

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Semester End Main Examinations

Programme: B.E.

Branch: Aerospace Engineering

Course Code: 22AS4PCASD

Course: Aerospace Drafting

Semester: IV

Duration: 3 hrs.

Max Marks: 100

Date: 22.09.2023

Instructions: Answer one question from each of parts A, B and C

- I. Use First angle projection only
- II. Missing data if any may be suitably assumed
- III. All the calculation should be on answer sheet supplied
- IV. All the dimensions are in mm

PART-A

1

For the object shown (FIG.Q1) below draw the three views.

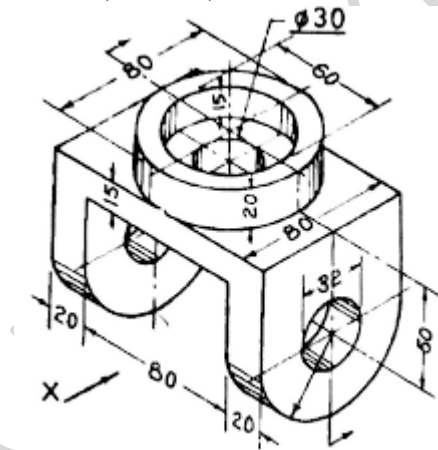


FIG.Q1

CO

PO

Marks

CO 1

PO 1

20

CO 2

PO 10

OR

2

Draw the profile of the following threads and indicate all the dimensions

- i) Sellers thread having pitch 50mm, ii) Acme thread pitch 60mm

CO 1

PO 1

20

CO 2

PO 10

		PART-B			
3		Draw to 1:1 scale the top and sectional front views of a double riveted lap joint with zig –zag riveting. The thickness of the plates is 9 mm. Show at least three rivets in each row. Indicate all the dimensions. Use snap headed rivets.	<i>CO 1</i> <i>CO 2</i>	<i>PO 1</i> <i>PO 10</i>	20
		OR			
4		Draw the three views of ISO threaded square bolt 100 mm long, 20 mm diameter and a thread length of 50 mm and square nut assembly in the axis horizontal position. Show the assembly of bolt and nut in the view across corners across corners and across flats. Indicate all the proportions and the actual dimensions.	<i>CO 1</i> <i>CO 2</i>	<i>PO 1</i> <i>PO 10</i>	20
		PART-C			
5		The details of wing is shown in the FIG.Q5. Draw front, top and left views of the assembly with suitable scale.	<i>CO 1</i> <i>CO 3</i>	<i>PO 1</i> <i>PO 10</i>	60
		OR			
6		The details of landing gear assembly is shown in the FIG.Q6. Draw front, top and left views of the assembly with suitable scale.	<i>CO 1</i> <i>CO 3</i>	<i>PO 1</i> <i>PO 10</i>	60

