D 42018 (Pages : 4) Name.....

Reg. No.....

THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2007

ME/AM/04/305—MACHINE DRAWING

(2004 Admissions)

Time : Three Hours Maximum : 100 Marks

Unit I and II contains two questions with sub-sections (a) and (b).
Answer any **one** *question.*
Unit III contains one question with sub-sections (a) and (b). Answer (a) or (b).

Unit I

1. (a) Draw a proportional sketch of a solid muff coupling for a shaft of 25 mm. diameter. (15 marks)

   (b) Draw a hexagonal headed bolt of size 16 mm. diameter. (5 marks)

Or

2. (a) Two shafts of diameter 30 mm. are to be joined by a bush type flexible coupling. Draw and dimension the coupling. (15 marks)

   (b) Sketch the locking arrangement using a screw pin of a hexagonal headed nut. (5 marks)

Unit II

3 (a) Define fit and sketch the three types of fit. (8 marks)

(b) The details of a plummer block are shown in Fig. 1 (on page 2). Draw :

(i) Half-sectional front view (left half in section).

(ii) Top view. (17 marks)

Or

4. (a) Sketch the systems of fit as per hole basis and shaft basis system. (6 marks)

   (b) The working drawings of a universal coupling are shown in Fig. 2 (on page 3). Assemble the parts and draw :

   (i) Half-sectional front view (top half in section).

   (ii) Side view. (19 marks)

Turn over

Unit III

5. (a) The part details of the petrol engine connecting rod are given in Fig. 3 (page 3). Assemble the parts and draw :

(i) Half-sectional front view.

(ii) Top view. (35 + 20 = 55 marks)

Or

(b) The working drawings of an shaper tool head are shown in Fig. 4 (page 4). Draw the following view of the tool head assembly :

(i) Full sectional front view.

(ii) Left side view. (35 + 20 = 55 marks)

