

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

Dec.-23-0449

EE-507 (Non-Conventional Electrical Power Generation)
B.Tech. 5th (CBCS)

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Section E is Compulsory. Attempt one question each from section A, B, C & D.

SECTION - A

1. (a) How is generated energy classified? Write comparison between the following:
 - (i) Renewable and Non-Renewable energy.
 - (ii) Commercial and Non-Commercial energy. (5)
- (b) Discuss the limitations of conventional energy. Explain the need of alternate energy sources. (5)
2. (a) Discuss the limitations of non-conventional sources of energy. (5)
- (b) What are the challenges and opportunities of non-conventional energy in Indian perspective? (5)

SECTION - B

3. (a) Explain the main components of a flat-plate Solar collector with a neat diagram. (5)
- (b) What are the factors to be considered in the drastic development of wind power? (5)

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4. (a) What is origin of wind and discuss how is wind energy generated? (5)
- (b) List the advantages of solar energy. Discuss in detail the scenario of solar energy in India. (5)

SECTION - C

5. How does biomass conversion take place? Name the various models of biogas plant and describe any one of them. (10)
6. Explain the process Photosynthesis. What are the necessary conditions for this process? Discuss in detail. (10)

SECTION - D

7. (a) Describe a geothermal field from which geothermal steam is obtained through hot springs. What are the prospects of geothermal energy in context to India? (5)
- (b) What are the merits and demerits of geothermal energy? (5)
8. (a) Explain development of Geothermal power in India and mention any three main applications of Geothermal energy in India. (5)
- (b) Enumerate various Geothermal sources of energy conversion in India. (5)

SECTION - E (Compulsory)

9. a. What are the limitations of renewable energy sources?
- b. Define solar constant.
- c. What are the possible sources of geothermal pollution?
- d. List the applications of solar energy.

[P.T.O.]

- e. What are the limitations of wind power energy?
- f. Write a short note on factor for consideration in site selection of a wind generator.
- g. Write difference between biomass and biogas.
- h. Explain solar cell fabrication.
- i. Explain demand side management in energy conversion.
- j. Write a short note on future of world energy. (10×2=20)