubricating oil = Rs. 16×10^6

Taxes and salaries = Rs. 10×10^6

Rate of interest = 12%, Depreciation = 8%

and, annual load factor = 60%

Unit - V

5. a) What do you understand by load sharing of power plants? Write its advantages.