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**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

(1)

180932

- 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

(2)

180932

### 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 bio mass 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.

(3)

180932

- 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.

(1960)

(4)

180932