Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER B. TECH DEGREE EXAMINATION (R & S), MAY 2019
Course Code: BE102
Course Name: DESIGN AND ENGINEERING

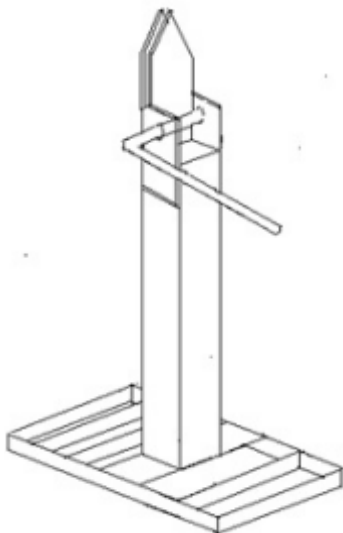Max. Marks: 50   Duration: 2 Hours

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)

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)

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