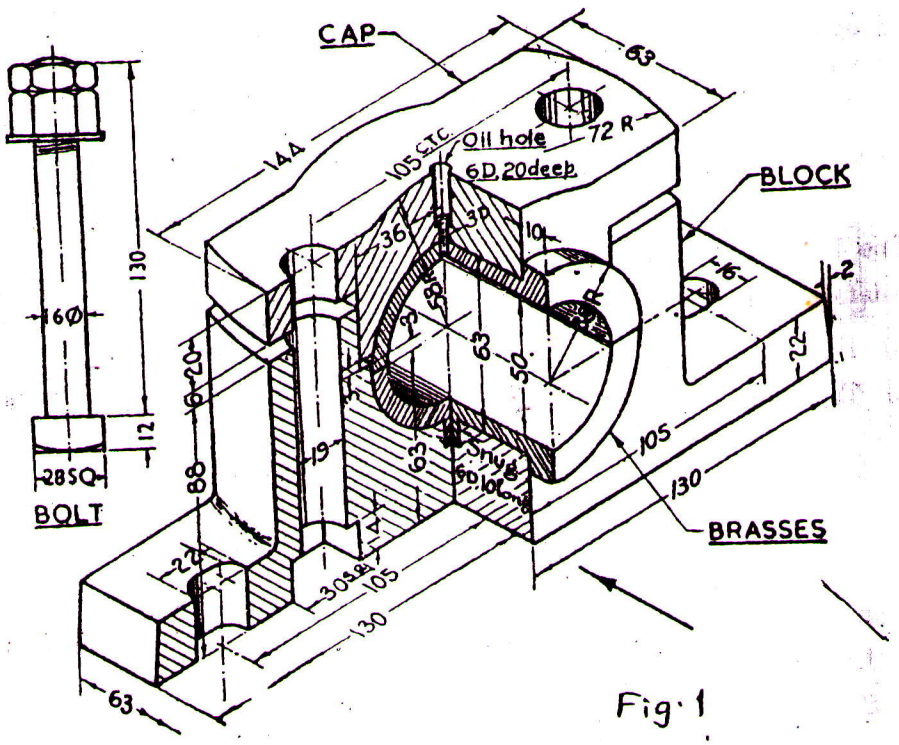
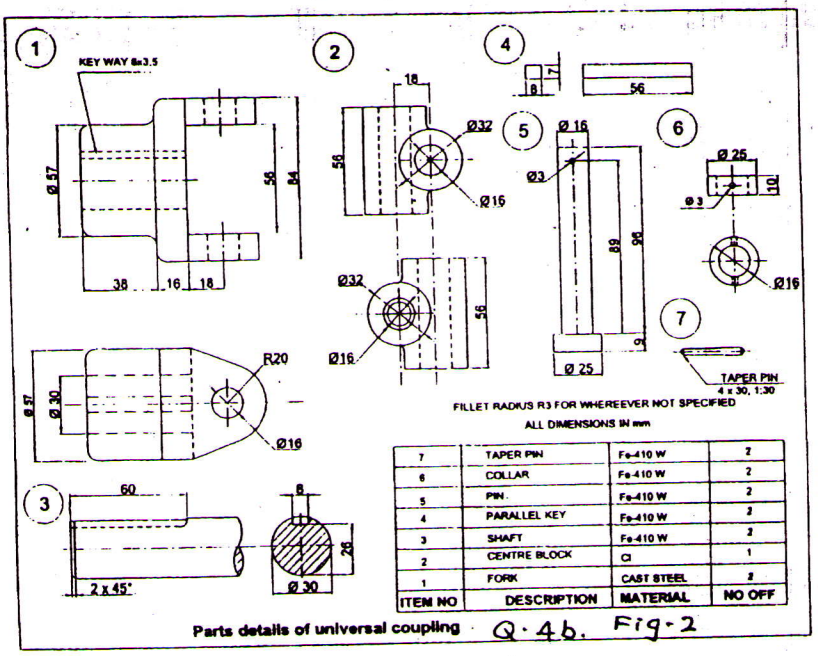
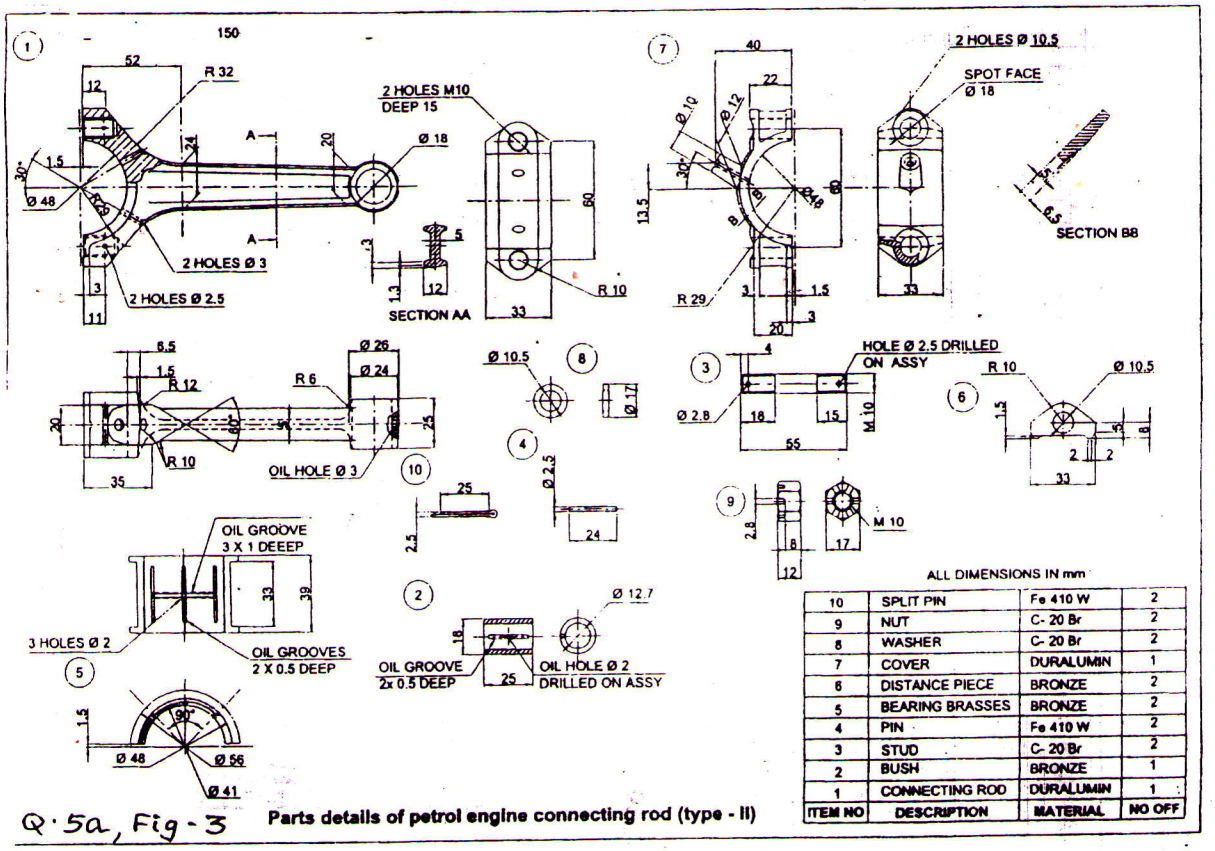


