



INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR
Mid-Autumn Semester 2023-24

Date of Examination : _____ Session (FN/AN) _____ Duration 2 hrs
Subject No. : EP 60044 Subject Name : Frugal Engineering
Department/Center/School : Rajendra Mishra School of Engineering Entrepreneurship
Specific charts, graph paper, log book etc., required _____
Special Instructions (if any) : _____

1. Elucidate the salient elements associated with 'unique value proposition (UVP)' in Frugal Innovation [5]
2. Illustrate the building blocks, 'frugal engineering' and 'need-based ideation' in the conceptual framework for reverse innovation. [4]
3. a) Give a run down on the features quintessential to frugal design (FD) approach.
b) Characterize the Principles in Frugal Design. [3 + 5]
4. Expound the steps of a widely adopted Design Thinking Model [5]
5. (a) Discuss an example of engineered 'medical/ healthcare' product/ system, delineating the features and attributes that makes it 'frugal'.
(b) Give an account of a non-healthcare/ medical product, underlining the features and aspects qualifying the system as 'frugal' [4+4]