

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI- 86**  
**(For candidates admitted during the academic year 2016–17 & thereafter)**

**SUBJECT CODE : 16VS/VM/ET26**

**B. Voc. DEGREE EXAMINATION, APRIL 2018**  
**SUSTAINABLE ENERGY MANAGEMENT**  
**SECOND SEMESTER**

**COURSE : MAJOR CORE**

**PAPER : ENERGY CONVERSION TECHNIQUES (THEORY)**

**TIME : 6 HOURS**

**MAX. MARKS : 100**

**(Theory: 50marks +Practical: 50 marks)**

**SECTION – A**

**ANSWER ALL QUESTIONS**

**(20x1 = 20)**

**I. Choose the correct Answer:**

1. The efficiency of energy conversion depends on the laws of  
a) friction                      b) motion                      c) energy                      d) thermodynamics
2. \_\_\_\_\_ is a method of separating elements by passing current through compounds  
a) catalysis                      b) electrolysis                      c) photo catalysis                      d) photo synthesis
3. In thermo magnetic motors \_\_\_\_\_ materials are heated above Curie point  
a) smart                      b) ferro magnetic                      c) para magnetic                      d) dia magnetic
4. The battery life time is increased at  
a) low temperature                      b) high temperature                      c) low pressure                      d) high pressure
5. Thermoelectric generators covert heat energy into \_\_\_\_\_ energy.  
a) chemical                      b) electrical                      c) mechanical                      d) potential
6. All ferro electric materials are  
a) dielectric                      b) trielectric                      c) quadroelectric                      d) pyroelectric
7. Storage Utilization factor is defined as  
a) energy extracted / energy stored                      b) energy stored / energy extracted  
c) energy saved / energy stored                      d) energy stored / energy stored
8. The chemical energy can be transported by  
a) fibres                      b) cables                      c) pipe lines                      d) wires

**II. Fill in the Blanks:**

9. Heat flows \_\_\_\_\_ from higher temperature to lower temperature.
10. The principal cause of irreversibility are \_\_\_\_\_ and \_\_\_\_\_.
11. Thermo electric refrigerators use the principle of \_\_\_\_\_ effect.
12. The two types of dryers are \_\_\_\_\_ and \_\_\_\_\_.
13. QDSSC is \_\_\_\_\_.
14. Mercury batteries are \_\_\_\_\_ batteries
15. The main parameter in CAES is \_\_\_\_\_.
16. The bio reactors are made up of \_\_\_\_\_.

**III. Answer in a sentence or two:**

17. Explain the term photo catalysis.
18. Give any one application of lead acid battery.
19. What is Nernst effect?
20. Where is energy stored in SMES ?

**SECTION – B****Answer any SIX questions:****(6x3= 18)**

21. How was energy harnessed in early days ?
22. Explain the two types of nuclear reactors
23. What is the process involved in Hydrogen generation?
24. Define reversible and irreversible processes and explain.
25. With a neat diagram explain the parts of fuel cells
26. What are the different energy storage systems?
27. Differentiate between super capacitors and pseudo capacitors
28. How is Solar energy converted into heat energy?
29. Give any three parameters associated with a battery.

**SECTION – C****Answer any TWO questions:****(2x6 = 12)**

30. With a neat diagram explain the principle, construction and working of thermo electric generator.
31. Explain the working of Dye Sensitized Solar Cells.
32. What is a battery? Explain Alkaline and Zinc – Carbon batteries.
33. Give the block diagram of Energy Storage in continuous and discontinuous supply system.

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