TED (15) 4026

(Revision-2015)

N20-01938

Reg.No.....

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER-2020

PRODUCTION DRAWING

[Maximum marks: 75] (Time: 2.15 Hours)

[Instructions: 1. A2 size drawing sheet will be supplied and both sides can be used
2. Use of BIS tables and charts are permitted.
3. Sketches accompanied.
4. Missing Data may be suitably assumed]

PART – A
(Maximum mark: 10)

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

1. Explain systems of fit with necessary examples
2. Show the important surface texture characteristics on a diagram.
3. What are the steps to be followed in the preparation of part drawings of an assembly drawing for production?
4. List any five types of process charts which are commonly used. (2 x 5 = 10)

PART – B
(Maximum Marks:15)

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

1. Dimensions of a hole and its mating shaft are given below, according to the hole basis system.

   Hole : 27.500mm Shaft : 27.470 mm

   : 27.575mm : 27.445 mm

   Find the values of the hole tolerances, shaft tolerances and clearances. Represent the limit dimensions schematically. Check the calculated dimensions

2. Figure(1) shows top half sectional elevation of a brass bush. The surface indicated by lower case letters are to be machined as detailed below:

   (i) **a** represents turning to 12.5μm finish

   (ii) **b** represents grinding to 0.8 μm finish

   (iii) **c** represents reaming to 1.6 μm finish

(iv) **d** represents boring to 6.3 μm finish

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

3. A locating pin is given in figure(2). It is to be manufactured in a machine shop. Prepare an operation chart including the following details

Equipment	Drill jig
Part name	Locating Pin
Part number	93 0031 08
Drawing Number	LP 0030 09
Material	Steel
Specifications	IS:666 Part-1
Quantity required	50 Nos.

Also mention the details like departments, machines, tools/gauges/measurements weight per piece, number of operations, set up and operation times etc. (1x15=15)

PART – C

(Maximum marks : 50)

III. (Answer ***any one*** of the following questions)

1. Figure(3) shows assembly of a Socket and Spigot joint. Draw the necessary views of the parts and mark suitable dimensional as well as geometrical tolerences to result easy running fit between socket and spigot. The cotter and the hole are to be tolerance for normal running fit. Also give N7 finish to mating surfaces and N9 for the remaining (50)

OR

2. Figure(4) shows the assembled view of an Overhung crank. Prepare a shop floor drawing for the production, incorporating the following informations which are also supplied:
   (a) Crank shaft end is assembled in the crank with light keying fit.
   (b) Crank pin is with push fit in the crank.
   (c) Crank pin is with normal running fit in the big end of the connecting rod.
   (d) A parallelism tolerance of 30μm is allowed between the axis of the pin and the axis of the shaft.
   (e) Show surface finishes in grade numbers and tolerances using symbols and grade numbers on the drawings. (50)

