

**DAR ES SALAAM INSTITUTE OF TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT
TEST2 JANUARY, 2017**

CLASS: OD 15 ME
MODULE: MET 05101 ENGINEERING DRAWING
TIME: 2 HOURS

INSTRUCTIONS: Attempt all questions

- 30** 1. (a) Name the type of section view given in figures 1, 2, 3 and 4 below.

Figure 1A

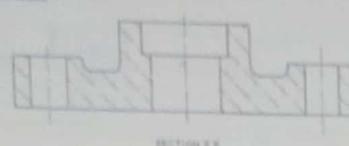


Figure 1B

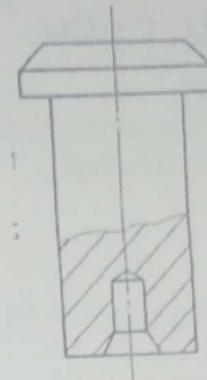
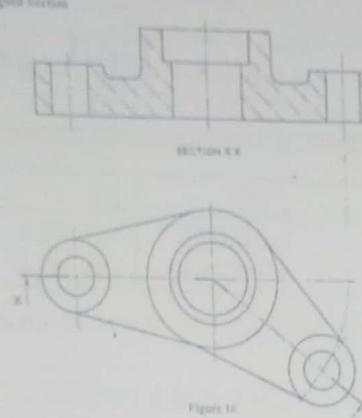


Figure 2 partial section



Figure 3 revolved section



SECTION XX

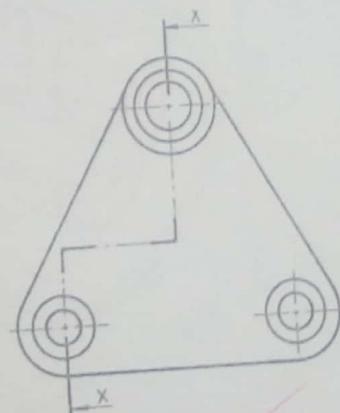


Figure 4 offset section

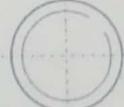


Figure 5 external threads

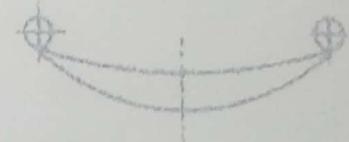


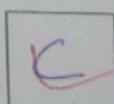
Figure 6 semi-elliptical leaf spring

- 4/2** (b) Write down the drawing conventional representation given by figures 5 and 6 shown above.

- (c) In a scaled drawing, a reduced scale is indicated by:

(A) 4:1 (B) 5:2 (C) 1:2 (D) 2:1

- 4/2** (d) Write in full the following abbreviations as applied in Engineering Drawing:



8

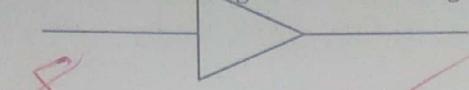
(i) DRG Drawing.....

(ii) PCD pitch circle diameter

(iii) M/C....Machinio.....

(iv) MatlMaterial.....

- (e) Write the meanings of the following Electrical/Electronics symbols as applied in engineering.



8 Figure 7 Amplifier

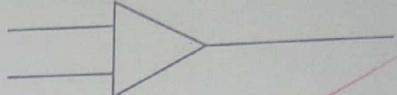


Figure 8 Integrated Circuit

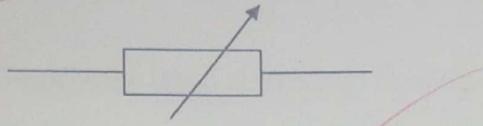


Figure 9 Variable Resistor

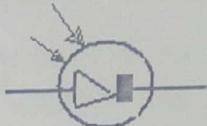


Figure 6 Light sensitive diode

- 2 Find upper deviations, lower deviations, maximum diameters, minimum diameters, tolerances, allowances and type of fit for 100 H7/g6

	H7	g6
100	+0.035 +0.000	-0.012 -0.034

3. An exploded view of CASTOR is shown in figure 7 below. Make a two view assembly drawing in first angle projection comprising of:

