TED (15) – 4026

(REVISION — 2015)

Reg. No. .....

Signature .....

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.

Marks

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)

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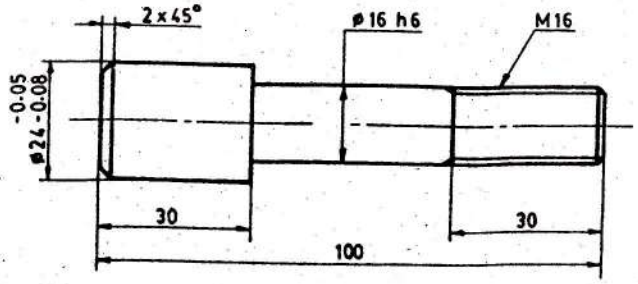


Fig. (1)

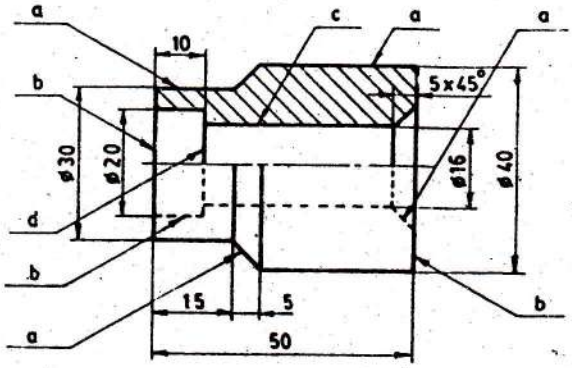


Fig. (2)

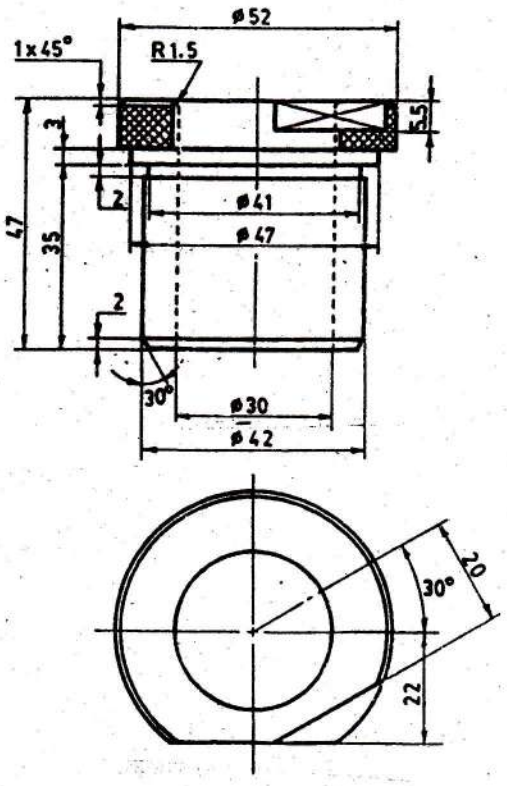
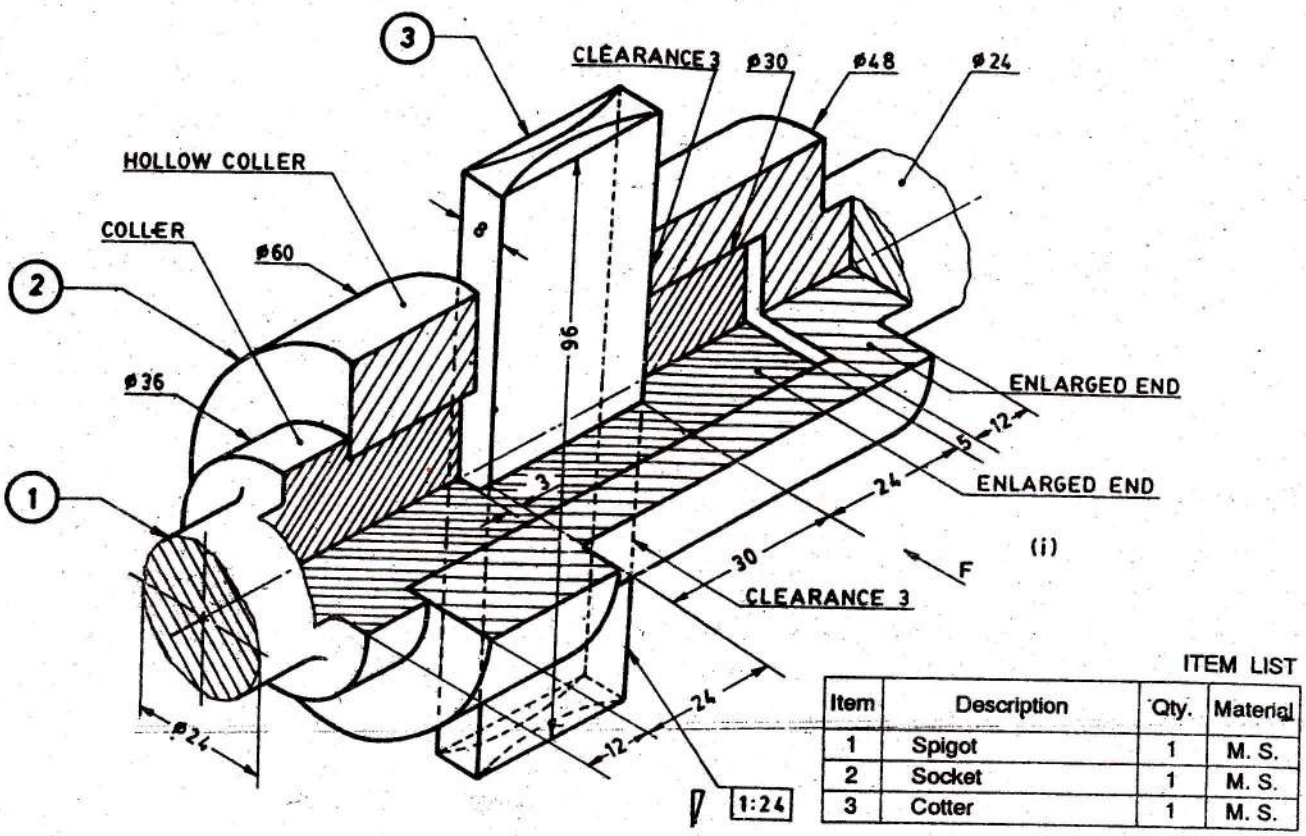


Fig. (3)



ITEM LIST

Item	Description	Qty.	Material
1	Spigot	1	M. S.
2	Socket	1	M. S.
3	Cotter	1	M. S.

Fig. (4)