Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December-2021

Program Name: B.TECH-ADE **Semester : III**
Course Name : Automotive Manufacturing Assembly Drawing **Time : 03 hrs.**
Course Code : MEAD2005 **Max. Marks: 100**
Nos. of page(s) : 02

SECTION A (20 Marks)

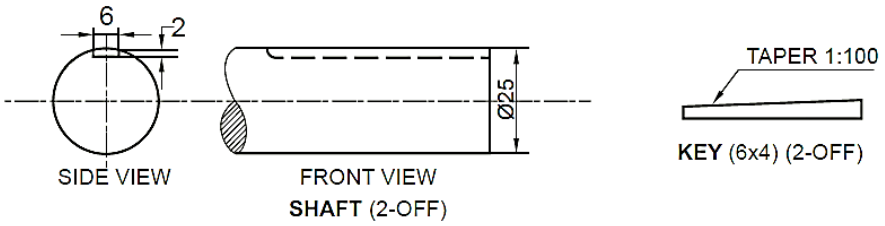
1. **All questions are compulsory in this section.**
2. **Total 05 questions are there in this section and each question is of 4 Marks.**
3. **Short answer type questions.**

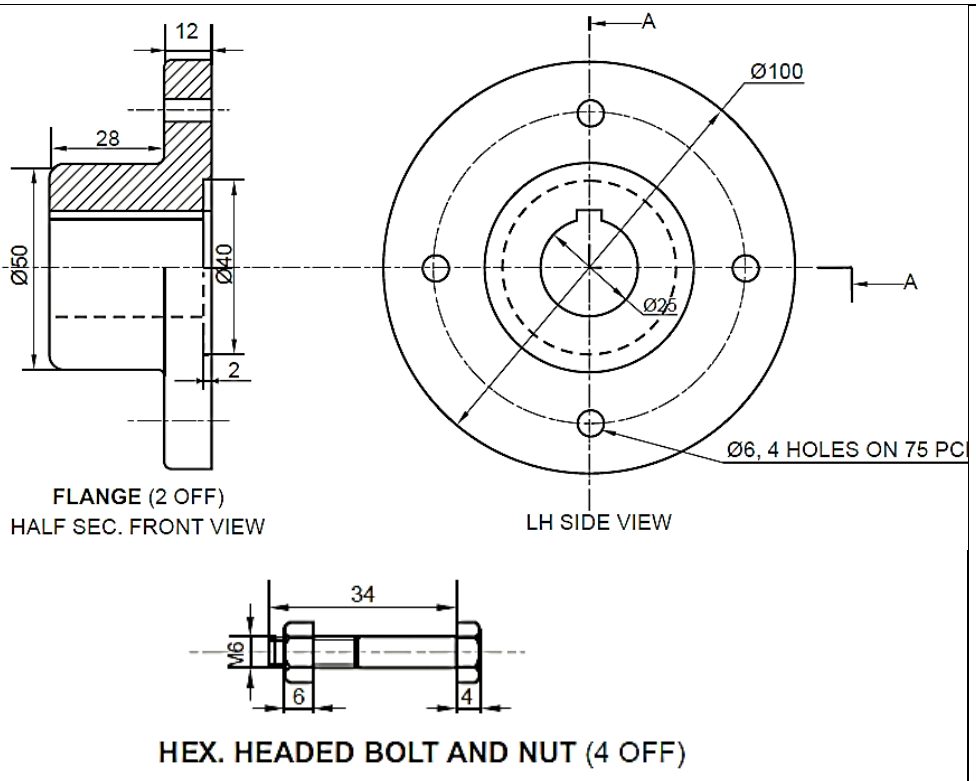
S. No.		Marks	CO
Q1	Explain with the help of simple sketches the aligned and unidirectional system of dimensioning.	**4**	**CO1**
Q2	Sketch and show the following terms with respect to screw threads: (a) pitch (b) major diameter, (c) lead, (d) root and (e) flank	**4**	**CO1**
Q3	Draw the conventional representation of the following: (a) external threads, (b) internal threads	**4**	**CO2**
Q4	Explain how the following threads are designated as per the BIS norms: (a) Knuckle thread and (b) Buttress thread.	**4**	**CO2**
Q5	Draw the symbols for the following flanged pipe fittings: (a) reducing socket, (b) globe valve, (c) lateral, (d) check valve and (e) 45º elbow.	**4**	**CO3**

