



C09-M-407

3507

BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2014
DME—FOURTH SEMESTER EXAMINATION
PRODUCTION DRAWING

Time : 3 hours]

[Total Marks : 60

PART—A

5×4=20

- Instructions** : (1) Answer **all** questions.
(2) Each question carries **five** marks.

1. The dimensions of a hole and shaft are given below :

Hole : 40	0 025	Shaft : 40	0 009
	0 000		0 025

Find—

- (a) hole tolerance;
 - (b) shaft tolerance;
 - (c) minimum allowance;
 - (d) maximum allowance;
 - (e) type of fit.
2. Sketch the symbols for the following characteristics to be toleranced :
- (a) Straightness
 - (b) Circularity
 - (c) Angularity
 - (d) Position
 - (e) Profile of any line

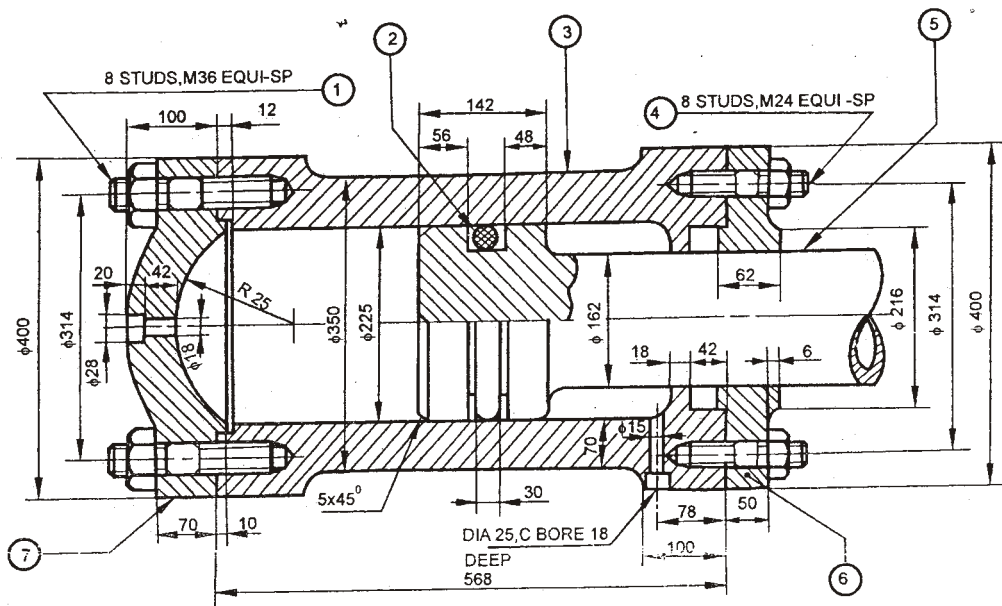
- * 3. Give the range of surface roughness values in microns obtainable for the following manufacturing processes :
- Superfinishing
 - Cylindrical grinding
 - Boring
 - Shaping
 - Die casting
4. Give the meaning of the following designations :
- Hex bolt $M20 \times 1.5 \times 75$
 - Splines $6 \times 23 \times 26$
 - Circlip A 10
 - Taper key $12 \times 8 \times 50$
 - O-ring 10/2.5, Viton

PART—B

20+5+5+3+7=40

- Instructions :** (1) Answer *any one* question.
 (2) Each question carries **forty** marks.
 (3) Choose suitable scale.

