

Power Plant Engineering

B. E. SEM-VII (CBSEGS) Mech - Power Plant Engg

Q. P. Code : 793601

(3 hours)

[Total Marks : 80]

21/12/16

- N.B. : 1) Question No. 1 is compulsory.
2) Attempt any Three questions from remaining Five.
3) Assume suitable Data wherever necessary.
4) Justify your answers with diagrams and graphs.

- 1) Write short notes on any four:- 20
a) Half Life
b) Run-off river plant
c) Combined hydro and thermal power plant
d) Waste disposal of nuclear power plant
e) Economic load sharing
- 2) a) Explain following terms in details: 10
i) Connected load ii) Diversity factor iii) Plant capacity factor
iv) Plant use factor and v) Demand factor
b) A load curve of power plant follows a sinusoidal curve with maximum load 10 of 7 MW and minimum load of 1 MW on 24 hour basis. Find the average load on the plant and plant load factors.
- 3) a) Explain in Detail the components of nuclear power plant. 08
b) Explain pumped storage hydro-power plant with neat sketch and 08
c) Draw general and T-S diagram of intercooled gas turbine 04
- 4) a) The data of river for 12 months at a Hydel plant site is given below. 10

Month	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
Discharge in millions of m ³ per months	1500	1200	900	600	300	2100	3000	3600	3000	2400	2100	1800

Draw the hydrograph and flow duration curve if available water head is 90 meters, Find power available for 90% turbine efficiency and 95% generator efficiency.

- b) Discuss different methods to improve the efficiency of Basic Gas Turbine cycle. 10

- 5) a) With neat sketch explain combined cycle power generation with merits and demerits. 10
b) Explain coal handling system in Detail. 10
- 6) Write short notes on any four of the following: 20
i) Dust collectors
ii) Rainfall measurements
iii) Base and Peak load plants.
iv) Application of diesel plants.
v) Tariff Methods

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