

Student Exam No: _____

GANPAT UNIVERSITY
B.TECH SEM.VITH MECHANICAL ENGINEERING
CBCS REGULAR EXAMINATION MAY/JUNE -2013
2ME604 POWER PLANT ENGINEERING

TIME:- 3 HOURS

TOTAL MARKS :-70

Instructions:

- 1) Attempt all question.
- 2) Answer of two section must be written in separate answer book.
- 3) Right figure indicates full marks.
- 4) Assume required data if necessary.
- 5) Allow steam table, mollier diagram.

SECTION – I

- Q-1 (A) Explain in detail types of Storage of coal. 06
(B) Steam enters the condenser at 36°C. The condenser vacuum is 70 cm of mercury when the barometer reads 75.5 cm of Hg. Determine the vacuum efficiency. Estimate the mass of air present in the condenser per kg of steam. 06
- OR
- Q-1 (A) Enlist types of Solid fuel firing. Explain the over feed stokers. 06
(B) Give advantages and disadvantages of pulverized coal firing. 06
- Q-2 (A) Classify the coal burners and Explain in detail Cyclone burner. 05
(B) Enlist the types of Ash handling systems and Explain in detail Pneumatic Ash handling system. 06
- OR
- Q-2 (A) Explain in detail Cyclone separator. 05
(B) Give short note on "De-aeration". 06
- Q-3 **Attempt Any Three.** 12
(A) Give comparison between Fission and Fusion process.
(B) Give short note on "Injector type condenser".
(C) Write a short note on Ball and race mill.
(D) Enlist the component of Nuclear power plant.

SECTION – II

- Q-4 (A) Enlist the type of nuclear reactor and explain in detail Gas cooled reactor. 06
(B) Draught produced by chimney is 2 cm of water column. Temperature of flue gas is 3000 °C and ambient temperature is 330 °C. The flue gases formed per kg of fuel burnt is 24 kg. Neglect the losses and take the diameter of chimney as 1.75 m. Calculate: (1) Height of chimney in m and (2) Mass of flue gases flowing through the chimney in kg/min. 06

OR

- Q-4
- (A) Explain Benson boiler with figure, and state its advantages and disadvantages. 06
- (B) Give classification of superheaters and Explain innerdeck and overdeck superheater. 06
- Q-5
- (A) What are the factors for selecting the site selection? 05
- (B) What is FBC? Give advantages and disadvantages of FBC system. 06
- OR
- Q-5
- (A) Enlist the types of Mechanical draught and Explain induced draught in detail. 06
- (B) Give short note on "Surface condenser". 05
- Q-6 **Attempt Any Three.** 12
- (A) What are the pollutants from thermal power plant?
- (B) Explain briefly Natural draught cooling towers.
- (C) Give the comparison between Jet condenser and Surface condenser.
- (D) Comparison between high pressure boiler and conventional boiler.

END OF PAPER