Code No. 3332

FACULTY OF ENGINEERING

B.E. 4/4 (Mech.) II-Semester (Main) Examination, May / June 2017

Subject : Production Drawing

Time : 3 hours   Max. Marks : 75

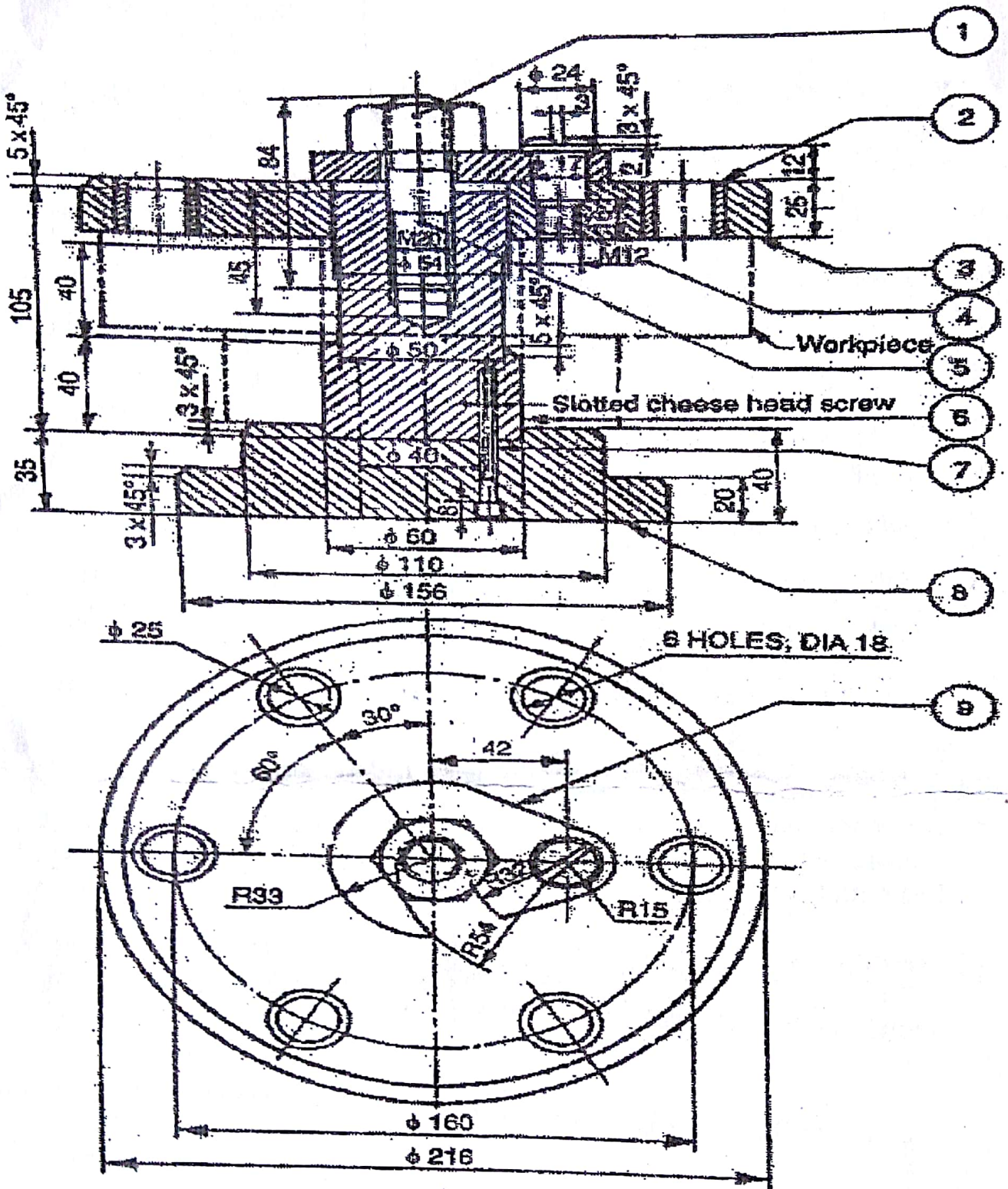**Note:** *Answer all questions from Part-A. Answer all questions from Part-B.*

PART – A (25 Marks)

