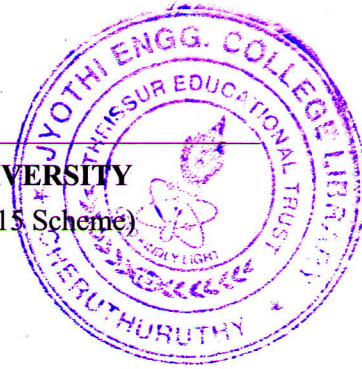


Reg No.: _____

00000BE102121804 Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech examinations (S) September 2020 S1/S2 (2015 Scheme)



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

- 1 You are asked to design a house by your client. Identify and list any three objectives and two constraints of your design 5
- 2 Suggest any two materials used for the construction of a safe ladder. State the advantages and disadvantages of each 5
- 3 Name two products for which modular design is observed. Show the modular design with the help of drawings 5
- 4 Suggest design changes in a conventional stapler that can add value to it 5
- 5 Explain how the concept of User Centred Design can be applied in the design of a laptop 5
- 6 Prepare a questionnaire for a market survey in connection with the design of a pedestal fan. 5
- 7 You are handed over a project to develop an energy efficient solar panel. Explain the need and give the problem statement. Also list the science, engineering and technology aspects of your design. 5
- 8 Sketch the detailed design of a pen. Suggest one value addition 5

PART B

Answer any two questions. Each carries 10 marks

- 9 Imagine that you have designed a mixer grinder

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- a. List any two standard parts 2
- b. Design an attractive package 3
- c. Prepare a questionnaire for design feed back 5
- 10 List out the five 'Design for X' that you can include in the design of a bicycle. 10
Explain each.
- 11 Illustrate with the help of a sketch, a method to collect and reuse various types of 10
waste water from your house with the help of intelligent and autonomous devices