- (a) a front elevation in section (b) a plan (c) add a part list

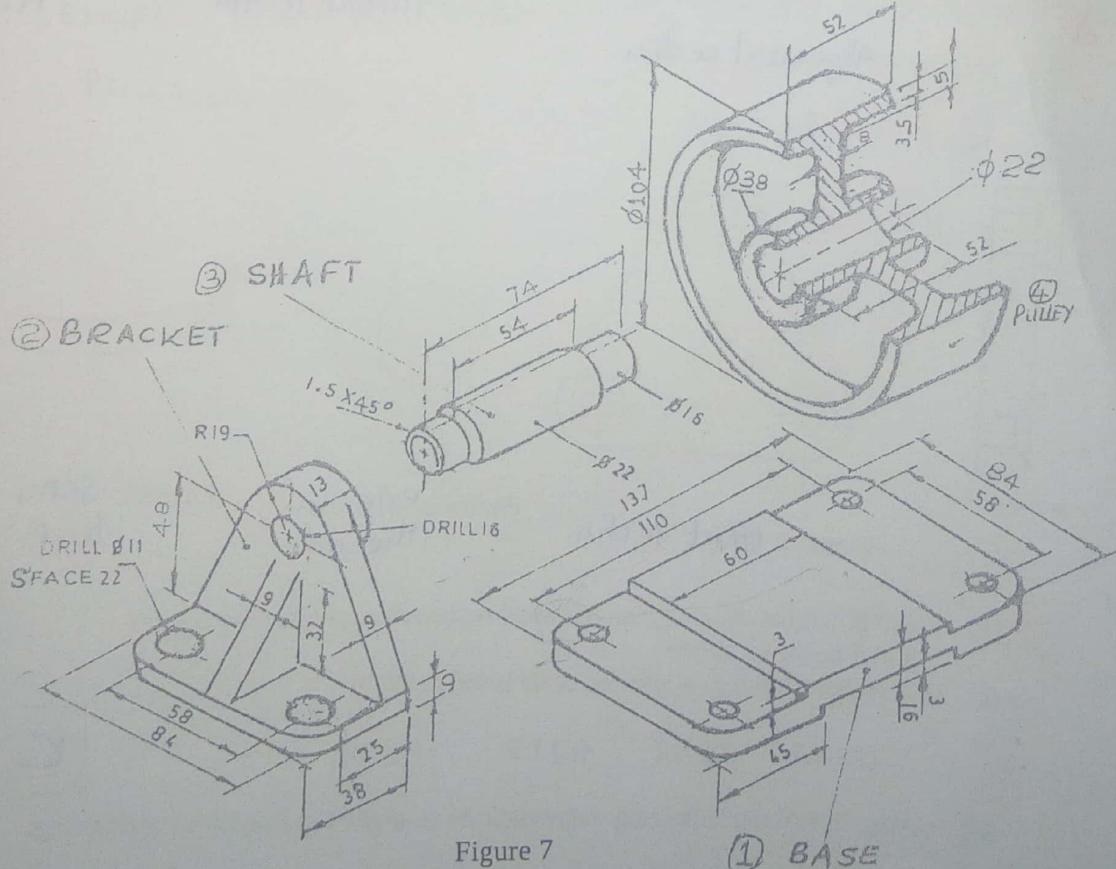
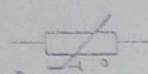
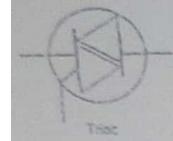
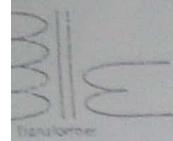


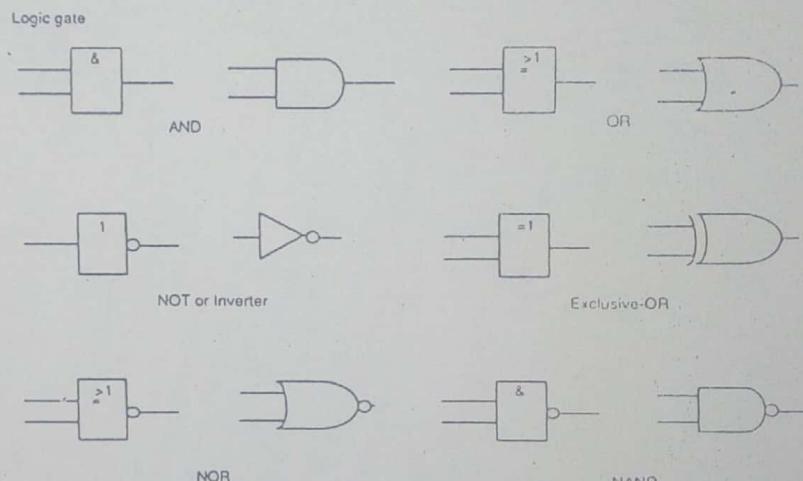
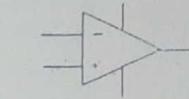
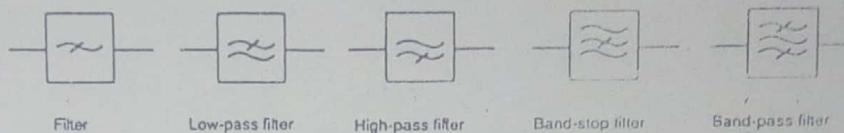
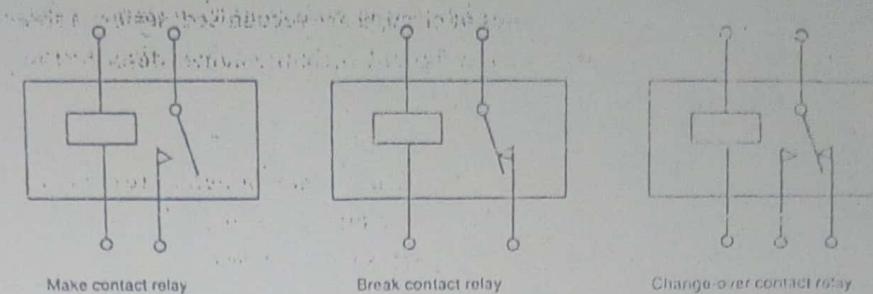
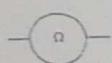
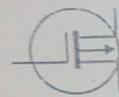
Figure 7