1. Compare the Engineering Drawing, Machine Drawing and Production Drawing.   3
2. What is Fit? Type of fits with examples.   3
3. Draw the symbol for surface roughness and abbreviate a, b, c, d, e and f.   3
4. What are the elements in preparing the process sheet?   3
5. What is the symbol for concentricity?   2
6. What is the conventional representation for bearings?   2
7. How to represent the material composition in production drawing sheet?   3
8. Draw the tool movement for multidirectional (direction of lay).   2
9. Draw the Hydraulic symbol for 2 way direction control valve.   2
10. Define tolerance, types with examples.   2

PART – B (50 Marks)

11. Draw the part drawings for the given assembly of Drill JIG and suggest the fits between mating parts. A) Stem and Jig Plate   B) Jig plate and Bush   C) Stem and Base plate.   35

12. Prepare the process sheet for stainless steel bar with having operations like, step turning, taper turning, threading, slitting, Knurling, internal threading, chamfering and under cutting with orientation.   15

Workpiece

Slotted cheese head screw

6 HOLES, DIA 18

φ 25

φ 24

5 x 45°

3 x 45°

5 x 45°

3 x 45°

3 x 45°

M20

φ 50

φ 40

φ 60

φ 110

φ 156

φ 160

φ 216

30°

60°

42

R33

R15

M12

84

45

40

105

40

35

20

40

25

12

17

Parts List

Part No.	Qty.	Name	Matl.
1	1	Nut	—
2	6	Bush	MCS
3	1	Jig plate	CI
4	1	Screw	MS
5	1	Stud	MS

Part No.	Qty.	Name	Matl.
6	1	Stem	MS
7	3	Screw	MS
8	1	Base	CI
9	1	Latch washer	MS

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Code No. 5333

FACULTY OF ENGINEERING

B.E. 4/4 (Mech.) II - Semester (Main) Examination, May 2016

Subject : Production Drawing

Time : 3 Hours

Max. Marks: 75

Note: Answer all questions from Part-A and answer any five questions from Part-B.

PART – A (25 Marks)

1 State the type of fit obtained for Hole diameter :33.00 mm & 33.24 mm and shaft diameter:33.11 mm & 34.05 mm   (3)

2 Mention the standard representation for rivet.   (2.5)

3 State the difference between hole base system and shaft base system.   (3)

4 Define interchangeability.   (2.5)

5 Explain all orientation symbols in geometric dimensioning tolerance with example.   (3)

6 Specify all the directions of lay their meaning which are represented in surface roughness.   (3)

7 Manufacturing process of sand casting, filling, hobbing and burninshing. Out of these Processes, which has high surface finish values.   (2)

8 Mention the meaning of the weld symbol as shown below   (3)
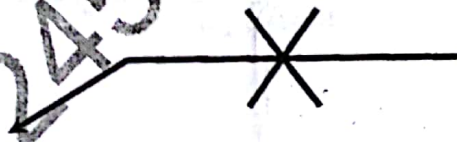
9 Mention all the process codes which are used in heat treatment process.   (3)

PART – B (50 Marks)

10 (a) Mention the suitable fits and their tolerance grades for mating parts assembly which is given next page.   (10)

11 Draw the following components and give necessary dimensional and geometric tolerances and surface roughness values.
   (a) Block   (b) Shoe   (c) Cotter   (25)

