
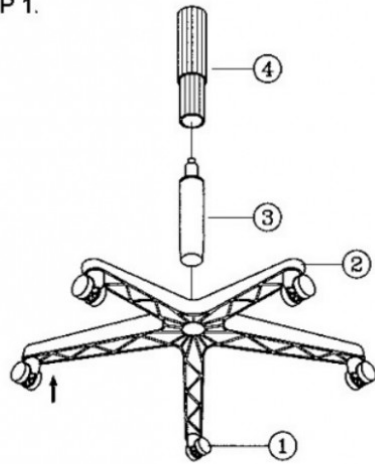


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2022			
Course: Semester: VIII		Time : 03 hrs.	
Program: B.Tech. Mechanical		Max. Marks: 100	
Course Code: Design for Manufacturing & Assembly (MECH 4008)			
Instructions: All the questions are compulsory and assume any missing data.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Describe the execution of DFM.	4	CO1
Q 2	Discuss the differences between DFM and DFA?	4	CO1
Q 3	Discuss the principles of DFMA?	4	CO1
Q 4	Discuss the role of dimensional tolerance and in DFMA.	4	CO1
Q 5	Explain the procedure for selecting direction of fibre lines in forged components.	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	Illustrate the term product life cycle with a suitable example?	10	CO2
Q 7	Discuss the various attributes to design a product for suitable handling? Discuss with 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 machining, with suitable examples.	10	CO3
Q 9	Discuss the various considerations need to be taken care while designing a product by welding process.	10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q 10	Perform the DFA analysis on the following component :	20	CO4

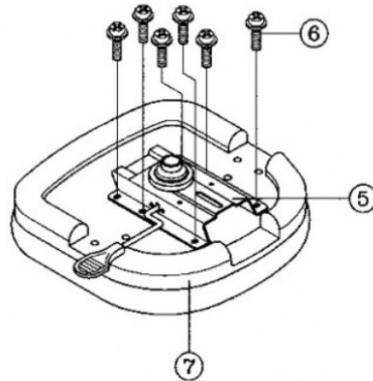
PART LIST

KEY	QTY	DESCRIPTION	KEY	QTY	DESCRIPTION	KEY	QTY	DESCRIPTION
1	5	Caster	7	1	Seat	12	1	Backrest Depth Adj. Knob + Washers
2	1	Base	8	1	Backrest			
3	1	Seat Post	9	1	Connector Bar + Bellow	13	1	Knob for Inward & Outward
4	1	Seat Post Cover	10	1	Backrest Bellow			
5	1	Mechanism	11	1	Backrest Height Adj. Knob + Washer			
6	6	Mechanism Screw						

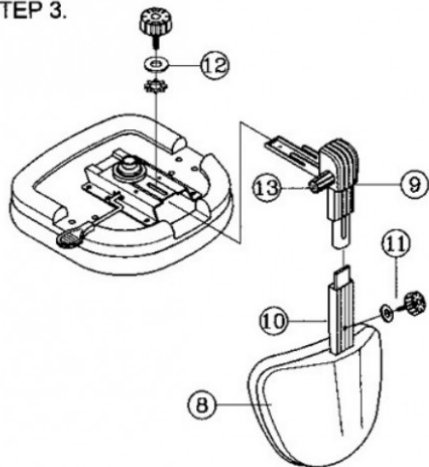
STEP 1.



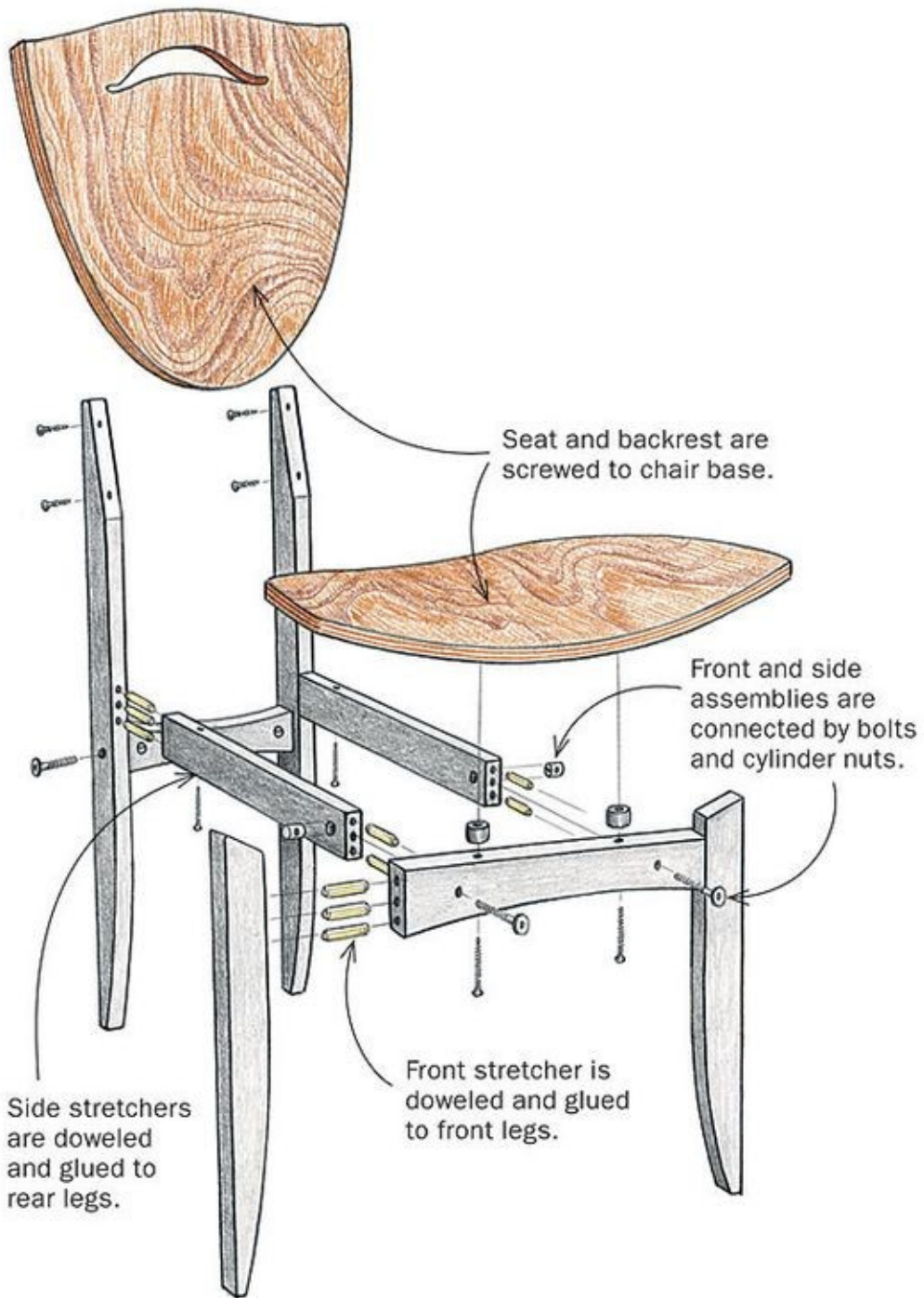
STEP 2.



STEP 3.



OR



Q 11 Discuss the DFMA guidelines in detail with suitable examples.

20 CO3