

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018**

PRODUCTION DRAWING

[Time : 3 hours

(Maximum marks : 100)

- [Note :—1. Use of BIS tables and charts are permitted.
2. Sketches accompanied.]

PART — A

(Maximum marks : 20)

Marks

I Answer *all* questions in one or two sentences. Each question carries 5 marks.

1. Give any five elements of production drawing.
2. Determine the values of following tolerance from table.
 - (a) Nominal diameter 45mm (H8-f7)
 - (b) Nominal diameter 55 mm (H7-p6)
3. Write all the roughness values and their corresponding grade numbers.
4. Draw the structure of a typical operation chart.

(4×5 = 20)

PART — B

(Maximum marks : 30)

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

1. Compute the limit dimensions of the shaft and hole for a clearance fit based on shaft basis system.

Basic size: diameter 30mm minimum clearance = 0.007mm

Tolerance on hole & shaft = 0.021 mm

Check the calculated dimensions. Also represents these dimensions schematically.

2. A Locating pin as shown figure.1 produced in a workshop. Prepare a operational chart incorporating following details.

Part Name : Locating Pin

Part No. : 93 00 31 08

Drawing No. : Lp 0030 009

Material : Steel

Specific weight of steel is 8 gm/cc

Specification : IS 666 Quality, 25 Numbers.

3. A fully dimensioned half section elevation of a brass bush as shown figure-2. The surfaces indicated by lower case letters are to be indicated below.
- a represents turning to 12.5 microns finish
 - b represents grinding to 0.8 microns finish
 - c represents reaming to 1.6 microns finish, and
 - d represents boring to 6.3 microns finish.
- Redraw the figure indicating the actual surface roughness values and the machining process.

(2×15 = 30)

PART — C

(Maximum marks : 50)

III Answer any *one* of the following questions. Each questions carries 50 marks.

1. A Slip bush as shown in figure-3 is to be manufactured. Prepare a production drawing incorporating the following requirements.
- (a) Finish the inside diameter (30mm) and outside diameter (42mm) of cylindrical surfaces to a roughness value of 0.8 microns.
 - (b) All the remaining surfaces are to have a roughness value of 6.3 Microns.
 - (c) The inside diameter of the bush should have an upper and lower deviations of + 0.028mm and + 0.015mm respectively, while the outside diameter has a tolerance of h6.
 - (d) Outside diameter of the bush have a concentricity tolerance of 0.02mm with the axis of the cylindrical hole of 30mm diameter.
- Redraw the given figure and indicate all the above information on the drawing systematically as per B.I.S.
2. Prepare a shop floor drawing for the production of Socket and Spigot Joint is shown in figure-4, incorporating the following information with item list.
- (a) Socket and Spigot are to be manufactured with an easy running fit.
 - (b) Cotter pin is to be fixed with a sliding fit.
 - (c) A parallelism tolerance is to be given to the inside end of spigot and socket with the limit of 0.04mm.
 - (d) The bore of the socket and outside surface of the spigot are to be manufactured co-axial to a tolerance value of 0.04mm.
 - (e) Inside end of the spigot is perpendicular to the axis with a tolerance of 0.04mm.
 - (f) All the mating surfaces are to be finished to a roughness value of 3.2 microns.
 - (g) All the other surfaces are to be finished with a roughness value of 6.2 microns.

(1×50 = 50)