12 Write the process sheet for the block component.   (15)

..2

Code No. 5333
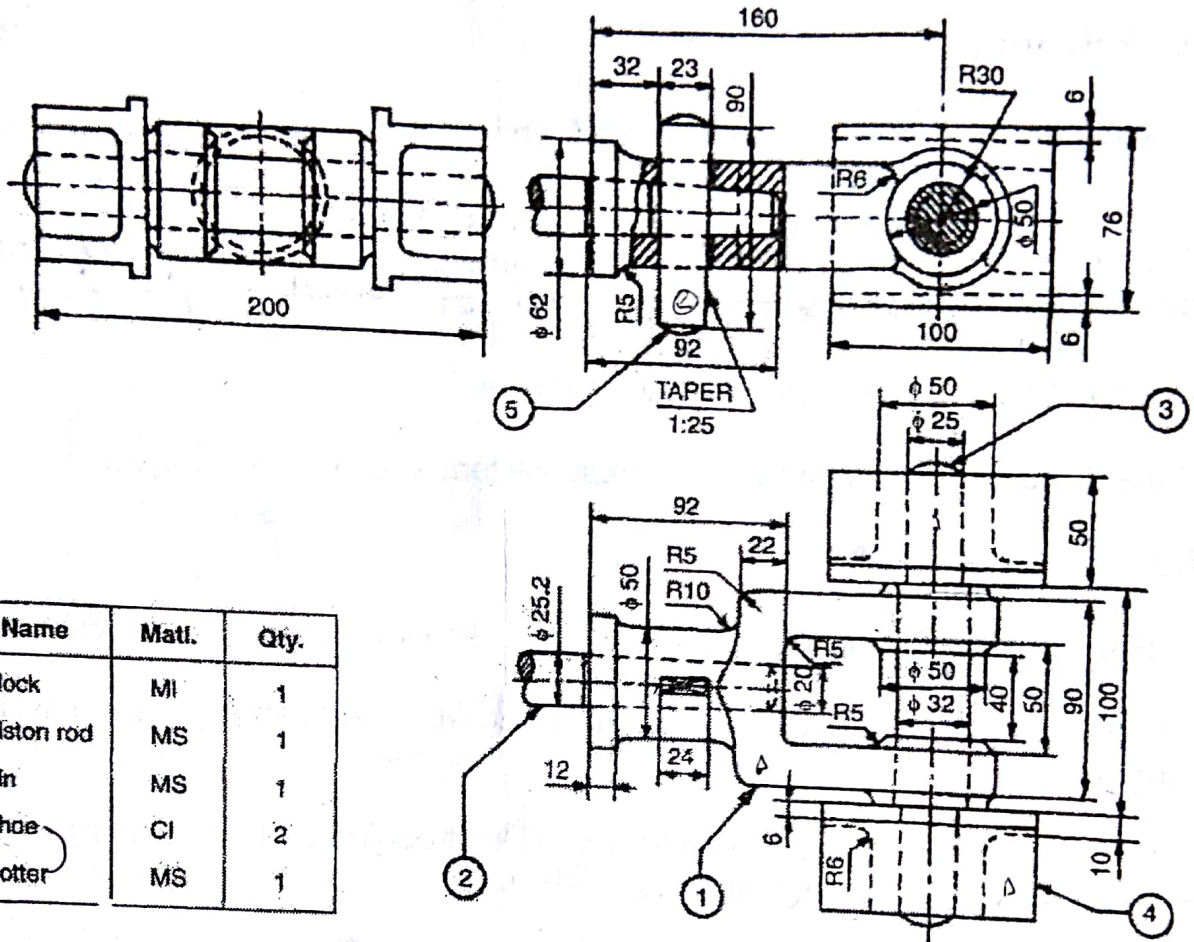
Parts List

Part No.	Name	Matl.	Qty.
1	Block	MI	1
2	Piston rod	MS	1
3	Pin	MS	1
4	Shoe	CI	2
5	Cotter	MS	1

Steam engine crosshead

FACULTY OF ENGINEERING

B.E. 4/4 (Mech. / Prod.) I Semester (Main) Examination, November 2010

PRODUCTION DRAWING

Time : 3 Hours]   [Max. Marks : 75

Note : 1) Answer *all* questions.
2) Missing data, if *any* may **suitably** be assumed.
3) Tolerance table to be **provided**.

PART – A   (25 Marks)

1. Write the basic principle involved in arriving the sizes of the drawing sheet.

2. Give the conventional representations of a cylindrical helical tension spring.

3. Define clearance fit, Interference fit and Transition fit.

4. Write the expression relating lower deviation of shaft to upper deviation.

5. Indicate the roughness symbols and roughness values for roughness N_1 and N_7.

6. Show by a sketch the position of the specification of surface roughness in the symbol.

7. Explain the following symbol :

   Milled
   $\frac{1.6}{2.5}$
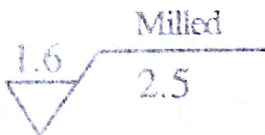
8. Expand the following abbrevations :
   a) HTS   b) CHD   c) CRS

9. Explain the position of the symbol with regard to the reference line

10. Indicate the recommended tolerance grades for the following manufacturing processes.
   a) Housing   b) Grinding   c) Reaming

(This paper contains 3 pages)   1   **P.T.O.**

PART – B (50 Marks)

11. From the Assembly drawing of petrol engine connecting rod. Shown in Fig. 1.

Answer the following :

a) Give the fits for the following :

Calpha numeric value of resulting tolerances.

i) Connecting rod (1) and small end bush (4)

ii) Bearing brasses (3) and connecting rod (1) (10 Marks)

