

210198

**BACHELOR OF VOCATION**

**Solar Technology**

**Subject: Fundamentals of Solar Energy & Plumbing Engg.**

**Subject Code: ST501**

**Semester: First**

**January 2021**

**Theory (External): 35 Marks**

**Time: 03 Hours**

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**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 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 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**

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**SECTION -A (SHORT/OBJECTIVE TYPE QUESTIONS)**  
**(10x1=10 Marks)**

- A. Define the applications of pipe nipples in the manufacturing industries.
- B. Define the applications of weld cap.
- C. Define Photoelectric effect.
- D. Discuss the applications of Compressed air in manufacturing industries.
- E. Discuss the function of Rechargeable batteries along with applications.
- F. Define the concept of Thermal energy storage with industrial applications.
- G. Define the concept of orientation of pipes.
- H. Define the concept of couplings.
- I. Define the applications of flanged fittings.
- J. Define the concept of Chemical energy storage.

**SECTION -B (ESSAY TYPE QUESTIONS)**  
**(5x5=25 Marks)**

1. Describe the Renewable energy sources with examples and Industrial applications.
2. Drive and explain Stefan - Boltzmann law and also mention its applications.
3. Describe types of solar energy collectors with neat diagrams and applications.
4. Explain the working of solar water heating systems with neat diagram and applications.
5. Describe the Solar photovoltaic System with neat diagram and applications in manufacturing industries.
6. Explain Structure of a solar cell with suitable applications.
7. Differentiate between Soldering and Brazing techniques of welding with neat diagram and applications.
8. Explain the Type of Fittings with neat diagram and also mention the industrial applications.

**==END OF PAPER==**

