

- Q.26 Explain the types of tariff structure for electricity.(CO-4)  
 Q.27 Compare renewable energy and non-renewable energy. (CO-2)  
 Q.28 Explain internal audit checklist with an example. (CO-6)  
 Q.29 Explain MHD convertor. (CO-2)  
 Q.30 Explain the principle of obtaining electricity from solar energy. (CO-3)  
 Q.31 Write the advantages of renewable energy sources. (CO-2)  
 Q.32 How energy is conserved by improving load factor. (CO-4)  
 Q.33 Write a short note on present energy scenario in India in domestic sector.  
 Q.34 Explain different energy storage methods. (CO-5)  
 Q.35 Explain working principle of fuel cell. (CO-3)

### **SECTION-D**

**Note :** Long Answer type question. Attempt any two questions. (2x10=20)

- Q.36 Explain energy efficient technologies in domestic and industrial sectors with two examples from each sector. (CO-1)  
 Q.37 Discuss the ten step methodology for detailed energy audit. (CO-6)  
 Q.38 Write short note on:  
   a) Maximum power point tracking. (CO-3)  
   b) Biomass energy. (CO-2)

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**4th Sem / Instrumentation & Control**  
**Subject : Principle of Energy Management/**  
**Energy Sources & Mgmt. Of Elect. Energy**

**Time : 3 Hrs.**

**M.M. : 100**

### **SECTION-A**

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

- Q.1 Energy management is a key component of (CO-4)  
   a) Water management b) Nitrogen management  
   c) Carbon management d) None of these  
 Q.2 A Solar photovoltaic system converts light energy into \_\_\_\_\_. (CO-3)  
   a) Heat energy        b) Electrical energy  
   c) Thermal energy    d) Sound energy  
 Q.3 The main objective of energy management is to (CO-4)  
   a) Minimum environmental effects  
   b) Minimize energy cost  
   c) Maintain optimum energy procurement & ultization  
   d) All of these  
 Q.4 A wind turbine designed to come into operation at a minimum wind speed which is called \_\_\_\_\_. (CO-2)  
   a) Cut in velocity    b) Cut out velocity  
   c) Upwind location   d) None of these

- Q.5** If power factor is less than unity then it will result in (CO-4)
- More copper losses
  - Large kVA rating of equipment
  - Greater conductor size
  - All of these
- Q.6** The disadvantage(s) of renewable energy sources is/are (CO-2)
- Availability in low energy densities
  - Lack of dependability
  - Intermittency
  - All of the above
- Q.7** The capacity of a battery is expressed in terms of (CO-5)
- Current rating
  - Ampere hour rating
  - Voltage rating
  - None of these
- Q.8** The various instrument required during audit need to be (CO-6)
- Easy to operate
  - Easy to carry
  - Inexpensive
  - All of above
- Q.9** Cells are connected in parallel to (CO-5)
- Increase the efficiency
  - Increase the voltage output
  - Increase the current capacity
  - None of these
- Q.10** The standard emf is \_\_\_\_\_ for hydrogen-oxygen fuel cells. (CO-2)
- 3.96V
  - 0.58V
  - 1.23V
  - 2.54V

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**SECTION-B**

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11** The nature of the current developed in MHD generator is AC. (True/False) (CO-2)
- Q.12** OTEC stands for \_\_\_\_\_ factor. (CO-2)
- Q.13** Capacitors banks are used to \_\_\_\_\_ (increase / decrease) the value of power factor. (CO-4)
- Q.14** The maximum value of power factor is \_\_\_. (CO-4)
- Q.15** Chemical energy is converted to \_\_\_\_\_ energy by a fuel cell. (CO-2)
- Q.16** Primary energy sources are those that are either found or stored in nature. (True/False) (CO-2)
- Q.17** Biomass is a renewable energy source. (CO-2)
- Q.18** MHD stands for \_\_\_\_\_. (CO-2)
- Q.19** Energy conservation act was formed in the year \_\_\_\_\_. (CO-4)
- Q.20** Cells are connected in \_\_\_\_\_ (Series/ parallel) to increase the current capacity. (CO-3)

**SECTION-C**

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21** Define energy conservation. Also write its importance. (CO-5)
- Q.22** Explain need of energy storage. (CO-5)
- Q.23** Explain the principle of ocean thermal energy conversion system. (CO-2)
- Q.24** Write a short note on tidal energy. (CO-2)
- Q.25** What is need of energy audit? (CO-2)

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