Part list

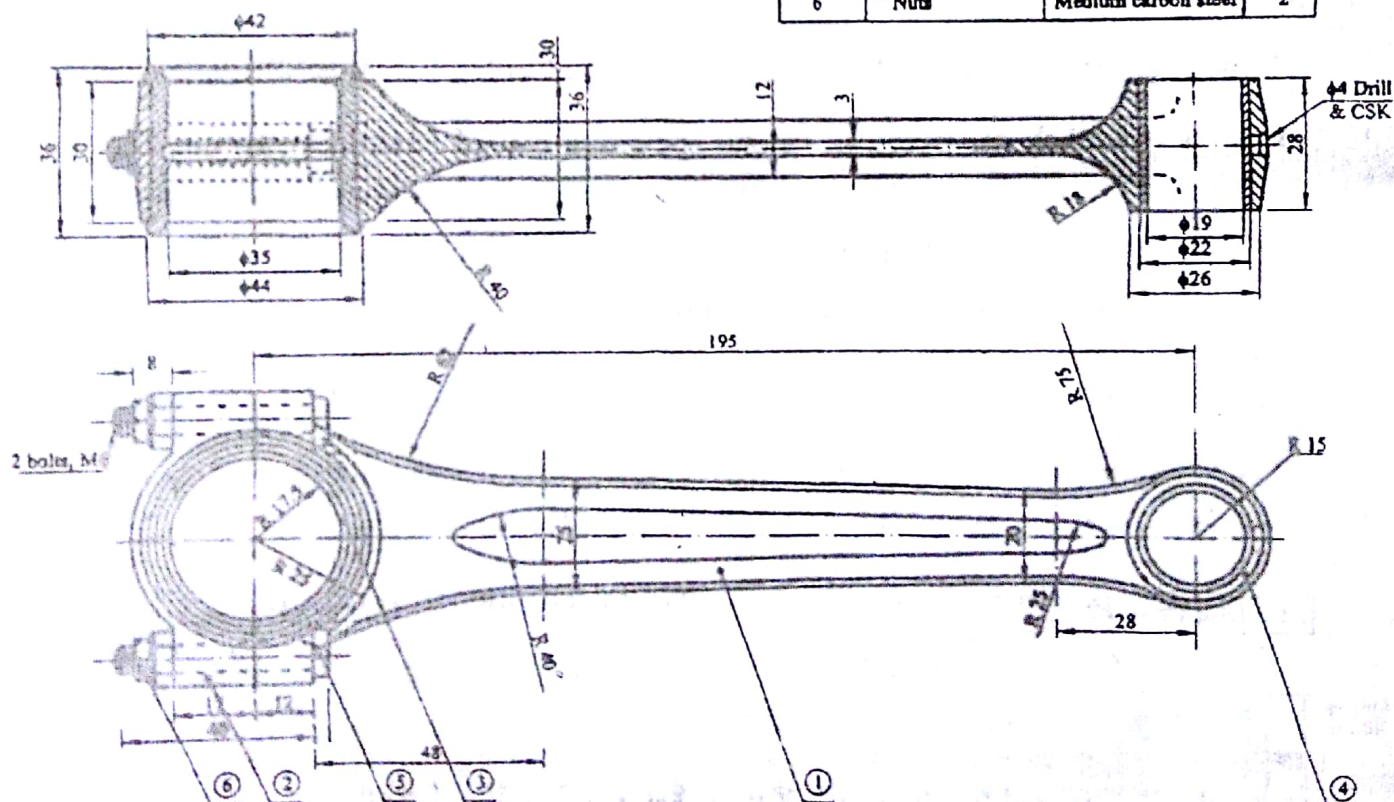| Item No.	Part Name	Material	Qty.
1	Connecting rod	Forged steel	1
2	Big end cap	Forged steel	1
3	Bearing brasses	Gun metal	2
4	Small end bush	Gun metal	1
5	Big end bolts	Medium carbon steel	2
6	Nuts	Medium carbon steel	2

Fig. 7.27 Assembly drawing of Petrol engine connecting rod

2

b) Draw the following component drawings and give necessary dimensional and geometric tolerances, surface roughness values and surface treatments.

   i) Connecting rod (1)

   ii) Big end cap (2)

   iii) Bearing brasses (3)

   iv) Small end bush (4)

   v) Big end bolts (5)   (25 Marks)

c) Give the process sheet for the component connecting rod (1), indicate work tool orientations drawing.   (15 Marks)

