

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

SUBJECT CODE : 16VS/VM/PV26

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

COURSE : MAJOR CORE

PAPER : FUNDAMENTALS OF PHOTOVOLTAICS

TIME : 5 HOURS

MAX. MARKS : 100

(Theory: 50marks +Practical: 50 marks)

SECTION – A

ANSWER ALL QUESTIONS

(20 X 1 = 20)

I. Choose the correct Answer:

1. Photovoltaic Cells are made of
(a) steel (b) Silicon (c) plastic (d) Aluminum
2. The dark current is the current flowing when this number of photons fall.
(a) maximum (b) minimum (c) zero (d) average
3. An inverter converts
(a) ac in to dc (b) dc in to ac (c) ac in to ac (d) dc in to dc
4. Net power meter is a
(a) storage device (b) measuring device (c) control device (d) monitoring device
5. The shading effect depends on
(a) the row length & height (b) the tilt angle (c) the latitude (d) all of these
6. A module in a solar panel refers to
(a) Series arrangement of solar cells (b) Parallel arrangement of solar cells
(c) Series and parallel arrangement of solar cells (d) None of the above.
7. Photovoltaic system is used in
(a) air crafts (b) buildings (c) satellites (d) all the above
8. Solar radiation flux is usually measured with the help of a
(a) Anemometer (b) Pyranometer (c) Sunshine recorder (d) all the above
9. The ratio of the beam radiation flux falling on a tilted surface to that falling on a horizontal surface is called the
(a) Radiation shape factor (b) Tilt factor (c) Slope (d) None of the above
10. Lines which bear more solar energy in tropical zone are called
(a) longitudes (b) latitudes (c) altitude (d) tropics

II. Fill in the Blanks:

11. The number of photon decides _____ of light.
12. Hybrid referred to generation energy from at least _____ number of sources.
13. Ideally, PV arrays should be installed in a _____ free location.
14. The average distance between sun and earth is _____ unit.
15. Photovoltaic energy is the conversion of sunlight into _____.

III. Answer in a sentence or two:

16. What is photoconductivity?
17. What is hetro- junction?
17. What is a utility grid?
19. What is reliability of a solar panel?
20. What does the efficiency of solar panel mean?

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

21. What is figure of merit?
22. Explain the working of a photoconductive cell.
23. Define on-grid and off-grid systems.
24. Write short notes on inverters.
25. Mention the shadows that affect PV system.
26. Write a short note on solar cars
27. How are PV systems find application is satellites?

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

21. Explain the four characteristics of different types of metal semiconductor junction.
22. Write short notes on (i) charge control and (ii) net power meters.
23. Write the steps to design of a solar PV systems for home lighting and other applications.
24. Write a short note on solar aircraft.
