No. of Printed Pages : 4
Roll No. .....

221764A

6 th Sem. / Mechanical Engg., Mech
(Tool and Die Design)

Subject : Renewable Sources of Energy

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The basic unit of solar photovoltaic system is :

a) Solar panel b) Solar module

c) Solar array d) Solar cell

Q.2 Biomass energy is obtained from :

a) Fossil fuels

b) Radioactive elements

c) Organic matter

d) Sunlight

Q.3 Windmills convert :

a) Solar energy to mechanical energy

b) Wind energy to electrical energy

c) Hydro energy to wind energy

d) Mechanical energy to heat energy

Q.4 Fuel cells generate power through :

a) Combustion b) Nuclear fission

c) Electrochemical reactions

d) Solar heating

Q.5 The major gas in bio ges is :

a) Carbon dioxide b) Methane

c) Nitrogen d) Hydrogen

d) None of the above

Q.6 A solar cooker works on the principle of :

a) Reflection b) Refraction

c) Absorption d) Radiation

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 What is solar radiation ? (CO-2)

Q.8 Name the material commonly used in making solar cells. (CO-2)

Q.9 Write any two renewable sources of energy .(CO-1)

Q.10 Name any one biomass fuel. (CO-4)

Q.11 What is hydrothermal energy ? (CO-3)

Q.12 What is the main factor in selecting a wind site ? (CO-3)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain the classification of energy resources with suitable examples. (CO-1)

Q.14 Define the efficiency of a solar cell. What are the factors affecting it ? (CO-2)

Q.15 Write short notes on any two applications of solar energy . (CO-2)

Q.16 What are the environmental benefits and impacts of biogas usage ? (CO-4)

Q.17 Describe the various geothermal resources and their utilization methods . (CO-3)

Q.18 Differentiate between a battery and a fuel cell(CO-3)

Q.19 Explain the working of a grid-connected solar PV system. (CO-5)

Q.20 Explain the working of a floating drum biogas plant. (CO-4)

Q.21 Describe one geothermal resource utilization methods used for electric power generation. (CO-3)

Q.22 What is conversion efficiency in a fuel cell ? What factors affect it ? (CO-3)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Describe the components and working principle of a tidal power plant. (CO-3)

Q.24 Explain the construction, working, advantages, applications of Superconducting Magnet Energy Storage (SMES) systems . (CO-5)

Q.25 Explain the construction, working and applications of Flywheel Storage systems . (CO-5)