105

	shaft	Hole
100	H7	96.
Upper deviations	+0.035	-0.012
Lower deviations	+0.000	-0.024
Minimum diameter	100.035	100.012
Maximum diameter	100	99.966
Tolerance.	100 to 100.035	100.012 up to 99.966
Allowance	0.384	0.384



Junction-gate field-effect transistor (JGFET)
n-channel



2.6 Circuit diagrams

Circuits A circuit consists of a number of components connected together in such a way as to carry out a specific task. A circuit must have a source of electrical power and therefore every circuit must have some form of power unit connected to it. Most electronic circuits make use of very low power and can be operated from small d.c. supplies.

Pascal.

SYMBOLS	ELECTRICAL CIRCUITS		
no connection	electro magnet	inductor	frequency mtr
connected	resistance	microphone	ammeter
single pole	resistance	earphone	dc motor
single cell	variable res	loudspeaker	ac motor 240V
multi cell	filament lamp	moving coil sp	series motor
earth chassis	capacitor	handset	ac repulsion motor
fuses	push button	contactor	
winding	two pole sw	relay	
			3 phase motor 415V 3~ 50Hz
transformer	transformer	contact	

DAR ES SALAAM INSTITUTE OF TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT
FIRST SEMESTER 2016/17 EXAMINATIONS, FEBRUARY, 2017

CLASS: OD 15 ME, CO, IT
MODULE: MET 05101 ENGINEERING DRAWING
TIME: 3 HOURS

INSTRUCTIONS:

1. Follow all instructions written on your answer booklet.
2. This paper consists of two sections, Section A and Section B.
3. Section A consists of **Ten (10)** questions. Attempt all questions.
4. Section B consists of **Four (4)** questions. Attempt question 2 and 3 and **any one** from the remaining two .
5. Distribution of marks is indicated on each question.
6. You are not allowed to write anything in the question paper
7. Write in black/blue ink and draw in pencil
8. Mobile phones are not allowed in the examination room.

This paper consists of 6 printed pages

SECTION A

1.1 Write down the drawing conventional representation given by figures 1, 2, 3, and 4 shown below. (4 marks)

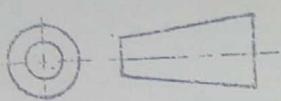


Figure 1

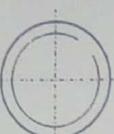
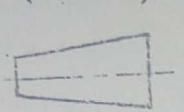


Figure 2

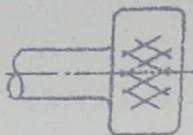


Figure 3

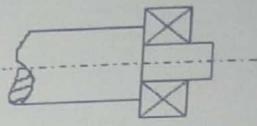


Figure 4

1.2 Mention seven types of section views (7 marks)

1.3 Label the type of section view given by Figure 5, 6, 7 and 8 bellow. (4 marks)

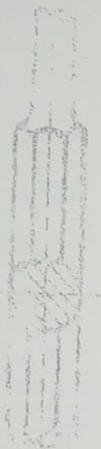


Figure 5

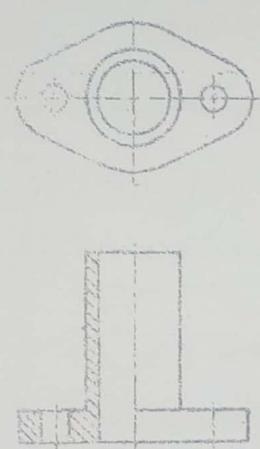


Figure 6

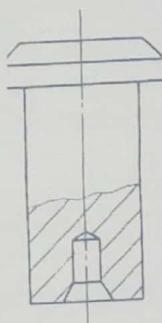
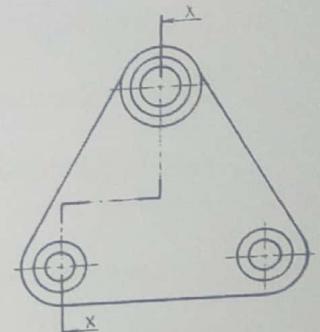


