

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2025**

PRODUCTION DRAWING

- [Note:** 1. *Use of BIS tables and charts are permitted.*
2. *A2 size drawing sheet will supplied and both sides can be used.*
3. *Sketches accompanied.*
4. *Theory portions of the question must be answered in the answer book.*
5. *Missing data can be suitably assumed.]*

[Maximum Marks: **100**]

[Time: **3 Hours**]

PART-A

[Maximum Marks: **20**]

I. (Answer ***all*** questions. Each question carries **5** marks)

1. Define the following
 - i) Basic size ii) Actual size iii) Tolerance iv) Upper deviation v) Lower deviation.
2. Indicate the surface texture characteristics of the symbol shown in **fig 1**.
3. Illustrate a hole basis system.
4. List any five types of shop floor drawings. (4 x 5 = 20)

PART-B

[Maximum Marks: **30**]

II. (Answer ***any two*** of the following questions. Each question carries **15** marks)

1. Dimensions of a hole and its shaft are given according to shaft basis system and the hole for a clearance fit based on a hole basis system.

Shaft	= ϕ 30 mm	Hole	= ϕ 30.092 mm
Shaft	= ϕ 29.979 mm	Hole	= ϕ 30.040 mm

Find the values of hole and shaft tolerances and clearances.
Represent the dimensions schematically.
2. Mention the symbols used for indicating the Direction of Lay as per Bureau of Indian standards.

3. Elevation of a Go-no-go gauge is shown in Fig.2. The surfaces are identified by the numerals 1 to 7 and the surface roughness values for these surfaces are given below in a tabular form. Draw the given figure and indicate the surface roughness values using grade numbers as per BIS.

Surface	1	2	3	4	5	6	7
Roughness Value	1.6	0.4	12.5	6.3	12.5	0.4	1.6

(2 x 15 = 30)

PART-C

[Maximum Marks: 50]

(Answer any **one** Question from the following. Each question carries **50** marks)

- III. Fig.3 shows top half sectional elevation of a Brass bush. The surfaces indicated by lower case letters are to be machined as detailed below:

- "a" represents turning to 12.5 μm finish
- "b" represents grinding to 0.8 μm finish
- "c" represents reaming to 1.6 μm finish and
- "d" represents boring to 6.3 μm finish.

Redraw the figure indicating the actual surface roughness values and the machining process.

OR

- IV. Fig 4. Shows the assembly of a sleeve and cotter joint. Prepare a production drawing of the parts as per BIS by incorporating the following information.

- Shaft ends and sleeve are to be made with easy running fit.
- The cotter pin is to be fixed in the sleeve and shaft with a sliding fit.
- The mating ends of shaft are to be manufactured with a parallelism tolerance of 0.03 mm.
- The mating ends of the shaft are to be perpendicular with the axis to a tolerance value of 0.04mm.
- All the mating surfaces are to be finished with a roughness value of 3.2 microns.
- All the other surfaces are to be finished with a roughness value of 6.3 microns.

