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Question Paper Code: 45705

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

Fifth Semester

Mechanical Engineering

14UME505 - POWER PLANT TECHNOLOGY

(Regulation 2014)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Identify the non-renewable energy resource from the following
 - (a) Coal
 - (b) Fuel cells
 - (c) Wind power
 - (d) Wave power
2. In a thermal power plant, cooling towers are used to
 - (a) Condense low pressure steam
 - (b) Convert water to ice
 - (c) Cool water used in condenser for condensing steam
 - (d) Cool feed water of boiler
3. Pulverized coal is a
 - (a) Coal free from ash
 - (b) Non-smoking coal
 - (c) Coal which burns for long time
 - (d) Coal broken into uniform particles
4. In a steam turbine cycle, the lowest pressure occurs in
 - (a) Turbine inlet
 - (b) Boiler
 - (c) Condenser
 - (d) Super heater
5. Which of the following material can be used as a moderator?
 - (a) Graphite
 - (b) Heavy water
 - (c) Beryllium
 - (d) none of these

6. In a hydro-electric plant a conduct system for taking water from the intake works to the turbine is known as
 (a) Dam (b) Reservoir (c) Penstock (d) Surge tank
7. The air standard cycle of a gas turbine plant is
 (a) Dual cycle (b) Brayton cycle
 (c) Rankine cycle (d) Carnot cycle
8. Gas turbine is widely used in
 (a) Pumping stations (b) Aircraft
 (c) Locomotives (d) Automobiles
9. Efficiency of the solar panel decreases with
 (a) Decrease in temperature (b) Increase in temperature
 (c) Decreases with pressure (d) None of these
10. In pumped storage, the
 (a) Power is produced by means of pumps
 (b) Water is stored by pumping
 (c) Water is re circulated through turbine
 (d) Downstream water is pumped up-stream during off load periods

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. With neat diagram explain the working of gas turbine-steam turbine combined cycle plant and mention its advantages. (8)
12. Elaborate the following (i) Chain grate stoker (ii) Spreader stoker. (iii) Multi retort stoker and (iv) under grate stoker. (8)
13. Illustrate with a sketch the working of a nuclear power plant and explain the various components in detail. (8)
14. How do you select engine for a diesel power plant ? Draw a diesel power plant and explain its major components. (8)
15. Describe the working principle of closed cycle or Anderson OTEC power plant with a schematic diagram. (8)