

167

- a) 20-45%
- b) 20-40%
- c) 15-20%
- d) None of the above

**SECTION -B (ESSAY TYPE QUESTIONS)**  
(5x10=50 Marks)

1. Explain PV characteristics of PV cell and draw its equivalent circuit
2. Explain the difference between PV cell, PV module, PV panel and PV array with examples.
3. Explain the effect of various parameters on the performance of PV collector.
4. Explain the steps for PV design and PV plant installation.
5. What is the need of buck-boost converter in PV system and how it supports?
6. What is solar PV system design? What is meant by grid connected PV system?
7. Explain classification of batteries and give the right battery to PV system and explain, why?
8. How PV system can be able to generate thermal energy? Explain any two hybrid system in detail.

===END OF PAPER===

2112E003

**BACHELOR OF VOCATION**  
**Solar Technology**  
**Subject: MOOC Course (Design of Photovoltaic Systems)**  
**Subject Code: OET-701**  
**Semester: Fifth**  
**December 2021**  
**Theory (External): 70 Marks**  
**Time: 03 Hours**

**Instructions to the Students**

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 2 mark.
3. Section B comprises 8 essay-type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number									

SECTION -A (SHORT/OBJECTIVE TYPE QUESTIONS)  
(10x2=20 Marks)

158

A. The efficiency of a solar cell may be in the range \_\_\_\_\_

- a) 2 to 5%
- b) 10 to 15%
- c) 30 to 40%
- d) 70 to 80%

B. A solar cell works on the principle of \_\_\_\_\_

- a) Photo electricity
- b) Photographic camera
- c) Photovoltaic conversions
- d) Photosynthesis

C. The efficiency of the solar cell is about \_\_\_\_\_

- a) 25 %
- b) 15 %
- c) 40 %
- d) 60 %

D. 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

E. The solar or photo voltaic cell converts \_\_\_\_\_

- a) Chemical energy to electrical energy

- b) Solar radiation into electrical energy
- c) Solar radiation into thermal energy
- d) Thermal energy into electrical energy

F. The voltage of solar cells is:

- a) 0.5 to 1 V
- b) 1 to 2 V
- c) 2 to 3 V
- d) 4 to 5 V

G. The output of solar cells is of the order of \_\_\_\_\_

- a) 0.5 watts
- b) 1.0 watts
- c) 5.0 watts
- d) 10 watts

H. A solar cell is a p - n Junction operating in \_\_\_\_\_

- a) Reverse bias condition
- b) Unbiased condition
- c) Forward bias condition
- d) in both forward and reverse bias condition

I. Which of the following area is preferred for solar power plants \_\_\_\_\_

- a) Coastal areas
- b) Hot arid zones
- c) Mountain tops
- d) High rainfall zones

J. The efficiency achieved from photovoltaic is almost \_\_\_\_\_