Figure 7



Figure 8



1.4 A front and end elevation views of an object are given below Figure 9. Study carefully and write down the projection angle which the views are given in. (2 marks)

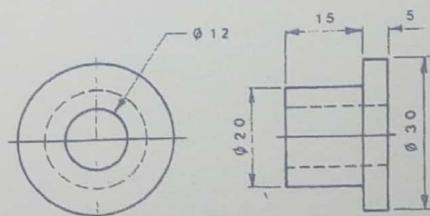


Figure 9

1.5 Figures 10, 11, 12 and 13 show four types of keys used as locking mechanism between shafts and gears/hubs. Give the names to each one. (4 marks)

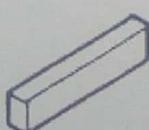


Figure 10

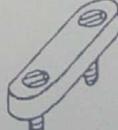


Figure 11

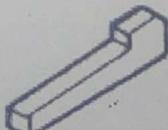


Figure 12



Figure 13

1.6 Study the given welding symbols and explain its meaning. (4 marks)

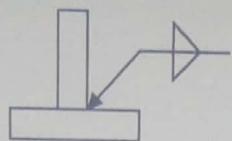


Figure 14

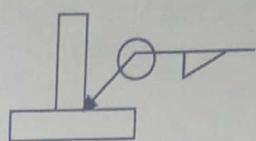


Figure 15

1.7 Explain for what the following abbreviations stand for (5 marks) does

- (i) TOL (ii) SPEC (iii) MATL (iv) QTY (v) CYL

1.8 Give the names of the screw heads shown by figures 14, 15, 16 and 17 below. (4 marks)

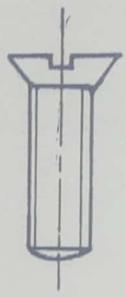


Figure 14

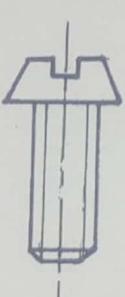


Figure 15

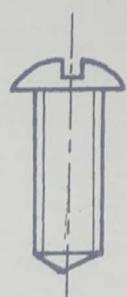


Figure 16

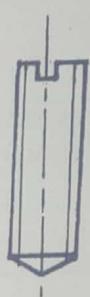
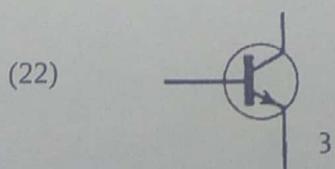
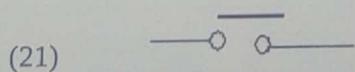
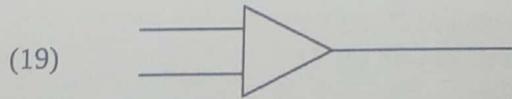
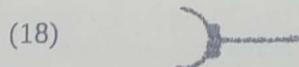


Figure 17

1.9 At what angle are hatching/sectioning lines in sectioned views drawn? (1 mark)

1.10 Write the meanings of the following Electrical/Electronics symbols as applied in engineering drawing. (5 marks)



Phase
3~
50Hz

INTERCHANGEABILITY
of parts

SECTION B

- 2.1 Figure 26 shows a machine component to be manufactured. Briefly explain the meaning of each symbol /term. (10 marks)

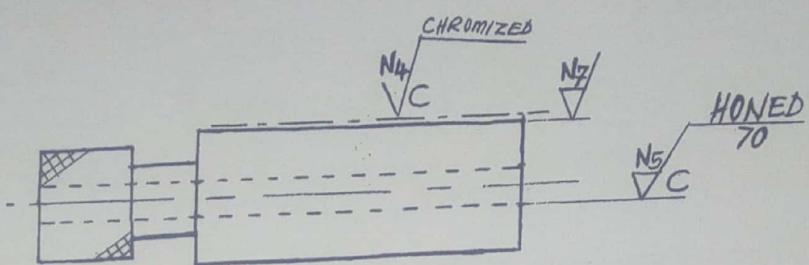


Figure 26

- 2.2 Find the tolerances and the type of fit for 80 G7/h6 (Extraction from the table is as shown below: (10 marks)

