



# GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

(An Autonomous Institute of Government of Maharashtra)

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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **ME453A - (Elective II)-Power Plant Engineering**

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Maximum Marks : **60**

Duration : **3 Hrs**

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**Answer Key Submission Type:** Marking scheme without solution

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

- 1) Solve **all three** questions. [12]
  - a) Describe working of thermal power plant with the help of block diagram.
  - b) List any four advantages of air pre-heater used in power plants.
  - c) Describe water walls system used for boiler with help of figure.
- 2) Solve **any three** questions. [12]
  - a) State any four advantages of diesel power plants over thermal power plants.
  - b) Describe plant layout of high capacity diesel power plant with the help of figure.
  - c) Compare closed cycle with open cycle used in gas turbine.
  - d) How the gas turbine performance is affected with change in air temperature and site elevation?
- 3) Attempt **any two** of the following questions. [12]
  - a) Compare hydroelectric power plant with nuclear power plant on the basis of any six parameters.
  - b) State any three aspects require careful consideration while deciding general layout of a hydroelectric power plant. Describe any two layouts of low head layouts used for hydroelectric power plant with help of figures.
  - c) Describe elements of nuclear power plant.
- 4) Attempt **any three** questions. [12]
  - a) State any eight factors affecting bio-digestion.
  - b) Explain any four parameters that influence wind turbines output.
  - c) What are special features of liquid dominated flashed steam geothermal electric power plant?
  - d) Describe Ocean Tidal Energy Conversion (OTEC) energy conversion plant with the help of schematic diagram.
- 5) Attempt **any three** questions. [12]
  - a) State any two advantages and two applications of flat plate solar collector.
  - b) What is solar dryer? How they are used? State its applications.
  - c) How solar power is generated from photo voltaic cells?
  - d) Describe working of magneto-hydrodynamic generator with the help of diagram.

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