
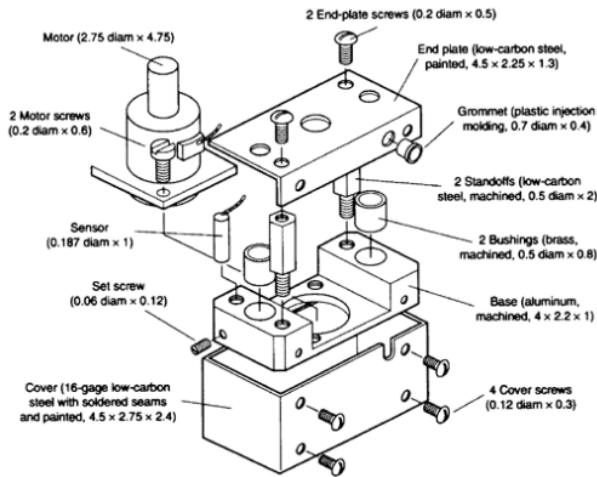


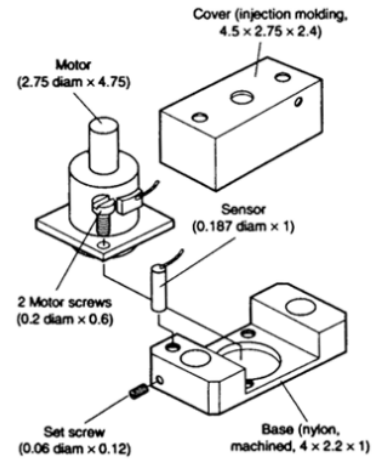
Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2023			
Course: Semester: VIII		Time : 03 hrs.	
Program: B.Tech. Mechanical		Max. Marks: 100	
Course Code: Design for Manufacturing & Assembly (MECH 4008P)			
Instructions: All the questions are compulsory and assume any missing data.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Describe the execution of DFM.	4	CO1
Q 2	Differentiate between DFM and DFA.	4	CO1
Q 3	Discuss the principles of DFMA?	4	CO1
Q 4	Discuss the role of CAD & CAE in DFMA.	4	CO1
Q 5	Discuss the attributes of self aligning and self locating parts.	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	Discuss the three roots of DFMA?	10	CO2
Q 7	Discuss the various attributes to design a product for reparability with suitable examples.	10	CO2
Q 8	Discuss the advantages and disadvantages of hot & cold working process from DFMA point of view. OR Discuss the advantages and disadvantages of forging process over casting, with suitable examples.	10	CO3
Q 9	Discuss the various considerations need to be taken care while designing a product by forging process.	10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q 10	Perform the comparative DFA analysis of the both the designs and answer the following questions:	20	CO4

1. How did the design team implement DFMA principles in the product design?
2. What specific changes were made to the product design to simplify manufacturing and assembly?
3. How did these changes impact the cost of manufacturing and assembly?

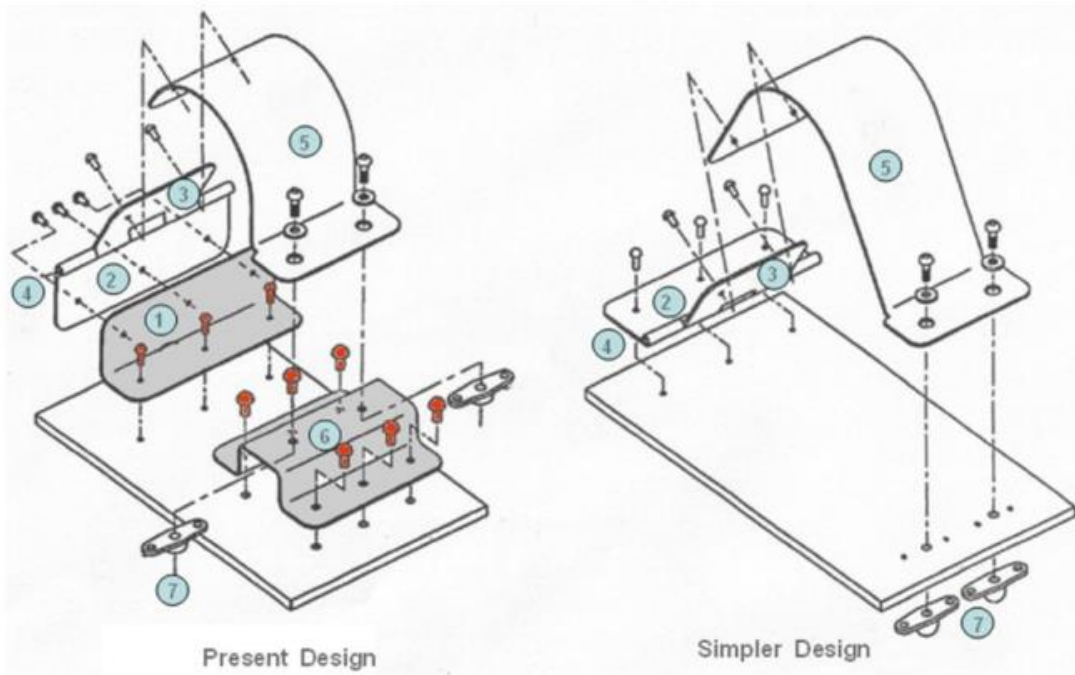
Initial design



Redesign



OR



Q 11

Analyze the function of QFD with reference to a smartphone/laptop and explain its various stages.

20

CO3