	G7	h6
80	+0.040	+0.000
	+0.010	-0.019

- 3.1 Briefly explain what Assembly Drawing is (2 marks).
3.2 Mention three types of Assembly Drawing (6 marks)
3.3 You are supplied with the following items: System unit (Computer/PC), Monitor, Key board, Mouse, UPS, Printer, Scanner and Electrical extension cable. Using Installation assembly drawing, assemble the parts. (12 marks)
4. Figure 23 shows the details for the BELT PULLEY unit (1) consisting of a belt pulley (2), the bolt (3) and the bush (4). Draw full size with all parts assembled, including a suitable nut, the following views:
- (a) A sectional FE on YY
 - (b) A sectional EE on XX
 - (c) A plan
 - (d) Add a part list. (20 marks)

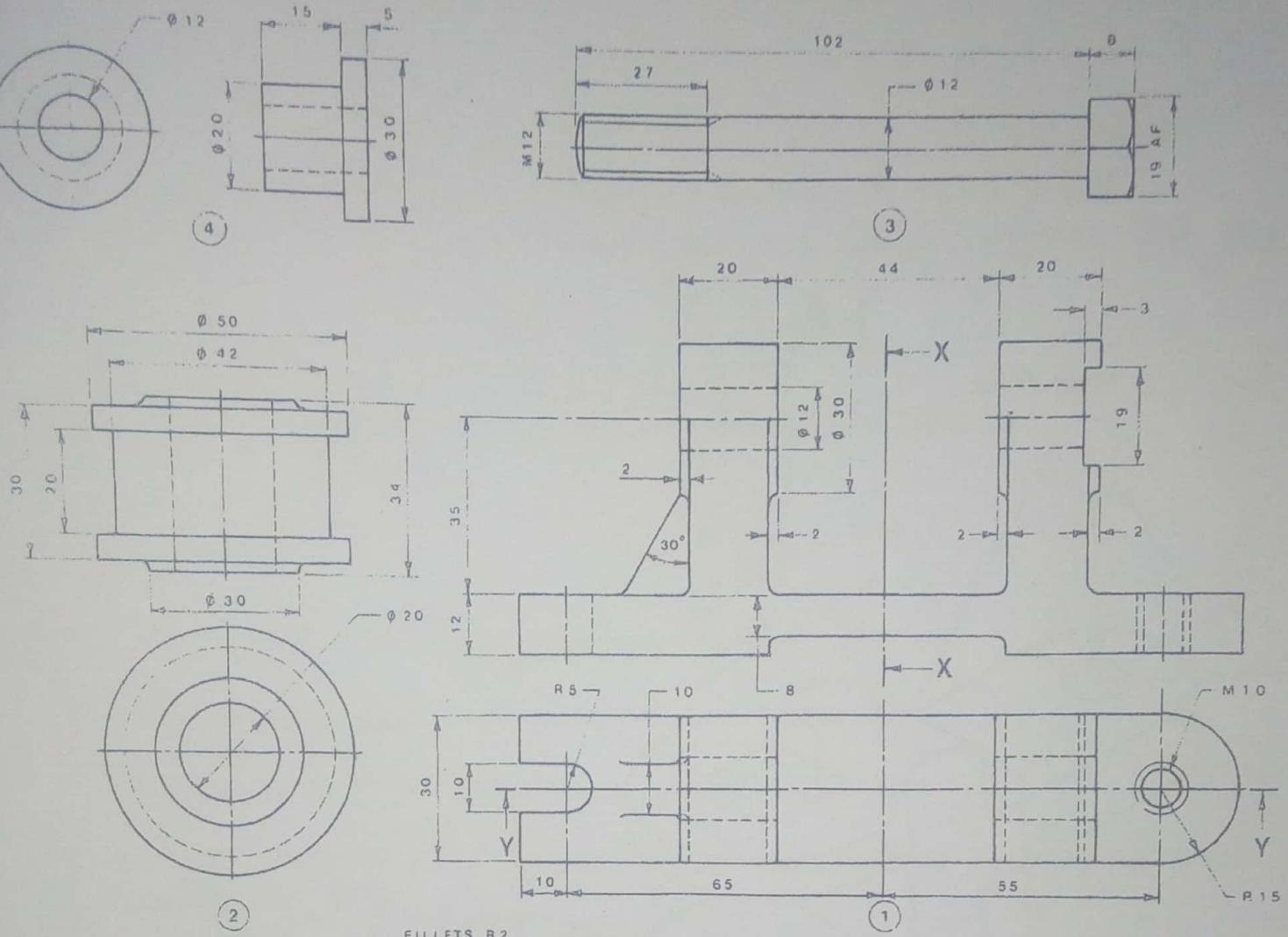


Figure 23

5

An exploded pictorial view fo a KNUCKLE JOINT is shown below in Figure. 24. With the parts assembled; draw the following views full size in first angle projection:

- (a) A sectional front elevation on cutting Plane A-A
- (b) A plan
- (c) Add a part list (20 marks)

