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Printed Pages : 3

TOE-01

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 0901**

Roll No. 

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**B. Tech.**

(SEM. VII) EXAMINATION, 2008-09

**NON CONVENTIONAL ENERGY RESOURCES**

Time : 3 Hours]

[Total Marks : 100

1 Attempt any **four** parts of the following : 5×4=20

- (a) Mention the various non conventional energy resources. Give their relative merits and demerits.
- (b) Explain in brief any one non conventional renewable energy source.
- (c) What is solar cell power generation ? Give its advantages. What materials are used in a solar cell ?
- (d) Explain the layout of solar thermal power plant.
- (e) What are the limitations of solar cell power plant ?

2 Attempt any **four** parts of the following : 5×4=20

- (a) Explain the geothermal power generation. What environmental considerations are taken while generating electricity with this plant.

- (b) Explain the thermodynamics of geothermal energy conversion in detail.
- (c) Draw schematic diagram of an MHD power generating system. Explain its function.
- (d) Explain principle of working of various types of fuel cells. Give their limitations.
- (e) Discuss the choice of fuels required in the fuel cells. What are the advantages of fuel cells ?

3 Attempt any **two** parts of the following :  $10 \times 2 = 20$

- (a) Describe, with the help of a neat sketch, the working of biomass plant.
- (b) Explain in detail thermo-electrical and thermionic conversion principle. Give the limitation of these conversion.
- (c) What is scope of wind generation in India ? What are the criteria of site selection ? Explain momentum theory.

4 Explain any **two** parts of the following :  $10 \times 2 = 20$

- (a) Describe the wind power plant. What type of generator is used in wind power generation ? Give the advantages and disadvantages of this plant.
- (b) Explain how the tidal power is used to generate electricity. Give its limitations.
- (c) Explain the performance of OTEC. Give its theory and working principle.

5 Write in brief about any **two** :  $10 \times 2 = 20$

- (a) Scope of non conventional energy generation in India
- (b) MHD power cycle
- (c) Waste recycling plant.