Details of wing assembly

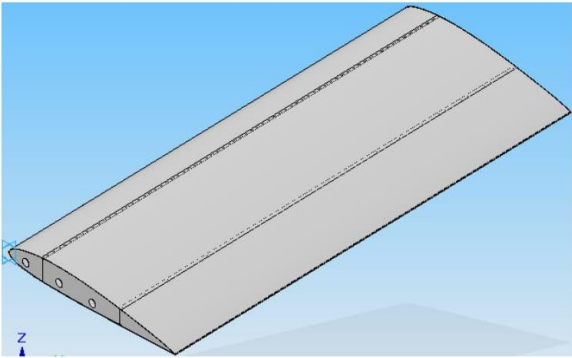
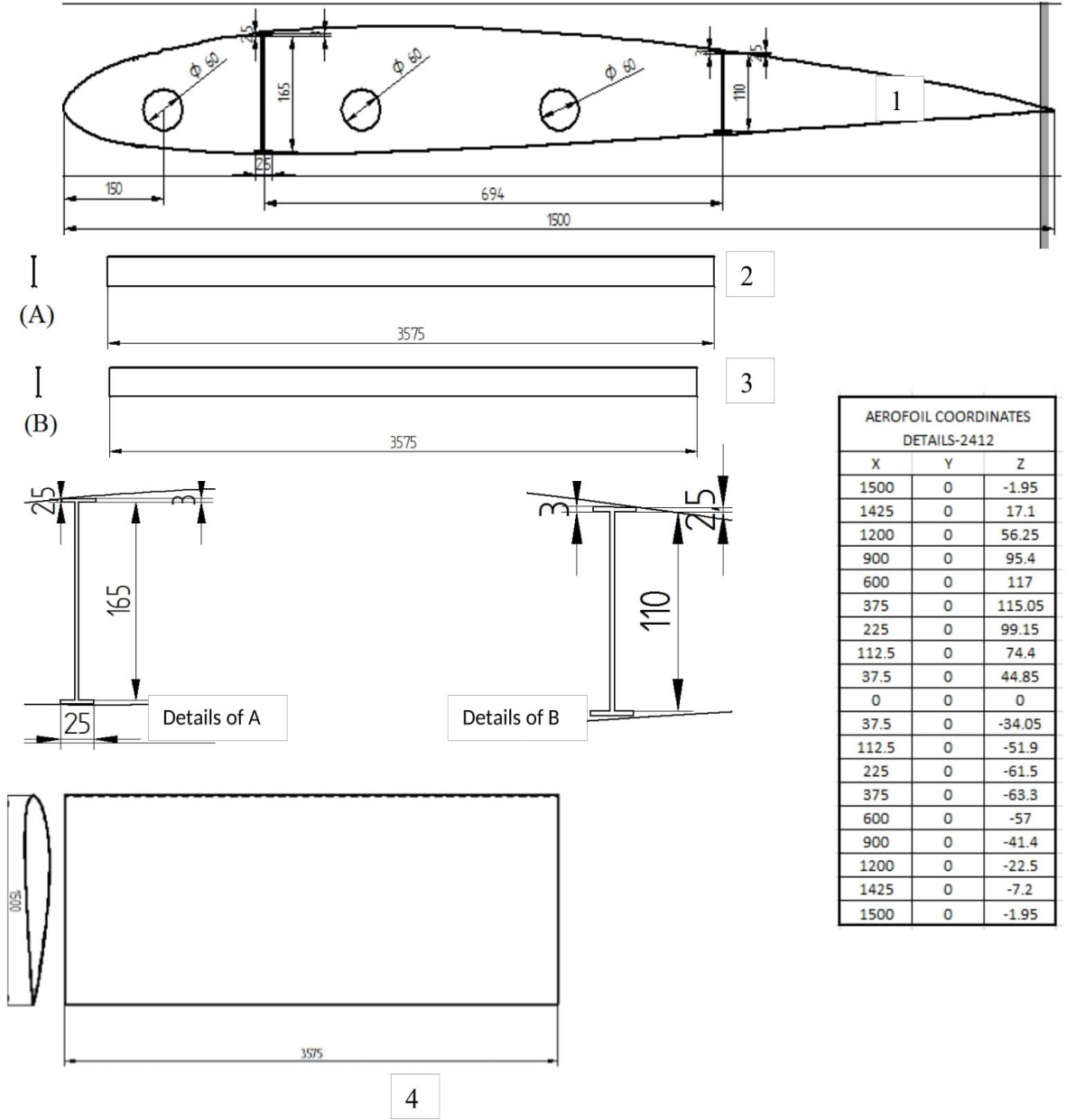


TABLE 1. BILL OF MATERIALS

Item Number	Title	Material	Quantity
1	RIB	Aluminum, 6061-T6	2
2	SPAR FRONT	Aluminum, 6061-T6	1
3	SPAR REAR	Aluminum, 6061-T6	1
4	SKIN	Aluminum, 6061-T6	1



AEROFOIL COORDINATES DETAILS-2412		
X	Y	Z
1500	0	-1.95
1425	0	17.1
1200	0	56.25
900	0	95.4
600	0	117
375	0	115.05
225	0	99.15
112.5	0	74.4
37.5	0	44.85
0	0	0
37.5	0	-34.05
112.5	0	-51.9
225	0	-61.5
375	0	-63.3
600	0	-57
900	0	-41.4
1200	0	-22.5
1425	0	-7.2
1500	0	-1.95

