**Question Bank (I- scheme)**

**Name of Course: ELECTRICAL POWER GENERATION Unit Test: II**

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**Course code: (22327) Course -EPG Semester: III Programme: EE**

**Chapter 3: Solar and Biomass based Power Plants (08M)**

**2 Marks Questions:**

1) List the different materials used as bio-mass for power generation.

2) Name the different types of bio-mass based power plants.

**4 Marks Questions:**

3) Draw the layout of bio-chemical based power plant and explain its working.

4) Draw the layout of bio-diesel based power plant and explain its working.

5) Draw and explain any one type of bio-gas plant.

**Chapter 4: Wind Power Plants (10M)**

**2 Marks Questions:**

6) Name the various types of wind turbines.

7) State the meaning of the terms 1) Power in wind 2) Maximum Power

**4 Marks Questions:**

8) Draw and explain horizontal axis wind turbine.

9) Draw the block diagram of basic wind energy conversion system and write the function of

each block.

10) Draw and explain vertical axis wind turbine.

11) Draw and explain any one type of constant speed electric generator used in large wind power plants.

12) Draw and explain any one type of variable speed electric generator used in large wind power plants.

13) State the advantages and disadvantages of squirrel cage induction generator (SCIG) connected in wind power plant.

**Chapter 5: Economics of power generation and interconnected Power System (15M)**

**2Marks Questions:**

13) Define the terms 1) Cold reserve 2) hot reserve.

14) Define the terms 1) Load factor 2) Diversity factor.

15) State the meaning of load duration curve.

16) State the meaning of captive power generation.

**4 Marks Questions:**

17) A power station has a maximum demand of 15000kW. The annual load factor is 50% and plant capacity factor is 40%. Determine the reserve capacity of the plant.

18) A generating station has the following load cycle.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time (Hrs) | 0-6 | 6-10 | 10-12 | 12-16 | 16-20 | 20-24 |
| Load (MW) | 50 | 50 | 60 | 70 | 80 | 40 |

Draw the load duration curve and find 1) Load factor 2) kWh 3) Average demand

4) maximum demand

19) Why is it necessary to interconnect generating systems? State any two advantages of interconnecting systems.

20) Distinguish between base load and peak load.

21) A plant having a load factor of 0.6 has a peak load of 110MW. Calculate the energy generated by the plant in one month.

22) Describe the procedure of load sharing and transfer the of load between stations..

23) State the causes, impact and reasons of grid system fault.

24) Define the following terms related to power system.

1) demand factor 2) utilization factor 3) Diversity factor 4) average demand

25) The load of a 210MW generating station changes as recorded in the following table during 24 hrs of a day. Draw the daily load curve and load duration curve.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time  Load in MW | 6 a.m  100 | 7 a.m  110 | 8 a.m  120 | 9 a.m  120 | 10 a.m  120 | 11 a.m  125 |
| Time  Load in MW | 12noon  125 | 1 p.m  130 | 2 p.m  130 | 3 p.m  130 | 4 p.m  125 | 5 p.m  125 |
| Time  Load in MW | 6 p.m  120 | 7 p.m  110 | 8 p.m  140 | 9 p.m  145 | 10 p.m  130 | 11 p.m  120 |
| Time  Load in MW | 12 p.m  110 | 1a.m  100 | 2a.m  40 | 3a.m  45 | 4a.m  50 | 5a.m  55 |