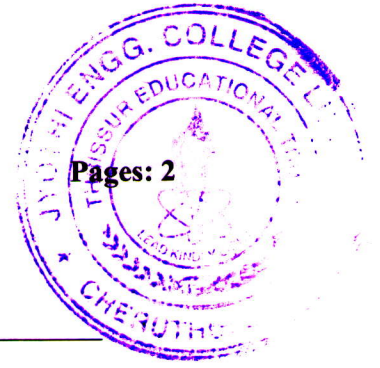


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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER B. TECH DEGREE EXAMINATION (R & S), MAY 2019

Course Code: BE102

Course Name: DESIGN AND ENGINEERING

Max. Marks: 50

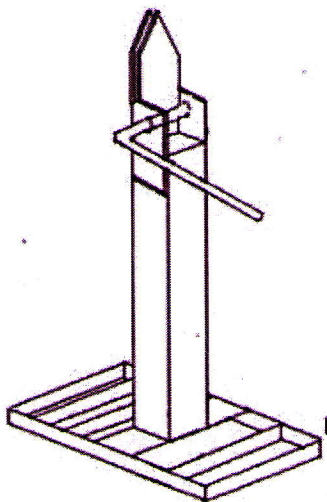
Duration: 2 Hours

Instructions: This is an open book examination and the students are permitted to use maximum of 4 text books, class notes, own notes, earlier assignments; but access to mobile phone and internet is not allowed. Exchange of text books/notes not permitted.

PART A

Answer any 6 questions, each carries 5 marks

- | | Marks |
|--|-------|
| 1 List the objectives and constrains for designing a “lunch box” for school students. | (5) |
| 2 A car manufacturer wants to introduce a new electric car in the market. Prepare a survey questionnaire to collect feedback from the market to get their need and to find out the feasibility of the project. | (5) |
| 3 Imagine that you own a pizza shop. Prepare a house of quality for your product using the concept of Quality Function Deployment(QFD) | (5) |
| 4 Prepare the objective tree for the product coconut peeling machine given below. | |



- | | | |
|---|--|-----|
| 5 | What are the factors to be considered for the selection of material for an | (5) |
|---|--|-----|

automobile 'silencer'? justify the answers.

- 6 List the standard items used for the manufacturing of a two wheeler-bike. (5)
7. What are the different "intellectual Property rights" (IPR) available for (i) A story written by you, (ii) An article you have invented which you would be marketing. (5)
- 8 What are the aesthetic and ergonomic factors to be considered while designing the driver's seat for a passenger car? (5)

PART B

Answer any two full questions each full question carry 10 marks.

- 9 a) Design a school bag for small school children. (5)
b) Explain any 5 'designs for X' that could be used in the design for school bag. (5)
- 10 a) Design a length adjustable mop to clean ceiling fan. (5)
b) What are the objectives and constraints of that design? (5)
- 11 a) What is meant by modular design? (3)
b) Apply the modular design concept for a product- Bicycle. (7)