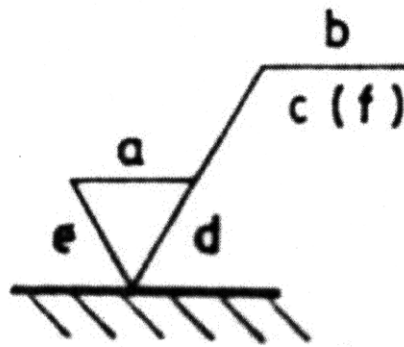


Fig 1

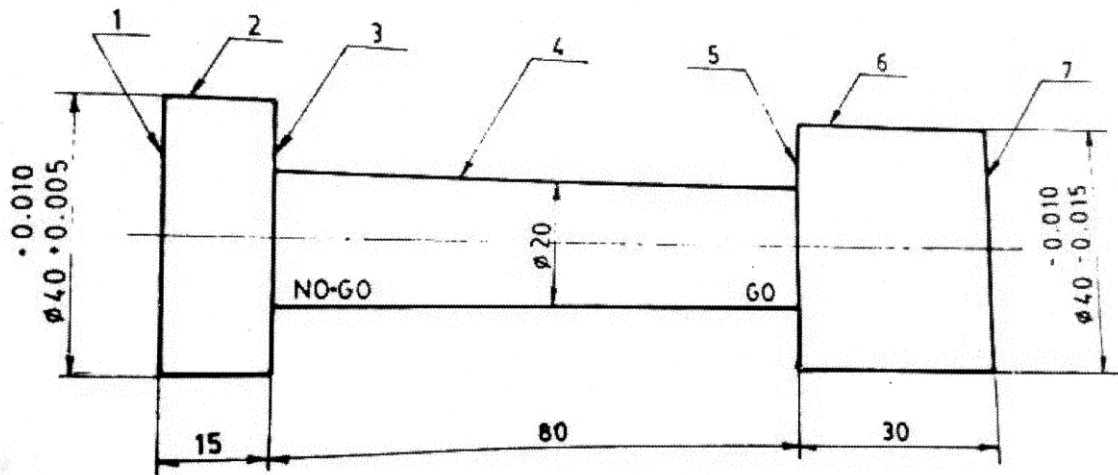


Fig 2. Go-no-Go gauge

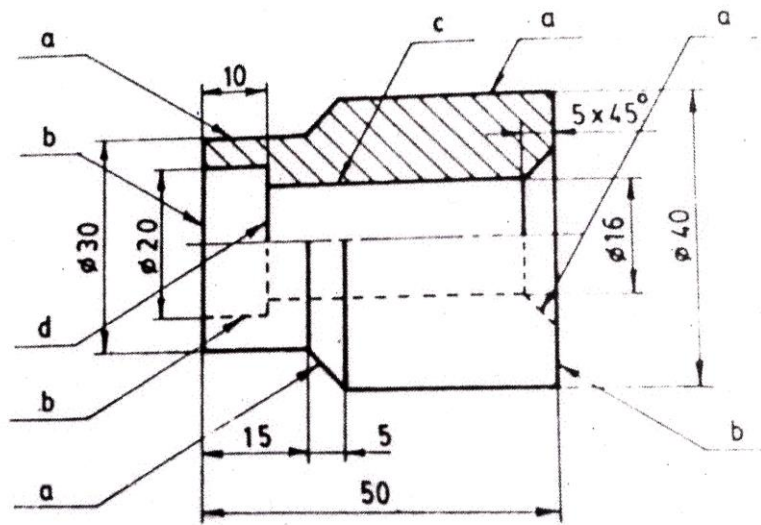


Fig 3. Brass Bush

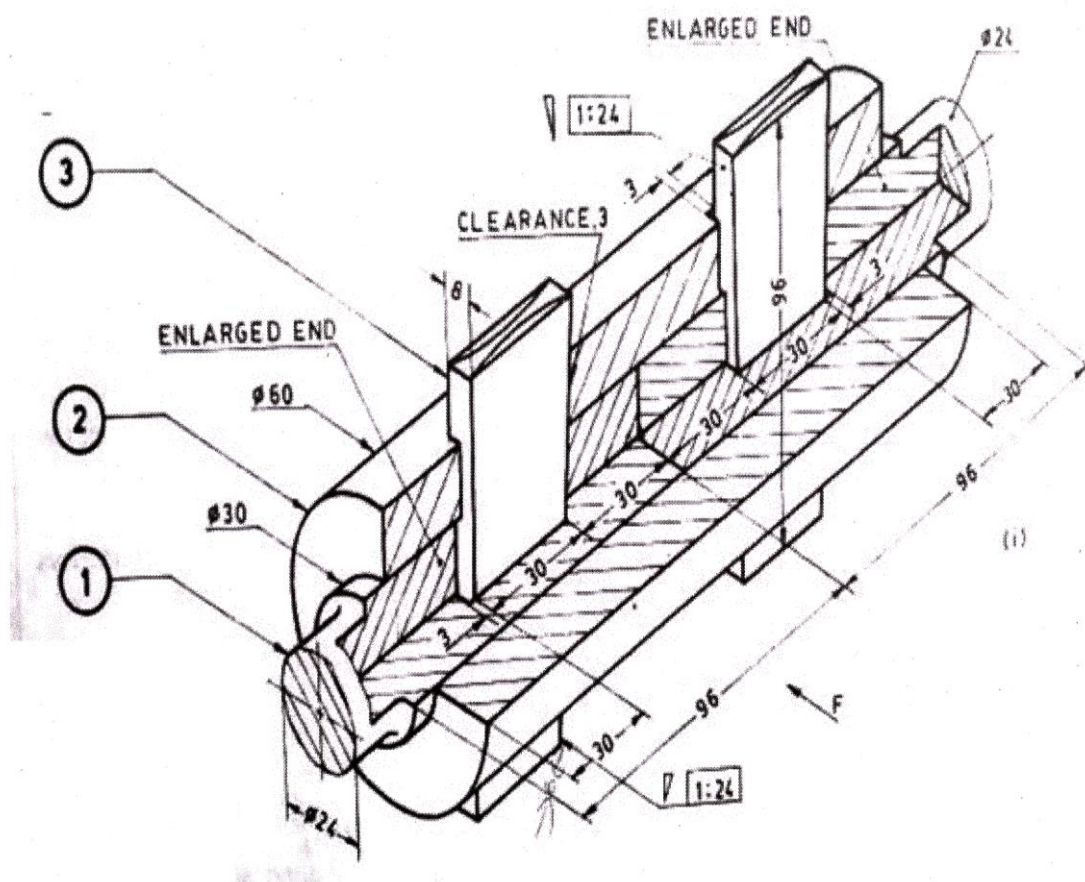


Fig. 4 sleeve and cotter joint
