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

SUBJECT CODE: 16VS/VM/SE16

B.Voc. DEGREE EXAMINATION, NOVEMBER 2018
SUSTAINABLE ENERGY MANAGEMENT
FIRST SEMESTER

COURSE : MAJOR CORE
PAPER : SOLAR ENERGY
TIME : 6 HOURS **MAX.MARKS:100**
(Theory: 50 marks + Practical: 50 marks)

SECTION- A
ANSWER ALL QUESTIONS (20 X 1 = 20)

CHOOSE THE CORRECT ANSWER:

1. Most widely used solar material is,
   a) Arsenic b) Cadmium c) Silicon d) Steel
2. The function of a solar collector is to convert solar energy into,
   a) electricity b) radiation c) thermal energy d) mechanical energy
3. For satellites the source of energy is,
   a) solar cell b) fuel cell c) Edison cell d) Hydrogen cell
4. The efficiency of the solar cell is about,
   a) 25 % b) 15 % c) 40 % d) 60 %
5. A module in a solar panel refers to the arrangement of solar cells in,
   a) series aloe b) parallel alone c) Series & parallel d) none of the above
6. The output of solar cell is of the order of,
   a) 10W b) 1W c) 100W d) 0.1W
7. Direct Solar energy is used for,
   a) heating b) drying c) distillation d) all the above
8. The collection efficiency of flat plate collector can be improved by,
   a) selective coating on the plate b) evacuating space above absorber plate
   c) both a) and b) d) neither a) nor b)
9. In paraboloid dish concept, the concentrator tracks the sun by rotating about,
   a) one axis b) two axes c) three axes d) none
10. A liquid flat plate collector located in the northern hemisphere is usually held tilted in a fixed position facing,
    a) East b) West c) North d) South

..2

FILL IN THE BLANKS:

11. Photovoltaic solar cell converts solar energy in to _____.
12. The value of Solar constant is, _____.
13. Reflecting mirrors used for exploiting solar energy are called _____.
14. The efficiency of various collectors _____with _____ temperature.
15. Flat plat collector is used for _____ temperature applications.

STATE WHETHER TRUE OR FALSE:

16. The amount of solar radiation received by a part of Earth's surface is always constant.
17. Sun path chart given solar altitude and solar azimuth for a place for any time.
18. Solar trackers are used to increase the angle of incidence of Sun light on solar panels.
19. Solar cells can be made from plastic.
20. Solar panels produce DC power.

SECTION B

ANSWER ANY SIX QUESTIONS: (6×3=18)

21. Give the historical perspective of solar energy.
22. What are the obstacles for using solar energy?
23. Write a short note on solar panels.
24. Mention the principle of photovoltaic.
25. What are solar concentrating collectors?
26. What is solar mapping?
27. Write a note on devices which convert solar energy in to heat.
28. What is solar thermo mechanical refrigeration system?
29. Write a note on solar greenhouse.
30. What is solar pond?

SECTION C

ANSWER ANY TWO QUESTIONS: (2×6=12)

31. Explain the nature of solar radiation and its effect on Earth's surface.
32. Elaborate on the various safety parameters in solar PV installations.
33. Explain sun tracking mechanisms.
34. Describe a solar cooker. How is the performance of the solar cookers tested?

****