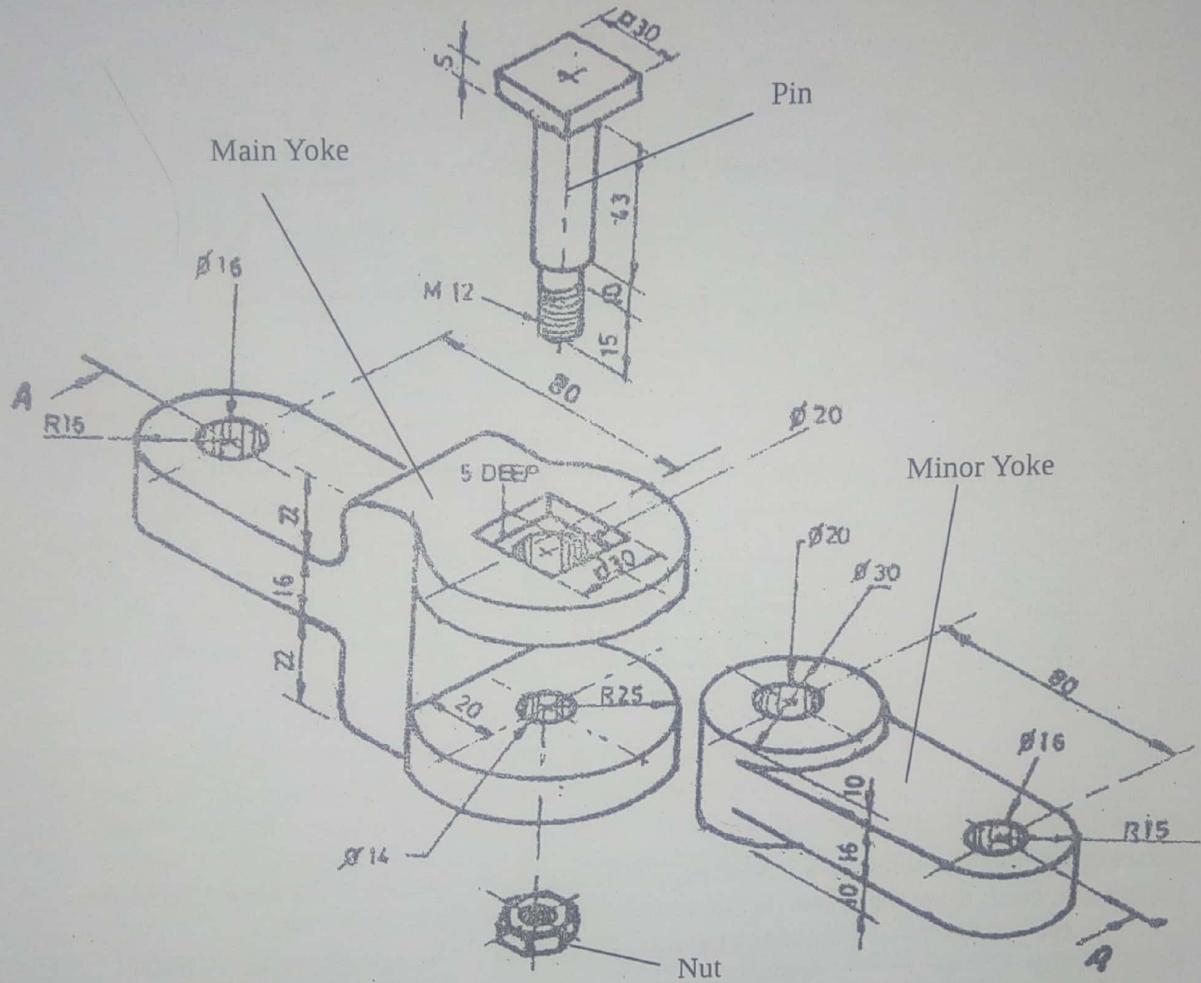
