

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 41755

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Fifth Semester

Mechanical Engineering

14UME505 - POWER PLANT TECHNOLOGY

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which of the following generating stations has the minimum running cost
 - hydroelectric
 - nuclear power
 - thermal power
 - diesel power
- Efficiency of thermal cycle increases by
 - regeneration
 - heating
 - cooling of steam
 - none of the these
- Compounding of steam turbine is done for
 - reducing the work done
 - increasing the rotor speed
 - reducing the rotor speed
 - balancing the turbine
- _____ has maximum effect on cooling tower performance.
 - Drift
 - Louvers
 - Fill media
 - Casing
- Half-life of radioactive isotope is the time required for half of the _____ to decay.
 - electrons
 - protons
 - atom
 - nucleus
- _____ is a channel which leads water to a turbine.
 - Tailrace
 - Head Race
 - Side Channel
 - Spillway

7. The property of ignition lag is measured in terms of
 (a) Octane number (b) Cetane number
 (c) Calorific Value (d) None of these
8. The air standard cycle of a gas turbine plant is
 (a) Dual cycle (b) Brayton cycle
 (c) Rankine cycle (d) Carnot cycle
9. _____ is the main factor to form tides in the sea.
 (a) Sun (b) Moon (c) Star (d) None of these
10. Efficiency of the solar panel decreases with
 (a) decrease in temperature (b) increase in temperature
 (c) decreases with pressure (d) none of these

PART - B (5 x 2 = 10 Marks)

11. What do you understand by load duration curves?
12. What is a pulveriser and why it is used?
13. List the factors to be considered in selecting turbines.
14. What is intercooling and why it is done?
15. What is OTEC?

PART - C (5 x 16 = 80 Marks)

16. (a) With neat diagram explain the working of gas turbine-steam turbine combined cycle plant and mention its advantages. (16)

Or

- (b) Explain the working principle of Fluidized Bed Boiler with a neat sketch. (16)

17. (a) With neat sketch explain the various steps involved in coal handling system on a steam power plant. (16)

Or

- (b) (i) Explain the operation of an electronic precipitator with a neat sketch. (8)

- (ii) Explain the Evaporative Condenser with a neat diagram. (8)

18. (a) Draw and explain the construction and working principle of Pressurized Water Reactor. (16)

Or

(b) Draw the Layout of Hydro Power Plant and also explain the components and working of Hydro power plant. (16)

19. (a) How do you select engine for a diesel power plant ? Draw a diesel power plant and explain its major components. (16)

Or

(b) (i) Explain the working of gas turbine cycle with inter cooling. (8)

(ii) Discuss the differences between the open cycle and closed cycle gas turbine power plants. (8)

20. (a) (i) Explain the power generation from geothermal energy. (8)

(ii) Explain the construction and working principle of Tidal power plants. (8)

Or

(b) Explain the construction and working principle of solar power plant. (16)
