Roll No……..….. **Total No. of Printed Pages: [01]**
Total No. of Questions: [09]

B. Tech. (EE) (Semester – 5th)
POWER PLANT ENGINEERING
Subject Code: BMECO1001
Paper ID: [18OE111501]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a) Classify the steam generators.
b) What are the various types of steam turbines?
c) Write any two factors for selection of site of a thermal power plant.
d) What is the function of a nozzle in steam turbines?
e) Define hydrology.
f) Give any two advantages of hydro power plants.
g) Name the various fuels used in gas turbines.
h) List out the components of diesel power plants.
i) Give any two applications of gas turbine power plants.
j) What do you mean by ash handling?

Section – B **(5 marks each)**

Q2. Explain Dalton's law of partial pressure.

Q3. Explain the construction and working of an electrostatic precipitator.

Q4. A hydro-electric plant has a catchment area of 50 square miles and the run-off is 70%. The average rain-fall is 60 inches and the head of 400 meters. Find the power available if the overall efficiency of the plant is 80%.

Q5. What are the advantages and disadvantages of nuclear power plants?

Q6. Discuss the fundamental concept of gas turbine control and monitoring system.

Section – C **(10 marks each)**

Q7. With the aid of neat diagram(s), explain the construction and working of Babcock and Wilcox boiler.

Q8. Compare Pressurized Water Reactor (PWR) and Boiling Water Reactor (BWR).

Q9. Write short note on:

(a) Combined operation of Hydro and Thermal Power Plants.
(b) Rankin cycle.