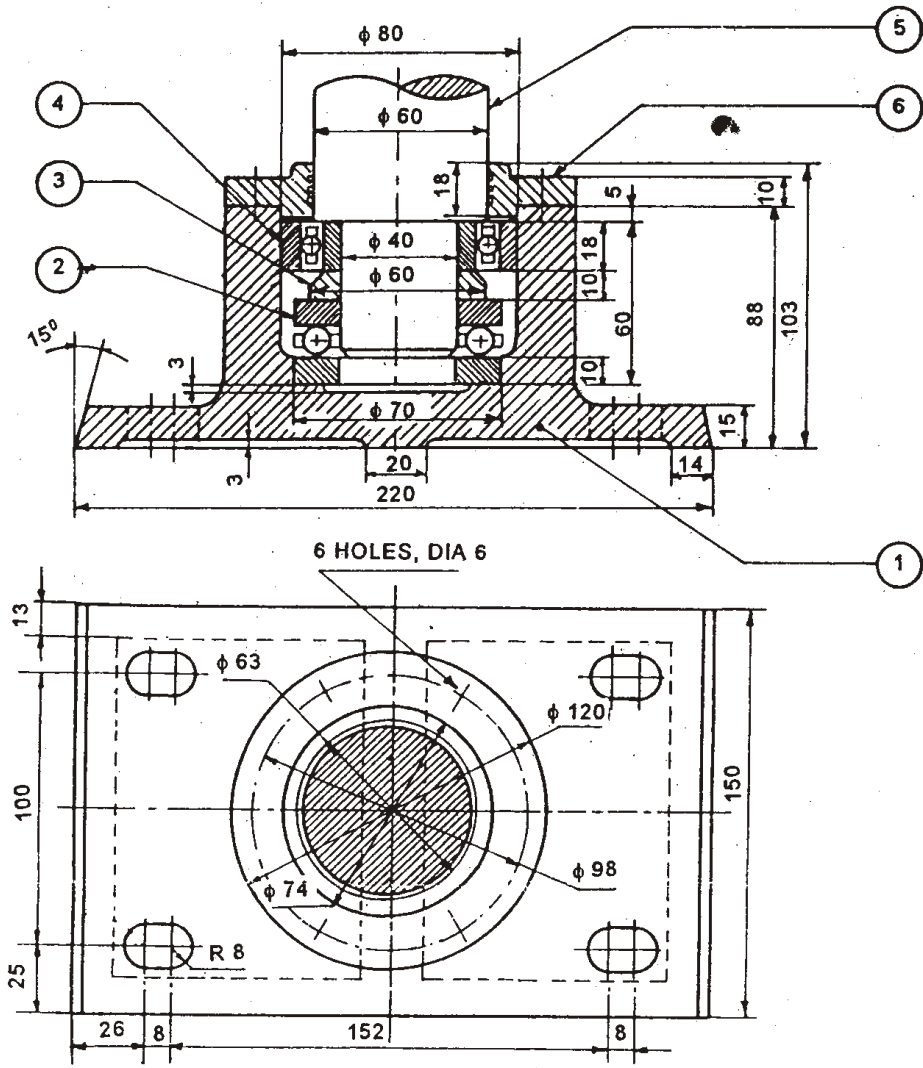
5. Study the given assembly drawing (Page 3) of hydraulic cylinder : 20+5+5+3+7=40
- Draw the component drawings for parts 3, 5, 6 and 7.
 - Indicate the geometrical tolerances wherever needed for parts 3, 5, 6 and 7.
 - Indicate the recommended surface roughness values on parts 3, 5, 6 and 7.
 - Mention the types of fit between mating parts 3–5, 3–6 and 3–7.
 - Prepare the process sheet for piston.
6. Study the given assembly drawing (page 4) of footstep bearing : 20+5+5+3+7=40
- Draw the component drawings for parts 1, 3, 5 and 6.
 - Indicate the geometrical tolerances wherever needed for parts 1, 3, 5 and 6.
 - Indicate the recommended surface roughness values on parts 1, 3, 5 and 6.
 - Mention the types of fit between mating parts 1–4, 5–4 and 5–2.
 - Prepare the process sheet for cover.



Bill of Material

Part No.	Name	Raw Material	Qty.
1	Stud with nut	Std. Component	8
2	O-ring	Rubber—Std. Component	1
3	Cylinder	CI—Casting	1
4	Stud with nut	MS—Std. Component	8
5	Piston	CI—Casting	1
6	Cylinder cover	CI—Casting	1
7	Cylinder head	CI—Casting	1

Hydraulic Cylinder



Bill of Material

Part No.	Name	Raw Material	Qty.
1	Base	CI—Casting	1
2	Thrust ball bearing	Std. Component	1
3	Spacer	CI—Casting	1
4	(Radial) ball bearing	Std. Component	1
5	Shaft	MS 63	1
6	Cover	CI—Casting	1

Footstep Bearing