

GEC , DAHOD

ELECTRICAL ENGG.DEPARTMENT

ASSIGNMENT OF
ELECTRICAL POWER GENERATION
4RTH SEM (ELECT)

Prepared by:-

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1. Study of Energy Sources.

1. Define Conventional and Non-conventional sources of Energy.
2. Classify types of Energy.
3. Explain need of Energy.
4. Compare Conventional and Non-conventional energy sources.
5. Write short Note on : Power generation of scenario in India.
6. Explain the structure of power sector in Gujarat.

2. Study on :Steam power plant.

1. Explain advantages and disadvantages of steam power plant.
2. Draw and explain schematic diagram of steam power plant.
3. Explain equipments used in steam power plant.
4. Explain steam turbine.
5. Explain environmental effects of steam power plant.
6. Give a detail study of thermal power stations in India.
7. Give a detail study of thermal power stations in Gujarat.

3. Study of Hydro Power Station.

1. Explain concept of hydro power-station.
2. List advantages and disadvantages of hydro power station.
3. Explain site selection criteria for hydro power station.
4. Explain schematic arrangement and working of hydro power station.
5. Explain following elements:
 - i. Dam
 - ii. Reservoir
 - iii. Spill ways
 - iv. Surge tank
 - v. Penstocks
 - vi. Hydro turbines
 - vii. Tail race
6. Short note on hydraulic turbine.
7. Write short note on scenario of hydro power plant in India.

4. Study of NuclearPower Station.

1. Write short note on Nuclear reactor.
2. Classify Nuclear reactor.
3. Draw schematic arrangement of Nuclear power station.
4. List Advantages & Disadvantages of Nuclear power station.
5. Explain Environment Impact of Nuclear Power plant.
6. Give study of Nuclear power station in India and Gujarat.

5. Study of Diesel Power Plant & Gas Turbine.

1. Draw and explain Schematic arrangement of diesel power plant.
2. List Advantages and disadvantage of diesel power plants.
3. Write Short note on : Gas turbine power plants
4. Advantages and disadvantage of gas turbine power plant.
5. Classify gas turbine power plant.

6. Tariff and Economic aspects of power generation.

1. Explain the following terms:-
 - i. Connected load
 - ii. Maximum demand
 - iii. Average load
 - iv. Load factor
 - v. Diversity factor
 - vi. Plant capacity factor
 - vii. Plant use factor
 - viii. Utilization factor
 - ix. Power factor
2. Explain tariff and its objective.
3. The connected on a generating station is 50MW and the maximum demand is 30MW. Numbers of units generated per annum are 105×10^6 . Find the (1) Demand factor and (2) Load factor.
4. A generating station supplies power to five substations whose maximum demands are respectively 10,20,15,25 and 5MWDiversity factor between the substations and the power station is 1.2 . If the connected load to the power station is 80MW and the annual load factor is 40% calculate the following.
 - i. Maximum demand on the power station.
 - ii. Numbers of units generated per annum.
 - iii. Average demand
 - iv. Demand factor

v. Connected load factor.

5. A power station has to supply power to loads as given below:

Time	KW
11 pm to 5 pm	500
5 am to 6 am	750
6 am to 7 am	1000
7 am to 9 am	2000
9 am to 12 noon	2500
12 noon to 1 pm	1500
1 pm to 5 pm	2500
5 pm to 7 pm	2000
7 pm to 9 pm	2500
9 pm to 11 pm	1000

Draw the load curve and calculate the load factor.

7. Explain load curve & load duration curve.
8. Explain base load and pick load power plant.
9. Classify tariff.

7. Study of Solar Power Plant.

1. Explain solar energy power generation.
2. Write a short on solar cell.
3. Write a short on Pyranometer.
4. Explain Advantages & Disadvantages of solar cell.
5. Explain the application solar photo-voltaic cell.
6. Write short note on liquid flat plate collectors.
7. Make a list of application on solar energy.
8. Write short note on solar distillation plant.
9. Write a short note on solar photo- voltaic solar generation.
10. Give a details study on state on solar photo-voltaic installation in India.

8. Study of Wind Power Conversion System.

1. Explain study of wind power conversion.
2. Explain basic wind energy conversion.
3. Write a short note on horizontal axis wind turbine (hawt).
4. Explain advantages and disadvantages of wind energy conversion.
5. Draw block diagram of wind energy conversion
6. Short note on vertical access wind turbine.
7. Explain site selection criteria of wind power plant.

9. Study of Sub-Station.

1. What is sub-station? Classify it.
2. Draw line diagram of any receiving substation
3. Draw and explain line diagram of 66/11 KV SUBSTATION.
4. Short note on pole mounted substation
5. Make a list of equipments in a substation and its function.

10. Study of Neutral Earthing.

1. Write important of earthing?
2. Explain isolated neutral system.
3. Explain advantages of neutral earthing.
4. Explain method of neutral earthing.
5. Explain Peterson coil earthing.
6. Explain voltage transformer earthing.