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Roll No. ....

**3rd Sem / Electrical  
Subject:- Non Conventional Sources of Energy**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 The nature of current developed in MHD generator is  
a) ac                      b) dc  
c) either dc or ac        d) none of the above

Q.2 Solar cell are made of  
a) aluminum              b) germanium  
c) Silicon                  d) Cadmium

Q.3 The fuel cell converts chemical energy into \_\_\_\_\_.  
a) mechanical energy    b) electrical energy  
c) heat energy            d) electronics energy

Q.4 Biogas consists of  
a) only methane  
b) methane and carbon dioxide with some impurities  
c) only ethane  
d) none of the above

Q.5 The drawback(s) of wind power plant is/are

- a) Unreliability
- b) high structural area requirements
- c) quite large finance required
- d) all of the above

Q.6 Petro geothermal systems are composed of hot dry rock with  
a) Petro-chemicals  
b) Large underground water  
c) no underground water  
d) dense gases

Q.7 In a fuel cell electrical energy is produced by  
a) reaction of hydrogen with oxygen  
b) thermal action  
c) combustion of fuel in absence of oxygen  
d) any of the above

Q.8 In hydro power plant \_\_\_\_\_ of water is converted into electricity.

- a) kinetic energy              b) potential energy
- c) both (a) and (b)          d) none of the above

Q.9 In hydro power plant \_\_\_\_\_ carries water from storage system to turbine.

- a) Tail race                  b) Surge tank
- c) penstock                  d) Spill way

Q.10 The major sources of power consumption in industrial sector is/are

- a) motors                      b) blowers
- c) pumps                      d) all of the above

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## **SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Define efficiency of solar cell.
- Q.12 Write the two examples of primary source of energy.
- Q.13 Expand WECS.
- Q.14 Give any two limitation of tidal power
- Q.15 Write two advantages of MHD
- Q.16 Name the different types of solar cooker.
- Q.17 Write the one difference between micro and mini hydro power plant
- Q.18 Give the name of different types of fuel cell.
- Q.19 Draw V-I characteristics of solar cell.
- Q.20 Define ocean energy.

## **SECTION-C**

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain the future prospect of renewable source of energy.
- Q.22 Explain fermentation and pyrolysis method of biomass conversion.
- Q.23 Explain the working of solar water heater.
- Q.24 Classify the different type of gasifier and explain any one of them.
- Q.25 Explain the function of components used in wind power plant.
- Q.26 Explain the working of vapour dominated geothermal system.

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- Q.27 Write the advantages and disadvantages of MHD power generation.
- Q.28 Draw and explain the working of open cycle OTEC system.
- Q.29 Explain the working of power generation using mini hydro power plant.
- Q.30 Write the difference between solar pond and solar still.
- Q.31 Explain the operating principle of fuel cell.
- Q.32 Explain the construction and working of photovoltaic cell.
- Q.33 Explain the function of flywheel energy storage device.
- Q.34 Enlist the application of fuel cell.
- Q.35 Write a short note on Tidal power plant.

## **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Draw and explain working of fixed dome type bio-gas plant with the help of circuit diagram.
- Q.37 Explain the construction and working of solar water heater with suitable diagram. Also write its advantages and disadvantages.
- Q.38 Explain with the help of neat diagram, the working principle of MHD generation.

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