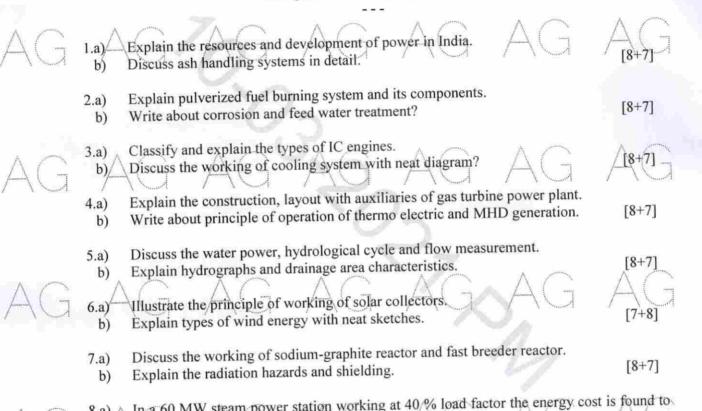Code No: 137FT/127GP/117GP/57023

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, March - 2021
POWER PLANT ENGINEERING
(R16 – Mechanical Engineering; R15 - Mechanical Engineering; R13 - Mechanical Engineering; R09 - Mechanical Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks
- - -

1.a) Explain the resources and development of power in India.
  b) Discuss ash handling systems in detail. [8+7]

2.a) Explain pulverized fuel burning system and its components.
  b) Write about corrosion and feed water treatment? [8+7]

3.a) Classify and explain the types of IC engines.
  b) Discuss the working of cooling system with neat diagram? [8+7]

4.a) Explain the construction, layout with auxiliaries of gas turbine power plant.
  b) Write about principle of operation of thermo electric and MHD generation. [8+7]

5.a) Discuss the water power, hydrological cycle and flow measurement.
  b) Explain hydrographs and drainage area characteristics. [8+7]

6.a) Illustrate the principle of working of solar collectors.
  b) Explain types of wind energy with neat sketches. [7+8]

7.a) Discuss the working of sodium-graphite reactor and fast breeder reactor.
  b) Explain the radiation hazards and shielding. [8+7]

8.a) In a 60 MW steam power station working at 40 % load factor the energy cost is found to be 5 paise /kWh. Calculate the cost of energy of the power station load factor is improved by 50 %. Due to increased energy generation the fuel cost increases the annual generation cost of 6%.
  b) Discuss pollutants and pollution standards. [8+7]

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