FACULTY OF ENGINEERING

B.E. 4/4 (M/P) I-Semester (New) (Main) Examination,
November/December, 2009 **WASAVI LIBRARY**

Subject : PRODUCTION DRAWING

Time : 3 Hours]

[Max. Marks : 75

Note : *Answer all questions. Missing data, if any, may suitably be assumed. Tolerance table to be provided :*

PART - A

(25 Marks)

1. Mention the contents of an Industrial drawing sheet and explain the relevance of five important items.

2. Give the conventional representations of a semi-elliptic leaf spring with centre band.

3. What is basic size, actual size, maximum and minimum limit of size ?

4. What is 'hole basis' and 'shaft basis' for fits ?

5. Indicate the roughness symbols and roughness values for roughness N_2 and N_5.

6. Show by a sketch the position of the specification of surface roughness in the symbol.

7. Explain the following symbol :

   Milled

8. Expand the following abbreviations :
   (a) HTS   (b) TCS and   (c) CRS.

9. What is the purpose of caulking and fullering ?

10. Indicate the recommended tolerance grades for the following manufacturing processes :
    (a) Drilling with fixture
    (b) Reaming
    (c) Housing

101053

PART - B

(50 Marks)

11. From the Tail stock shown in Figure 1.

Part list

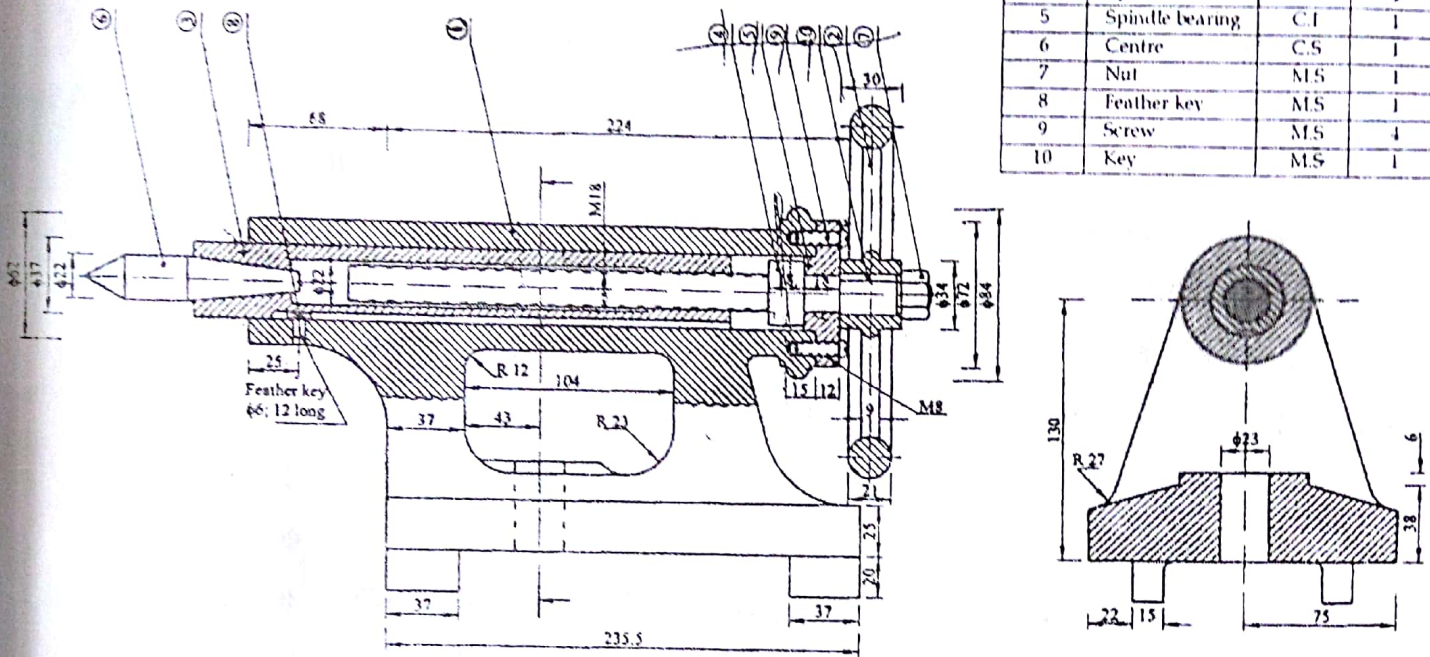| Item No.	Part Name	Material	Qty.
1	Body	C.I	1
2	Hand wheel	C.I	1
3	Barrel	M.S	1
4	Spindle	M.S	1
5	Spindle bearing	C.I	1
6	Centre	C.S	1
7	Nut	M.S	1
8	Feather key	M.S	1
9	Screw	M.S	4
10	Key	M.S	1