FIG.Q5

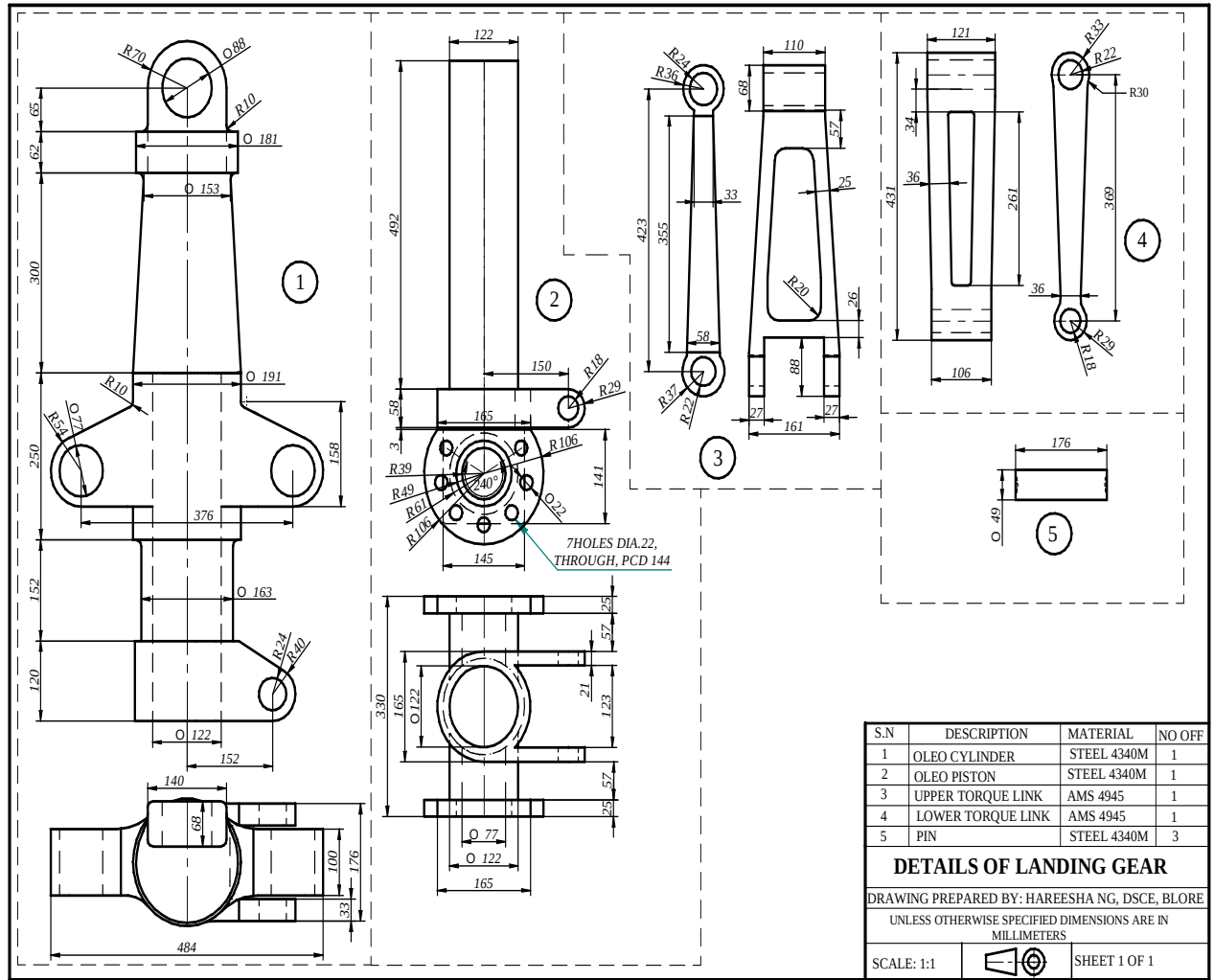


FIG.Q6