



GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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Name of Examination : **Winter 2020** - (Preview)

Course Code & Course Name : **EE405A - Inter-disciplinary Elective-Renewable Energy Syste**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

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 any three:
 - a) Define the following terms: [6]
 1. Clarity Index
 2. Solar Constant
 3. Angle of Latitude
 - b) Explain the construction and working of Parabolic Trough Collectors. [6]
 - c) State the advantages and dis-advantages of solar PV systems. [6]
 - d) Draw a neat sketch of photovoltaic cell and explain its principle of working. [6]
- 2) Solve any three:
 - a) A house owner decides to use a solar system with 3 CFLs (18W each) and 2 fans (60W each) for 8Hrs/day. Estimate the number of solar panels required to satisfy given daily load. Take solar panel rating as 40Wp. [6]
 - b) Summarise important aspects about Geothermal energy. [6]
 - c) Give the different types of geothermal power plant. [6]
 - d) Explain T-S diagram of a Vapor dominated geothermal power plant. [6]
- 3) Solve any three:
 - a) Define efficiency of wind turbine. How it depends on the ratio of blade tip speed to wind tip speed? [6]
 - b) Explain the scheme of grid connected unit for wind farms. [6]
 - c) What is the function of furnace and boiler in waste Incineration energy plant? [6]
 - d) What is the need of wood/wood waste Incineration co-generation plant? [6]
- 4) Solve the following:
 - a) Explain the phenomenon of light and energy. [6]

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