

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

**CLASS: BE
BRANCH: CHEMICAL**

**SEMESTER: V
SESSION : MO/2019**

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 different types of non-concentrating solar collectors. [2]
(b) Explain the working of solar pond with diagram. [3]
- Q2 (a) Explain the design and principle of alkaline fuel cell. [2]
(b) Explain the working of solar thermal power plants with diagram. [3]
- Q3 (a) Explain the working of floating drum type biogas plant with diagram. [2]
(b) Explain the working of horizontal axis wind turbine with diagram. [3]
- Q4 (a) Explain the working of vapour dominated system with diagram. [2]
(b) Explain the continuous type biogas plant with a diagram. [3]
- Q5 (a) Differentiate between catalytic cracking and hydrocracking process carried out in petroleum industry. [2]
(b) Explain the visbreaking process with neat diagram. [3]
- Q6 (a) Explain the major constituent of petroleum/crude oil. [2]
(b) Explain the FCC with neat diagram. [3]

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