Fig. 1



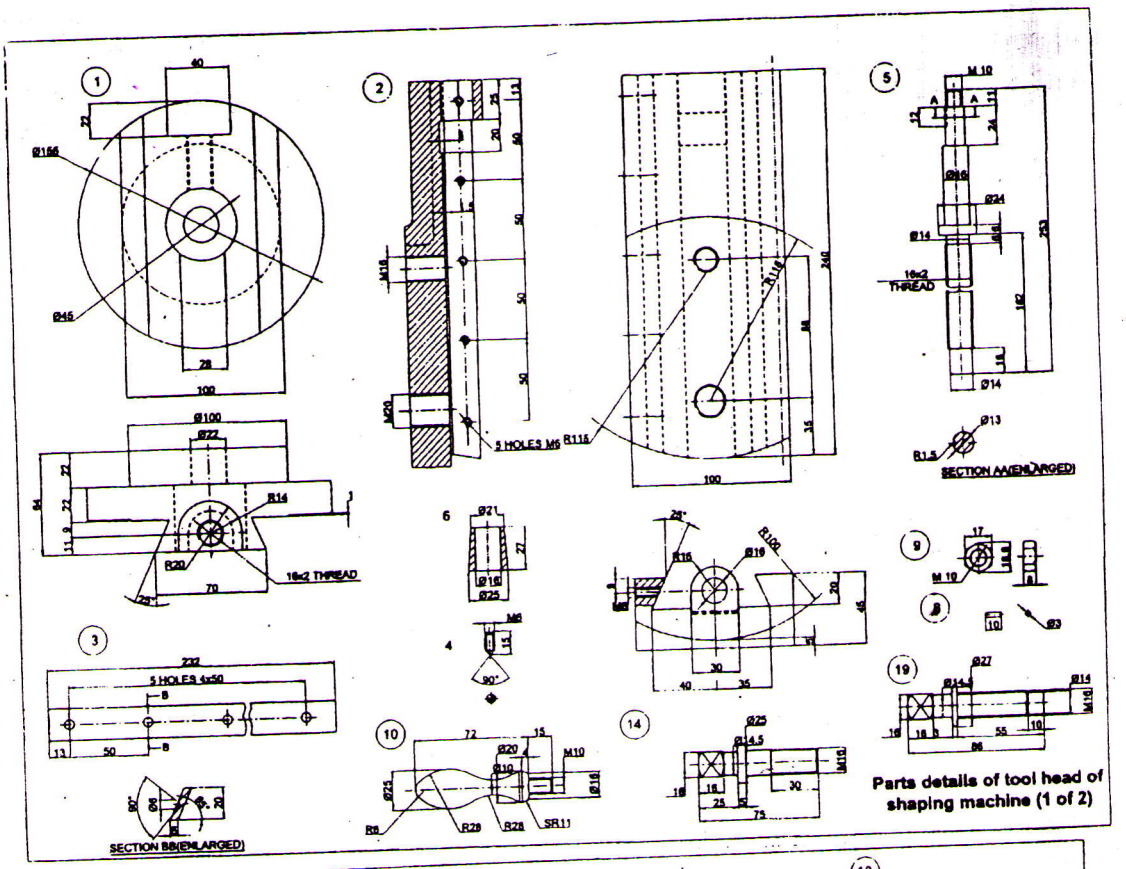
ITEM NO	DESCRIPTION	MATERIAL	NO OFF
7	TAPER PIN	Fe-410 W	2
6	COLLAR	Fe-410 W	2
5	PIN	Fe-410 W	2
4	PARALLEL KEY	Fe-410 W	2
3	SHAFT	Fe-410 W	2
2	CENTRE BLOCK	CI	1
1	FORK	CAST STEEL	2

