

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

**CLASS: IMSC  
BRANCH: FOOD TECHNOLOGY**

**SEMESTER: III  
SESSION: MO/2022**

**SUBJECT: FT202 INTRODUCTION TO FOOD ENGINEERING**

**TIME: 2 HOURS**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The total marks of the questions are 25.
  2. Candidates attempt for all 25 marks.
  3. Before attempting the question paper, be sure that you have got the correct question paper.
  4. The missing data, if any, may be assumed suitably.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|---|-----|------|----|
| Q1     | Soyabean seed are extracted with hexane in batch Extracter. The flaked seed contain 18.6% oil, 69.0% solid and 12.4 % moisture. At the end of the process, cake of milk is separated from the hexane oil mixture. The cake analysis yield 0.8% oil, 87.7% solid and 11% moisture. Find the % recovery of oil. All % are by wt only. | [5] | CO-2 | L3 |
| Q2     | A single effect evaporator is fed with 10000 kg / h of weak liquor containing 15 % caustic by weight and is concentrated to get thick liquor containing 40 % by weight caustic. Determine: kg / h of water evaporated   | [5] | CO-2 | L3 |
| Q3     | Briefly describe the terms:<br>Recycling, Bypass and Purge streams.   | [5] | CO-2 | L1 |
| Q4     | Write Short note on:<br>a) Limiting reactant, b) Percent excess reactant, c) Percent conversion<br>d) stoichiometry e) Yield of reaction.   | [5] | CO-2 | L1 |
| Q5 (a) | Thermal conductivity of magnesite at 600°C is $6.7 \times 10^{-3}$ cal/cm s °C. Find its value both the English and the SI unit.  | [3] | CO-1 | L3 |
| (b)    | Define two dimensionless number in Food Engineering practice.   | [2] | CO-1 | L1 |

:::::: 27/09/2022 M :::::