**Q. P. Code:-23916**

**[Time: Three Hours]** **[Marks:80]**

1) Question No.1 is compulsary.
2) Attempt any 3 questions from remaining four questions.
3) Figure to the right indicate full marks.
4) Make suitable assumptions wherever necessary.
5) Draw suitable diagram wherever necessary

Q 1 20

a) Compare the nuclear fission and fusion
b) State advantages and disadvantages of gas turbine power plant
c) Explain hydraulic cycle
d) Explain the working of PV cells with the neat diagram

Q 2 20

a. Explain typical layout of thermal power plant
b. Explain various factors and effect of fluctuating load on operation of power plant and also explain method to meet fluctuating load.

Q 3 20

a) Draw and explain the general layout of diesel power plant.
b) The maximum demand of power station is 96000kW. It has to supply the load as follow:

| Time(hrs) | 0-6 | 6-8 | 8-12 | 12-14 | 14-18 | 18-22 | 22-24 |
|---|---|---|---|---|---|---|---|
| Load(MW) | 48 | 60 | 72 | 60 | 84 | 96 | 48 |

i. Draw load curve and load duration curve
ii. Calculate load factor

Q 4 20

a. Explain horizontal axis and vertical axis wind turbine
b. Draw a neat layout of hydroelectric power plant and explain in brief.
   i. Reservoir
   ii. Dam
   iii. Penstock
   iv. Surge tank

Q 5 Write shot notes on any two: 20

a. Boiling water reactor(BWR)
b. Fuel Cell
c. power generation by using biomass
d.Solar Collector

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