TED (21) - 3025
(REVISION-2021)

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Reg.No………………
Signature…………….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2025

MACHINE DRAWING

[Maximum Marks:75]   [Time: 3 Hours]

[Note:- 1. A2 size drawing sheet to be supplied.
2. Both sides of the sheet can be used.
3. Use of BIS tables and charts are permitted.
4. Theory part answers should be written in answer book.
5. Missing   data if any may be suitably assumed.
6. Sketches are accompanied. All dimensions are in mm.
7. All drawing should be in first angle projections.]

PART - A

I. Answer any two of the following questions. Each question carries 'Fifteen' marks.

(2 x 15 = 30 Marks)

Module Outcome Cognitive level

1	Draw weld symbols for the following. a.) Square butt weld b.) Single bevel butt weld c.) Single U butt weld d.) Single V butt weld and e.) fillet weld	M1.03	U
	OR		
2	Draw the sectional front view and top view of a double riveted chain lap joint for plates having 20mm thickness. Show all the dimensions in terms of the diameter of the rivet. Draw at least three rivets in a row. Use snap head rivets.	M1.04	A
3	Compute the limit dimensions of the shaft and the hole for a clearance fit based on shaft basis system if 　　　Basic size　　　　　　　　= Ø30 mm 　　　Minimum clearance　　　= 0.007 mm 　　　Tolerance on hole　　　　= 0.021 mm 　　　Tolerance on shaft　　　　= 0.021 mm Check the calculated dimensions and represent the limit dimensions schematically.	M2.01	U
	OR		
4	A fully dimensioned view of a Locating pin is shown in fig.1. The surfaces indicated by numerals within circles are to be finished to surface roughness values noted against each number as below. 　　Surface 1 to 6.3 μm 　　Surface 2 to 0.8 μm 　　Surface 3 to 12.5 μm and 　　Surface 4 to 3.2 μm Redraw the given figure indicating the roughness in grade numbers as per B.I.S	M2.02	U

PART - B

II. **Answer** *any* **one question from the following. Each question carries 'Thirty'**
marks. **(1 x 30 = 30 Marks)**

1	An isomeric view of a knuckle joint is shown in figure.2. Draw the top half sectional elevation and left end view. Dimension the views and prepare the item list showing quantity and material of items.	M3.02	A
	OR		
2.	Draw the top half sectional elevation and end view looking from the bolt head side of a flanged coupling (Unprotected type) given in figure 3. Dimension the views and prepare the item list showing quantity and material of items.	M3.02	A

PART - C

III. **Answer** *any one* **questions from the following. Each question carries ' Fifteen'**
marks.

(1 x 15= 15 Marks)