Parts details of universal coupling Q·4b. Fig-2

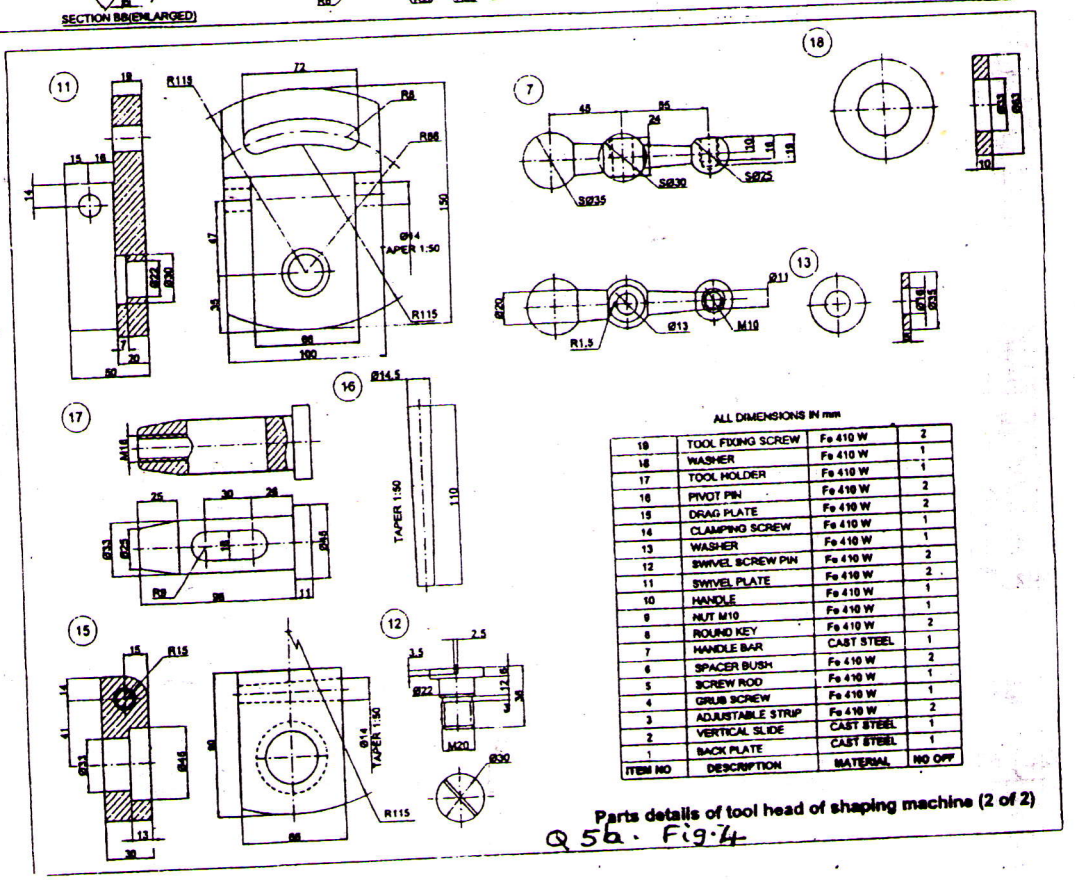


ITEM NO	DESCRIPTION	MATERIAL	NO OFF
10	SPLIT PIN	Fe 410 W	2
9	NUT	C- 20 Br	2
8	WASHER	C- 20 Br	2
7	COVER	DURALUMIN	1
6	DISTANCE PIECE	BRONZE	2
5	BEARING BRASSES	BRONZE	2
4	PIN	Fe 410 W	2
3	STUD	C- 20 Br	2
2	BUSH	BRONZE	1
1	CONNECTING ROD	DURALUMIN	1

Q·5a, Fig-3 Parts details of petrol engine connecting rod (type - II)



Parts details of tool head of shaping machine (1 of 2)



ALL DIMENSIONS IN mm

ITEM NO	DESCRIPTION	MATERIAL	NO OFF
19	TOOL FIXING SCREW	Fe 410 W	2
18	WASHER	Fe 410 W	1
17	TOOL HOLDER	Fe 410 W	1
16	PIVOT PIN	Fe 410 W	2
15	DRAG PLATE	Fe 410 W	2
14	CLAMPING SCREW	Fe 410 W	1
13	WASHER	Fe 410 W	1
12	SWIVEL SCREW PIN	Fe 410 W	2
11	SWIVEL PLATE	Fe 410 W	2
10	HANDLE	Fe 410 W	1
9	NUT M10	Fe 410 W	1
8	ROUND KEY	Fe 410 W	2
7	HANDLE BAR	CAST STEEL	1
6	SPACER BUSH	Fe 410 W	2
5	SCREW ROD	Fe 410 W	1
4	GRUB SCREW	Fe 410 W	1
3	ADJUSTABLE STRIP	Fe 410 W	2
2	VERTICAL SLIDE	CAST STEEL	1
1	BACK PLATE	CAST STEEL	1

Parts details of tool head of shaping machine (2 of 2)

Q5b. Fig-4