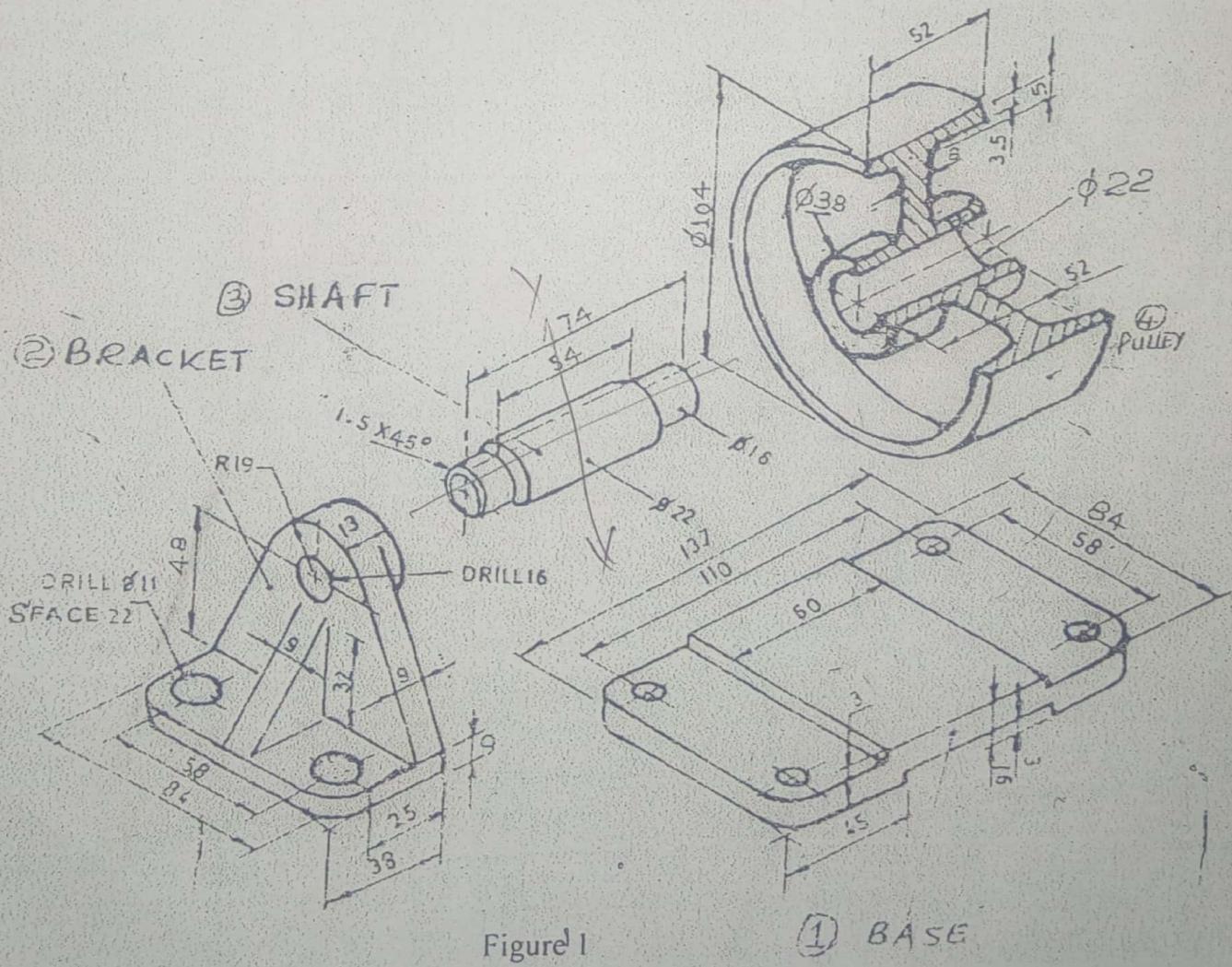