Fig. 1. Assembly drawing of a tail stock

Answer the following :

(a) Give the fits for the following :   **15**
   (alpha numeric value and resulting tolerances)
   (i) Barrel (3) and spindle (4)
   (ii) Hand wheel (2) and key (10)
   (iii) Body (1) and Barrel (3)

(b) Draw the following components drawings and give necessary dimensional and   **20**
   geometric tolerances, surface roughness values and surface treatments.
   (i) Body (1)
   (ii) Spindle bearing (5)
   (iii) Hand wheel (2)
   (iv) Centre (6)

(c) Give the process sheet for the component :   **15**
   Spindle (4), indicating work tool orientations drawings.

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FACULTY OF ENGINEERING

B.E. 4/4 (M/P) I Semester (New) (Suppl.) Examination, June/July 2010
PRODUCTION DRAWING

Time: 3 Hours]

[Max. Marks : 75

Note :   *Answer **all** questions **missing** data, if any may **suitably** be assumed, tolerance table to be **provided**.*

PART – A

25

1. What are the different standard sizes of drawing sheets ? Give their designations and sizes.

2. Give the conventional representation of Ratchet and Pinion.

3. Show the symbolic representation of a Hydraulic pressure intensifier.

4. Distinguish between clearance fit, interference fit and transition fit.

5. Find the limits of the following shafts and holes 20 h 6, 60p7, 20H 6 and 75 H11.

6. Indicate the roughness symbols and roughness values for Roughness Grades N9 and N1.

7. Give the description for the following notes on a drawing.

   THD RELIEF, ϕ 30 WIDE 4.5.

8. Explain the following symbol

◎	0.02
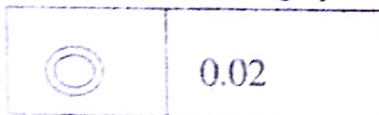
9. Expand the following abbreviations

   a) HTS   b) BRC   c) CSK

10. Indicate the recommended tolerance grades for the following manufacturing processes.

   a) Commercial grinding

   b) Lapping

   c) Reaming.

<div align="center">PART – B</div>   50

11. From the assembly drawing of pipe vice shown in figure 1. Answer the following :

   a) Give the fits for the following : Calpha numeric value and resulting tolerance.   10
      i) Housing (1) and Handle screw (2)

      ii) Handle bar (3) and Handle bar bush (4)

   b) Draw the following components drawings and give necessary dimensional and geometrical tolerances, surface roughness values and surface treatments.   25

      i) Handle screw (2)

      ii) Handle bar (3)

      iii) Handle bar bush (4)

      iv) JAW (5)

      v) Set screw (6)

   c) Give the process sheet for the component Handle bar (3), indicating work tool orientater drawings.   15

