

2112E044

**BACHELOR OF VOCATION**  
**Solar Technology**  
**Subject: Energy Storage Systems**  
**Subject Code: ST-606**  
**Semester: Third**  
**December 2021**  
**Theory (External): 35 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 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 labeled

**Roll Number**

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===END OF PAPER===

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

- A. The amount of electrical energy that can be generated by a hydroelectric power plant depends upon.....
- a) Head of water
  - b) Quantity of water
  - c) Specific weight of water
  - d) None
- B. Energy is stored in a flywheel in the form of
- a) Heat energy
  - b) Solar energy
  - c) Kinetic energy
  - d) Potential energy
- C. What is the full form of CAES system.....
- D. Heat is transferred in Fluid by .....
- a) Conduction
  - b) Convection
  - c) Radiation
  - d) None of these
- E. Overall coefficient of heat transfer is used in problem of.....
- F. Thermal conductivity of Cu is ..... when we increasing the temperature.
- G. What is the formula of Newton's law of cooling.....

- H. The emissive power of a body depends upon its
- a) Temperature
  - b) Wave length
  - c) Physical nature
  - d) All of the above
- I. Main objective of energy storage?
- a) Offset adverse effect of fluctuating demand
  - b) Assure steady output from existing plants
  - c) Meet peak demand on short notice
  - d) All of the above
- J. What is the formula of Fourier's law of heat conduction.....?

**SECTION –B (ESSAY TYPE QUESTIONS)**

(5x5=25 Marks)

1. How space limitations can be resolved in a building using TES contribution?
2. Briefly describe the compressed air energy storage and its applications.
3. Write a short notes on: (a) TES system (b) Pumped hydro storage system
4. A black body of total area  $0.055 \text{ m}^2$  is completely enclosed in a space bounded by 5 cm thick walls. The walls have a surface area  $0.5 \text{ m}^2$