

Seat No.	
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**B.E. (Mechanical) (Part - IV) (Semester - VIII) Examination,
April - 2016**

POWER ENGINEERING

Sub. Code : 49419

Day and Date : Friday, 22 - 04 - 2016

Total Marks : 100

Time : 03.00 p.m. to 06.00 p.m.

- Instructions :**
- 1) Solve any three questions from each section.
 - 2) Figures to the right indicate full marks.
 - 3) Assume suitable data if necessary.

SECTION - I

- Q1) a)** Explain in detail the factors considered for the selection of site for Hydro electric power plant. [8]
- b) Explain the present power position in India & in Maharashtra. [8]
- Q2) a)** Explain various tariff methods. [8]
- b) The energy consumption of a consumer per month is 2300KW-Hr. The maximum demand is 12KW. Using Hopkinson demand rate as given below, Find : [8]
- i) Monthly bill of the consumer and unit energy cost,
 - ii) Lowest possible bill for a month of 30 days and unit energy cost for the given energy consumption.

The Hopkinson charges are:

Demand Rates:

0-5 KW = Rs. 200/KW
 6-10 KW = Rs. 150/KW
 11-15 KW = Rs. 120/KW

Energy Rates:

First - 100 KW-hr = Rs. 2 KW-hr.
 Next - 500 KW-hr = Rs. 1.5 KW-hr
 Next - 2000 KW-hr = Rs. 1.0 KW-hr

Excess over 2000 KW-hr = Rs. 0.8 / KW-hr

P.T.O.

- Q3) a) Explain the Nuclear power plant with neat sketch along with its characteristics. [8]
b) Differentiate peak load plants & base load plants. [8]

Q4) Write short notes on the following: (Any Three) [18]

- a) Thermoelectric steam plant.
- b) Combined cycle power plant.
- c) Pumped storage plants.
- d) Load duration curve.

SECTION - II

- Q5) a) What is the importance of measurements with respect to power plants? Explain the techniques used for measurement of water purity. [8]
b) Explain the measurement of smoke & dust by reflected dust monitor. [8]

- Q6) a) What are the methods used to control 'NO_x' in the flue gas? Explain any one. [8]
b) Explain in detail maintenance procedures of thermal power plants. [8]

- Q7) a) What are the methods used to store the thermal energy? Explain any one. [8]
b) Define collection efficiency for 'ESP'. Explain its working & construction by drawing a neat sketch. [8]

Q8) Write short notes on (Any three) : [18]

- a) Acid Rain
- b) Dosimeter
- c) Energy Management techniques
- d) Power plant maintenance.

