

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)**

**CLASS: BE
BRANCH: CHEMICAL**

**SEMESTER: V
SESSION : MO/2018**

SUBJECT : CL5003 ENERGY ENGINEERING

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
 2. Candidates may attempt for all 30 marks.
 3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. The missing data, if any, may be assumed suitably.
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- Q1 (a) Discuss the important uses of solar energy. [2]
(b) Describe the construction and working of parabolic troughs. [3]
- Q2 (a) Discuss the techniques of solar energy storage. [2]
(b) Describe the construction and working of fluidised catalytic cracking. [3]
- Q3 (a) Write a short note on solar cell array. [2]
(b) Explain the construction and working of any fuel cell. [3]
- Q4 (a) Describe the working and principle of open cycle Ocean thermal energy conversion. [2]
(b) What are the major constituents of Biogas? What are the raw materials used for making biogas. [3]
- Q5 (a) Describe visbreaking process with diagram. [2]
(b) Describe the construction & working of a floating drum type biogas plant? [3]
- Q6 (a) Describe anaerobic digester with neat sketch. [2]
(b) Sketch the diagram of a Horizontal axis wind turbine and explain the functions of its main components. [3]

::: 11/09/2018 :::E