

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]

MAY-24-0449

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:** Attempt five questions in all, selecting one question each from Section A, B, C and D. Section E is compulsory.

#### SECTION-A

1. Explain the various energy sources and state the limitations of non-conventional energy sources. (10)
2. Define energy crisis and explain the various factors that can be helpful in solving the problems of energy crisis in India. (10)

#### SECTION-B

3. With the help of block diagram, explain the functions of various blocks of wind energy conversion system. (10)
4. What are solar collectors and their types? Enumerate various types of concentrating solar collectors. (10)

#### SECTION-C

5. What is meant by Bio-gas generator? How is biogas produced? Discuss in detail. (10)
6. Discuss anaerobic digestion in detail and explain the factors which affect bio-digestion. (10)

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#### SECTION-D

7. Enumerate various Geothermal sources of energy conversion. With neat sketch, explain Geothermal Power Plant. (10)
8. What are the advantages and disadvantages of Geothermal energy over other energy forms? Mention the applications of Geothermal energy in India. (10)

#### SECTION-E (Compulsory)

9. a) What is the difference between renewable and non-renewable energy?  
b) Explain basic principle of Wind energy.  
c) Define Solar constant.  
d. Write classification of WECS.  
e. Describe main applications of Wind energy.  
f. Define solar radiation.  
g. Define photosynthesis.  
h. What are the prospects of renewable energy in India?  
i. Can geothermal energy help counteract climate change?  
j. What are the applications of Biogas? (10×2=20)