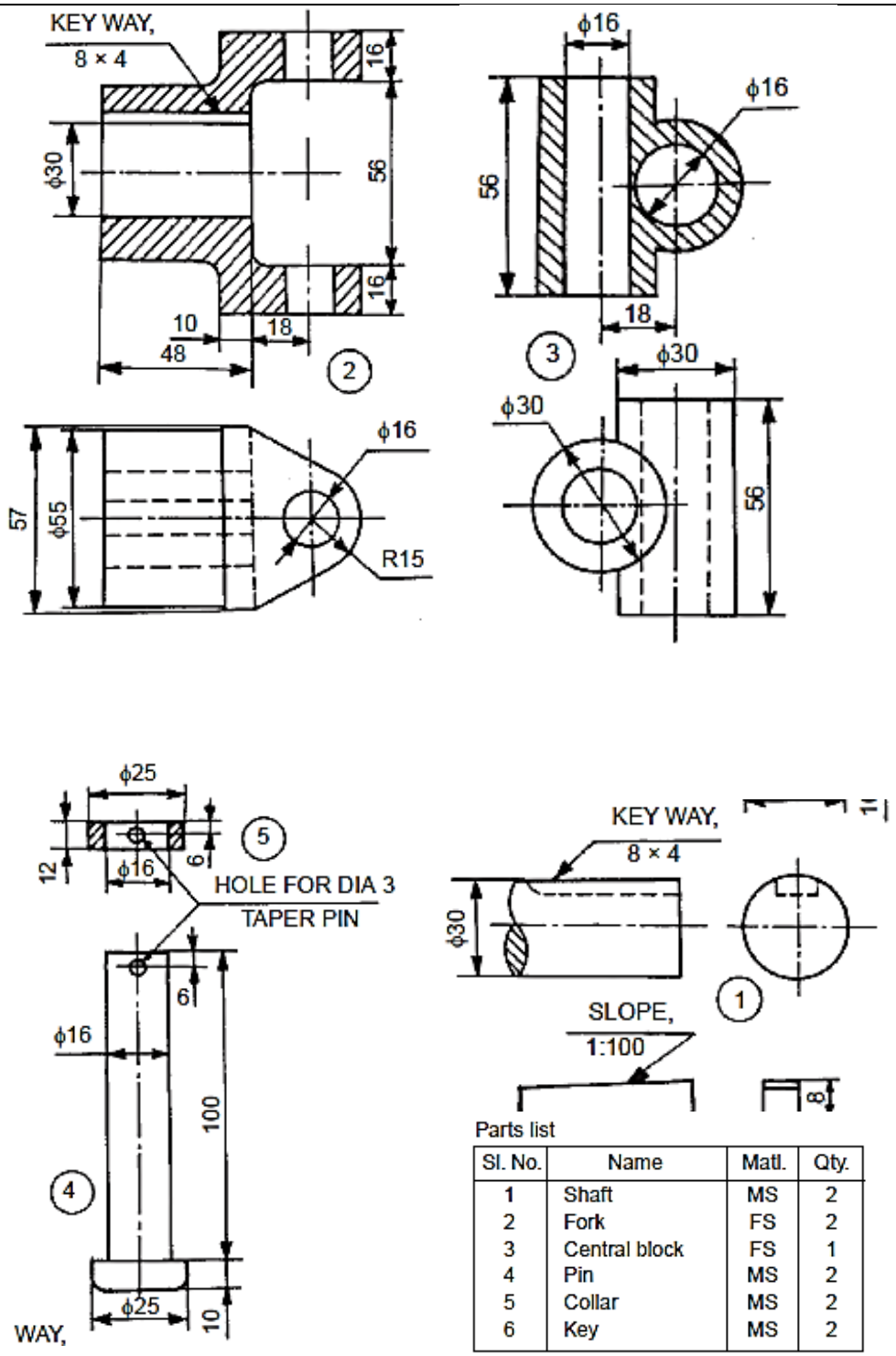
SECTION B (40 Marks)

1. **All questions are compulsory in this section.**
2. **Total 04 questions are there in this section and each question is of 10 Marks.**
3. **Write brief notes.**

Q1	Explain the significance of foundation bolts and where are they used? Sketch neatly, giving proportionate dimensions; the following foundation bolts of diameter 25 mm a) Rag foundation bolt, and (b) Bent foundation bolt. .	**10**	**CO1**
Q2	List the different types of sectional views. Explain any one of them with the help of sketch.	**10**	**CO1**
Q3	Draw neat sketches and their symbols of the following welded joints **a.** Butt joint **b.** Lap joint	**10**	**CO2**

	c. Tee joint **d.** Corner joint **e.** Edge joint		
Q4	Describe the significance of limit, fit and tolerance on machine components and differentiate between clearance fit, interference fit and transition fit.	**10**	**CO2**
	SECTION C (40 Marks) **1. All questions are compulsory in this section.** **2. Total 02 questions are there in this section and each question is of 20 Marks.**		
Q1	Fig 1. Shows the details of an "Unprotected Flange Coupling". Assemble the details and draw the following views of the assembly. a. Half Sectional Front View b. Side View Show the bill of materials and projection symbol along with the Title Block. Draw the views with proper dimensions and show the dimensions in the views. Take necessary scale if required. 	**20**	**CO3**

	 **Figure 1: Details of an Unprotected Flange Coupling**		
Q2	Fig 2. Shows the details of a 'Universal Coupling'. Assemble the details and draw the following views of the assembly a. Front view, top half in section. b. Left side view. Show the bill of materials and projection symbol along with the Title Block. Draw the views with proper dimensions and show the dimensions in the views. Take necessary scale if required.	**20**	**CO3**



Parts list

Sl. No.	Name	Matl.	Qty.
1	Shaft	MS	2
2	Fork	FS	2
3	Central block	FS	1
4	Pin	MS	2
5	Collar	MS	2
6	Key	MS	2

Figure 2 : Details of an Universal Coupling