Reg. No. : | | | | | | | | | | |

Question Paper Code: 59710

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Elective

Mechanical Engineering

15UME910 - POWER PLANT TECHNOLOGY

(Regulation 2015)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Location of the surge tank in a hydro-electric station is near to the CO1- R

   (a) Tailrace (b) Turbine (c) Reservoir (d) Draft tube

2. The cheapest plant in operation and maintenance is CO1- R

   (a) Hydro-electric power plant (b) Steam power plant

   (c) Nuclear power plant (d) Diesel power plant

3. Which conveyor is suitable for large quantities of coal over large distances? CO2- R

   (a) Belt conveyor (b) Screw conveyor (c) Bucket elevator (d) Flight conveyor

4. Equipment used for pulverizing the coal is CO2- R

   (a) Hopper (b) Stoker (c) Ball mill (d) None of these

5. The control rods in the control system of nuclear reactors are used to CO3 -R

   (a) Absorb excess neutrons (b) Control fuel consumption

   (c) Control temperature (d) All of these

6. In which of the reactors is the steam generated in the reactor itself? CO3 -R

   (a) Pressurized water reactor (b) Boiling water reactor

   (c) Liquid metal fuelled reactor (d) All the above

7. The diesel plants are mainly used as _____ CO4- R

(a) Peak load plants (b) Base load plants (c) Standby power plants (d) None of these

8. In a gas turbine power plant, the maximum pressure ratio is limited to CO4 -R

(a) 5 (b)10 (c) 15 (d) 20

9. Tidal energy utilizes _____ energy of water. CO5 -R

(a) Kinetic (b) Potential (c) Heat (d) None of these

10. As the load factor of generating plant increases, the generation cost per unit energy generated CO5-R

(a) decreases (b) increases

(c) may increase or decrease (d) remains the same

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11.	Sketch a typical hydroelectric power plant indicating all the components of power plant and list the factors to be considered for the selection of hydro-electric power plant.	CO1- U	(8)
12.	Explain the ball and race mill system used for pulverization of coal with neat diagram.	CO2- U	(8)
13.	Sketch the layout of a Nuclear power plant describing the components of the power plant.	CO3- U	(8)
14.	Explain about open cycle gas turbine and closed cycle gas turbine with neat sketch	CO4- U	(8)
15	Explain the working principle of geo thermal energy conservation system with neat sketch.	CO5 -U	(8)