| 1.	Prepare the shop floor drawing of Sleeve given in figure-4 by incorporating all the specified requirements. a) Surface 1 should not have a radial run out greater than 0.008mm with respect to the axis of the sleeve. Also, the surface should be contained between two parallel planes 0.008mm apart b) Surface 1 and 2 should be parallel to each other with a parallelism tolerance of 0.004mm. c) Surface 3 should have a geometrical circularity and cylindricity tolerances within 0.003mm each. d) Surface 4 has radial run out limited to 0.008mm with respect to the axis, circularity tolerance limited to 0.003mm and cylindricity tolerance of 0.003mm.	M4.02	A
	OR		
2.	Two views of a slotted nut are shown in figure.5. Redraw the given figure by taking d1 = Ø25, d2 = Ø36, d3 = 36.6 and h = 12 and indicate following geometrical tolerances: 1) End faces of the nut are parallel with a geometrical tolerance of 0.02mm 2) The datum axis of the nut to which the tolerance frame is connected, should be contained in a cylindrical zone of diameter 0.2mm coaxial with the datum. 3) Both end faces of the nut should be perpendicular to its axis with a geometrical tolerance of 0.02mm.	M4.02	A
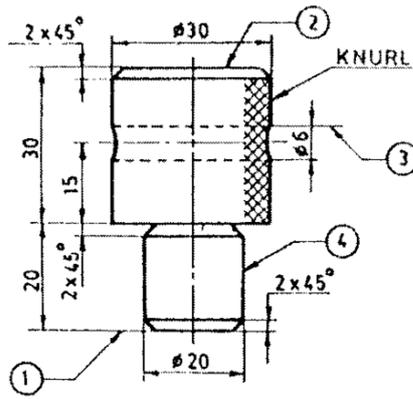
Fig.1 Locating pin
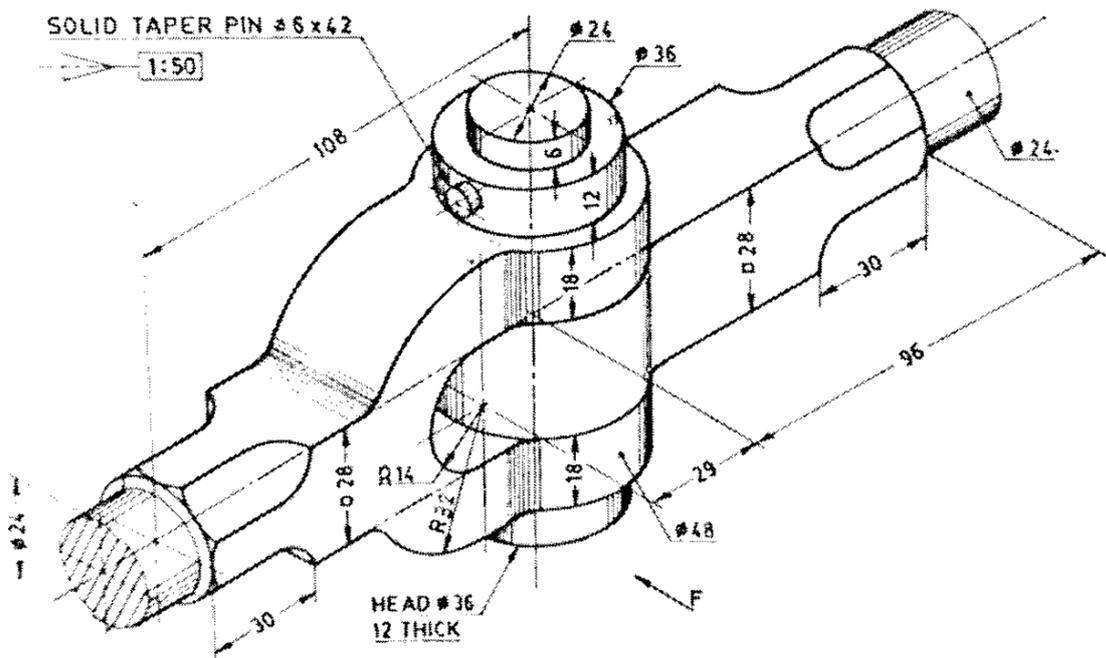
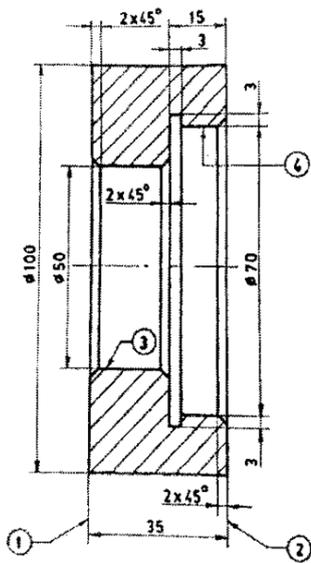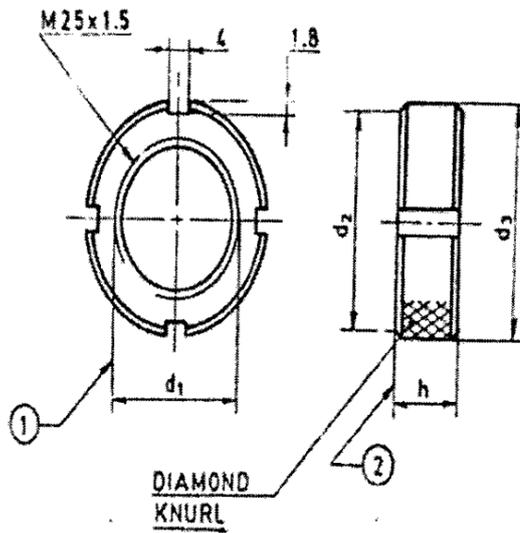
Fig.2.Knuckle joint
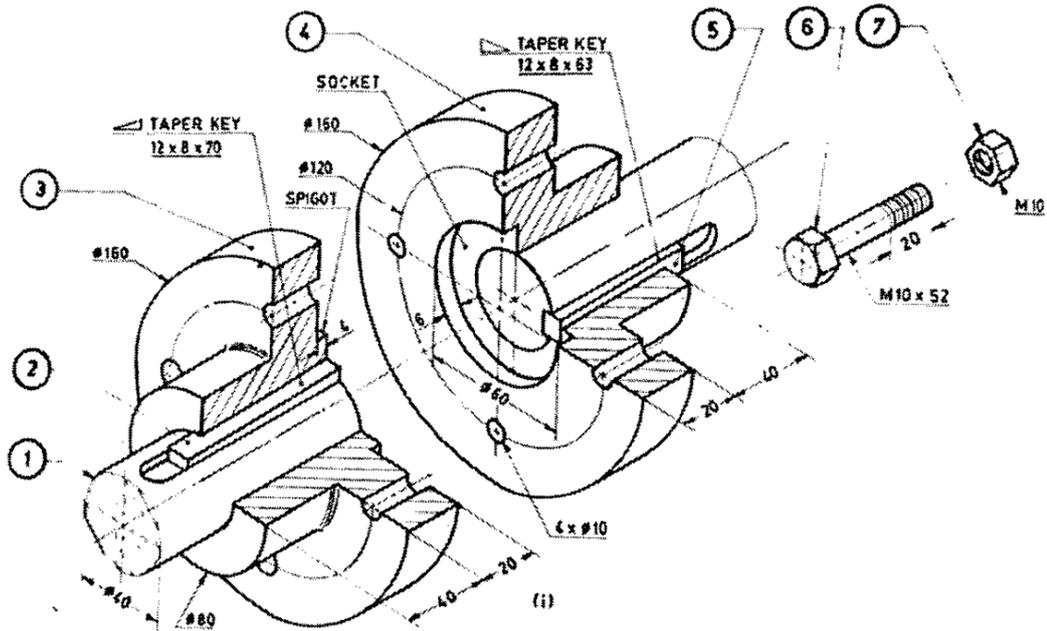
Fig.3 Flanged coupling (Unprotected type)

Fig.4 .Sleeve

Fig. 5. Slotted nut

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