Total No. of Questions :6]

SEAT No. :

P119

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APR. -16/BE/Insem. - 16

B.E. (Mechanical)

POWER PLANT ENGINEERING (402047)

(2012 Course) (Semester - II)

Time : 1 1/2 Hour] *[Max. Marks :30*

Instructions to the candidates:

1) ***Answer Q 1 or Q2, Q3 or Q4, Q5 or Q6***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary***

Q1) a) Write a note on present status of power generation in India. **[5]**

b) Determine the annual cost of water softening plant from the following data:

Cost = Rs. 2.56×10^5

Salvage value = 6%

Life = 10 years

Annual cost of chemicals = Rs. 15000

Annual repair cost = Rs. 1000

Labour cost per month = Rs. 3000

Rate of interest by sinking fund method = 11% **[5]**

OR

Q2) a) Write short note on

i) Load Shedding

ii) Carbon Credits **[5]**

P.T.O.

b) The daily load for a power plant is given by the following equation:

$L = 350 + 10\,t - t^2$

Where t is time in hours from 0 to 24 hrs and L in MW

i. Value of maximum load and when it occurs, and

ii. Plant load factor. **[5]**

Q3) a) What do you understand by coal beneficiation? **[5]**

b) The following observations were recorded during a test on surface condenser:

Condenser vacuum = 70 mm of Hg;

Barometer reading = 76.5 cm of Hg;

Mean condenser temperature = 35°C;

Hot well temperature = 28°C;

Condensate collected = 1800 kg/hr;

Air leakage = 1 kg/ ton of steam;

Cooling water circulated = 70 ton/ hr;

Cooling water inlet temperature 12°C;

Cooling water outlet temperature = 27°C.

Calculate

i. Vacuum efficiency

ii. Condenser efficiency **[5]**

OR

Q4) Short note on

a) Down flow surface condenser and

b) Central flow condenser **[10]**

Q5) a) Explain Mass Curve. **[4]**

b) Explain with neat sketch The Boiling Water Reactor (BWR) Power Plant. **[6]**

OR

Q6) a) Short note on Hydrographs. **[4]**

b) Short note on Nuclear Power Plants. State its advantages and disadvantages. **[6]**