15 138 93 15

30 60 φ12

60

R 6
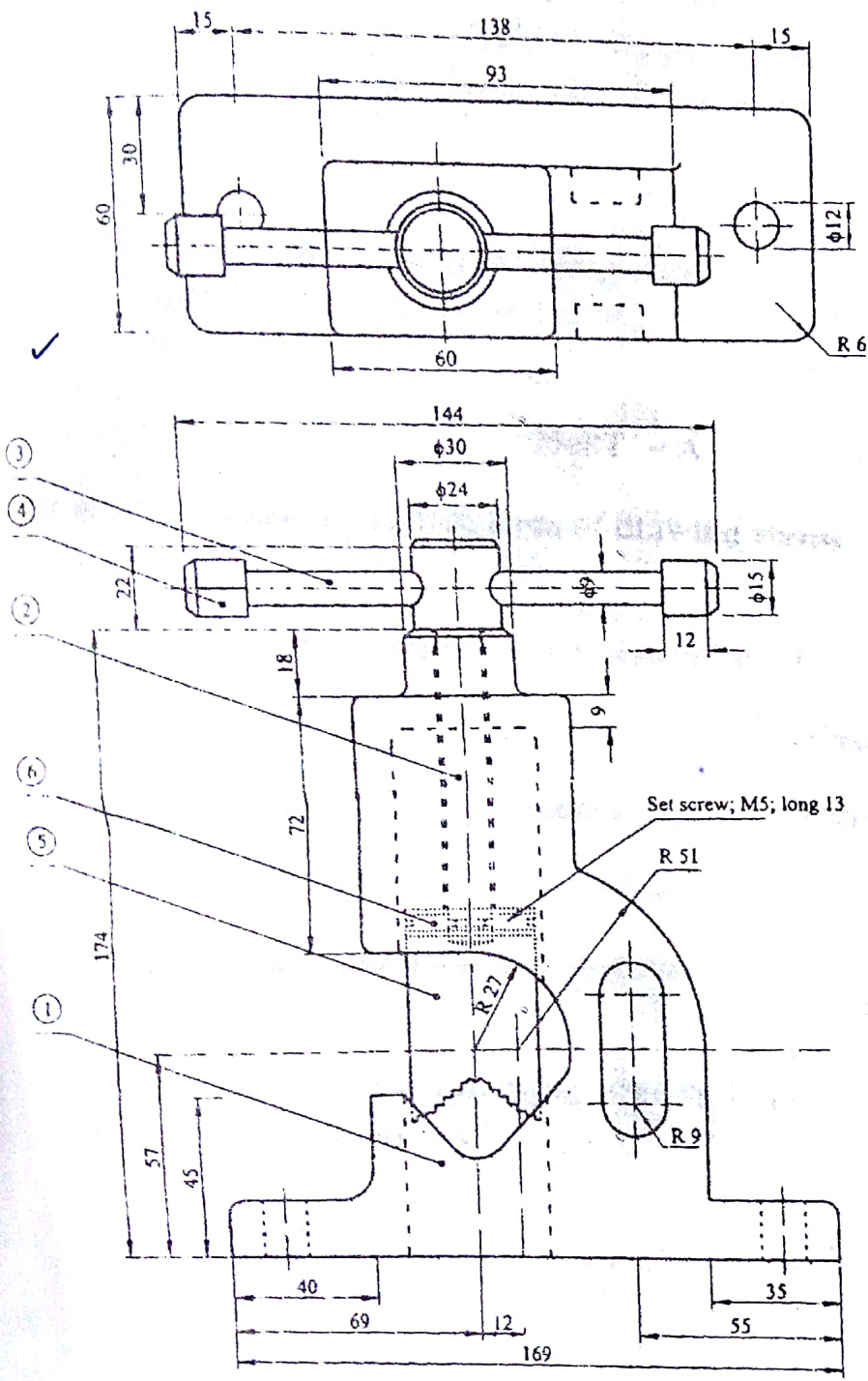
Part list			
Item No.	Part Name	Material	Qty.
1	Housing	C.I	1
2	Handle screw	M.S	1
3	Handle bar	M.S	2
4	Handle bar bush	M.S	1
5	Jaw	C.I	2
6	Set screw	M.S	2

144

φ30
φ24

③
④
②

22

φ15

12

18

9

42

72

174

⑥
⑤

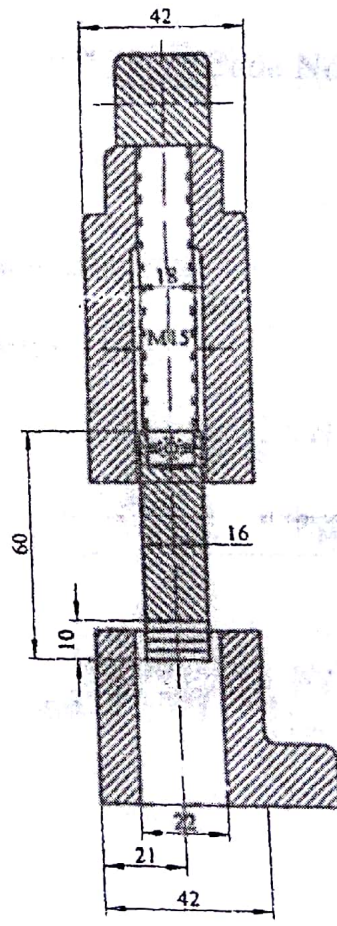Set screw; M5; long 13

R 51

R 27

R 9

①

57 45

40 35

69 12 55

169

60

10

16

22

21

42

Fig. 1.0 Assembly Drawing of Pipe vice