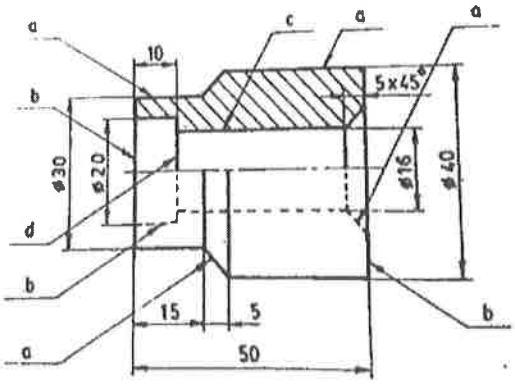


Figure (1) Brass bush

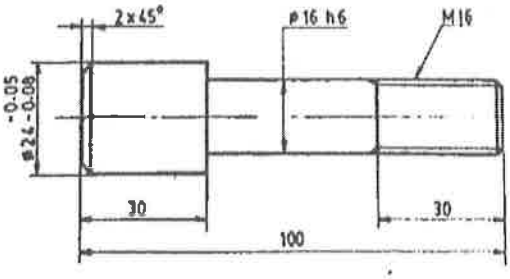


Figure (2) Locating Pin

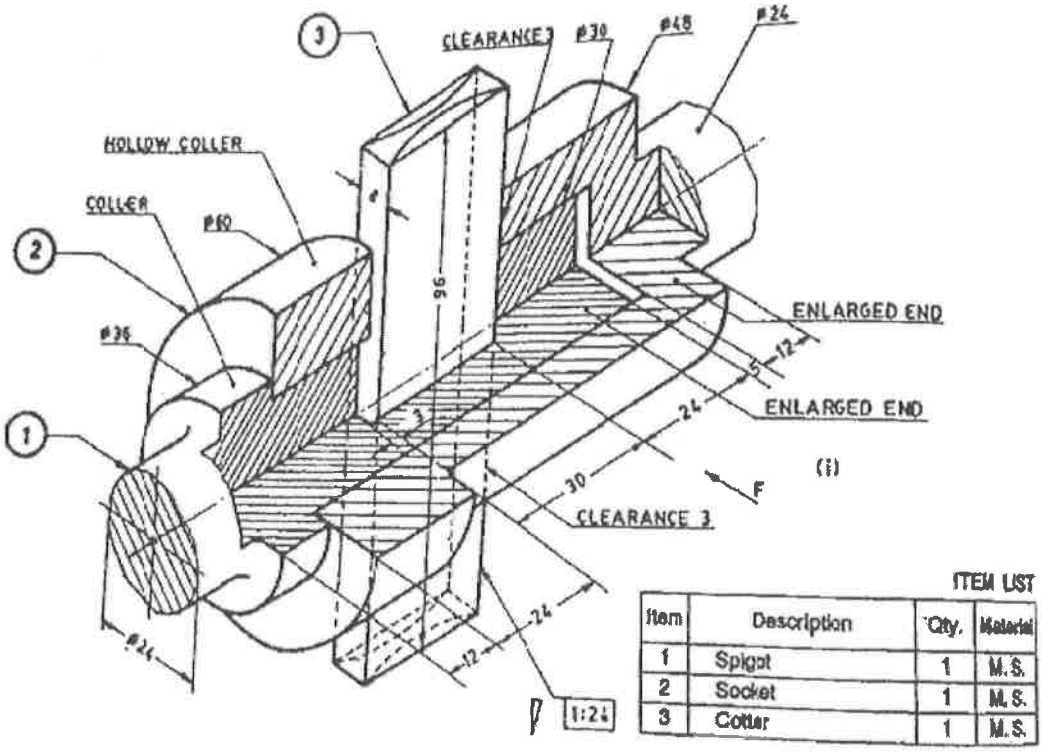
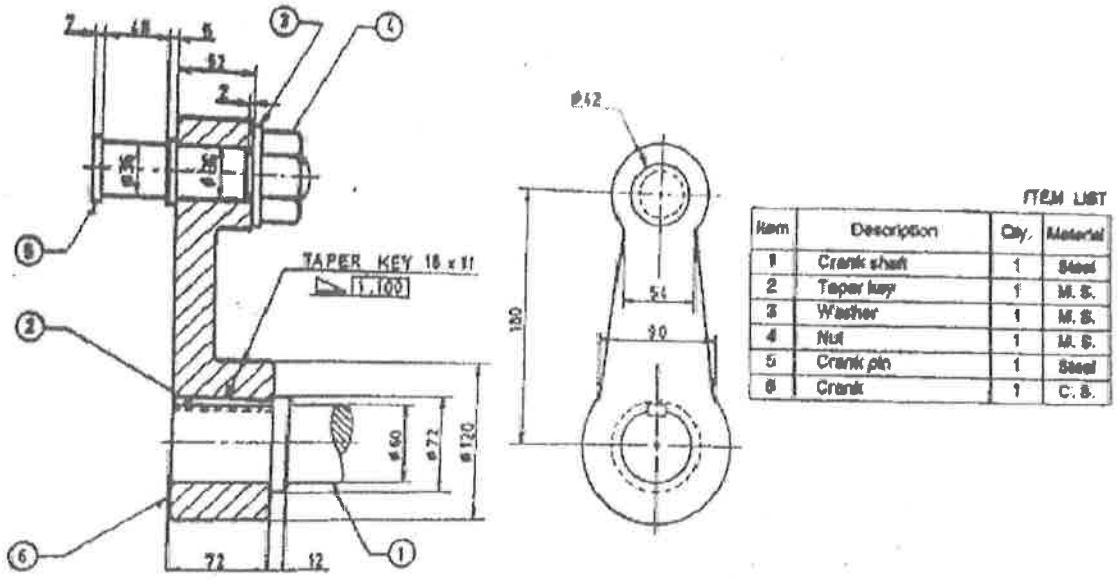


Figure (3) Socket and spigot joint



ITEM LIST

Item	Description	Qty.	Material
1	Crank shaft	1	Steel
2	Taper key	1	M. S.
3	Washer	1	M. S.
4	Nut	1	M. S.
5	Crank pin	1	Steel
6	Crank	1	C. S.

Figure (4) OVERHUNG CRANK

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