

SUBJECT CODE: 16VS/VM/SE16
B.Voc. DEGREE EXAMINATION, NOVEMBER 2019
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:

- Absorption of Solar radiations at earth's surface occur due to presence of,
(a) Ozone (b) water vapour (c) Carbon di-oxide (d) all the above
- The solar collector for low temperature use is,
(a) flat plate (b) parabolic (c) dish (d) concentrator
- The disadvantages of solar energy is (are),
(a) not reliable (b) not constant (c) absent in night (d) all the above
- The infrared radiation present in Sun's rays is in the form of,
(a) visible light (b) heat (c) electricity (d) none
- The efficiency of solar panel does not depend on,
(a) latitude (b) the tilt angle (c) incident light (d) quality of cell
- Solar energy can be stored for long duration in the form of
(a) electric energy (b) light energy (c) wind energy (d) heat energy
- Solar pond,
(a) is a large scale storagesystem (b) stores energy in the form of heat
(c) appears as a salty lake (d) all the above
- In photovoltaic effect, solar energy is converted into,
(a) heat (b) electricity (c) light (d) none
- The output of solar cell is in the order of,
(a) 1 W (b) 0.5 W (c) 1.5 W (d) 2 W
- Heat from the solar energy can be used for,
(a) heating a liquid (b) heating air (c) cooking (d) all the above

FILL IN THE BLANKS:

11. _____ is the ultimate source of energy for earth.
12. In a battery energy is stored in the form of _____.
13. A solar cell is made up of _____ material.
14. Solar distillation unit converts _____ water in to _____ water.
15. _____ % of solar energy is reflected back earth.

ANSWER IN A SENTENCE OR TWO

16. What is Sun path chart?
17. What is photovoltaic effect?
18. What is a solar concentrator?
19. What is solar greenhouse?
20. What Rydberg's constant

SECTION B**ANSWER ANY SIX QUESTIONS:****(6×3=18)**

21. What are the obstacles for using solar energy?
22. Mention the nature of solar radiation.
23. Brief on Physics principle involved in photovoltaic effect.
24. Give the structure of solar collectors for heating liquids.
25. How is the performance of solar cooker tested?
26. What is solar pond?
27. Brief on solar energy spectrum.
28. Give the block diagram of stand alone PV system and explain
29. Explain the working of a solar distillation unit with a neat sketch
30. Elucidate the band structure of extrinsic semiconductors.

SECTION C**ANSWER ANY TWO QUESTIONS:****(2×6=12)**

31. Explain the work safety for solar PV installation.
32. Describe the working of sun tracking mechanism.
33. Explain the solar thermo-mechanical refrigeration system.
34. Write a short note on the V-I characteristics of Solar photovoltaic cell.