Figure 24

INSTRUCTIONS: Attempt all questions

1. Find tolerances, allowance and the type of fit for 280 H7/g6
2. Photo copy figure 1 below and add to the given detailed views necessary surface roughness/finish and suggest where necessary the type of fit.
3. An exploded view of CASTOR is shown in figure 1 below. Make a two view assembly drawing in first angle projection comprising of:
 - (a) a front elevation in section
 - (b) a plan
 - (c) add a part list



Mangala

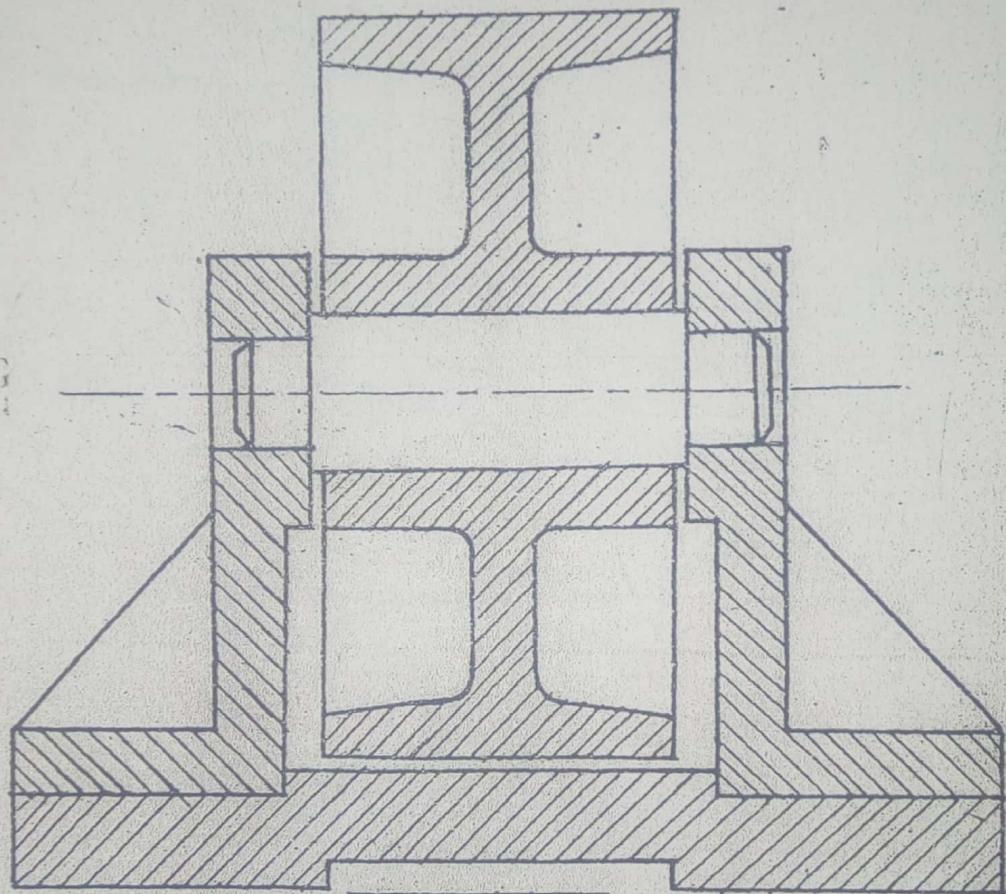
1-3

GCE NATIONAL EXAMINATION 1990
PAPAR 2
ANSWERS

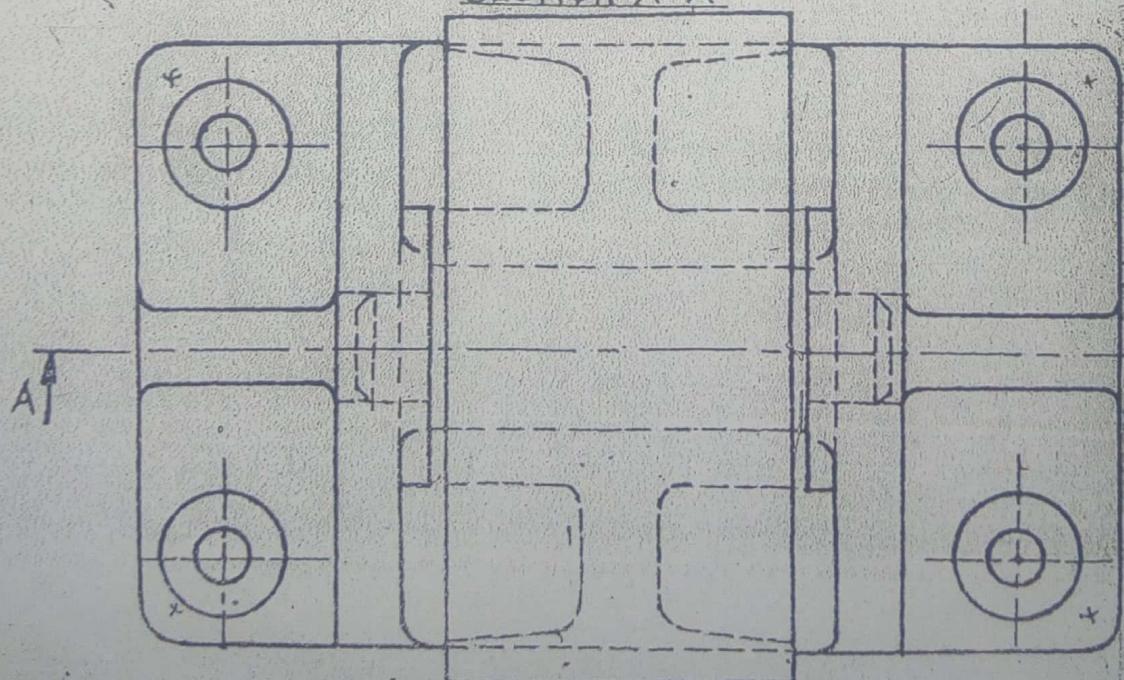
2.

To assemble the two given views in first angle projection.

3.



SECTION A-A



OMARY MBOGO

Amguland

3. An exploded pictorial view fo a KNUCKLE JOINT is shown below in Figure. 24. With the parts assembled; draw the following views full size in first angle projection:

- A sectional front elevation on cutting Plane A-A
- A plan
- Add a part list

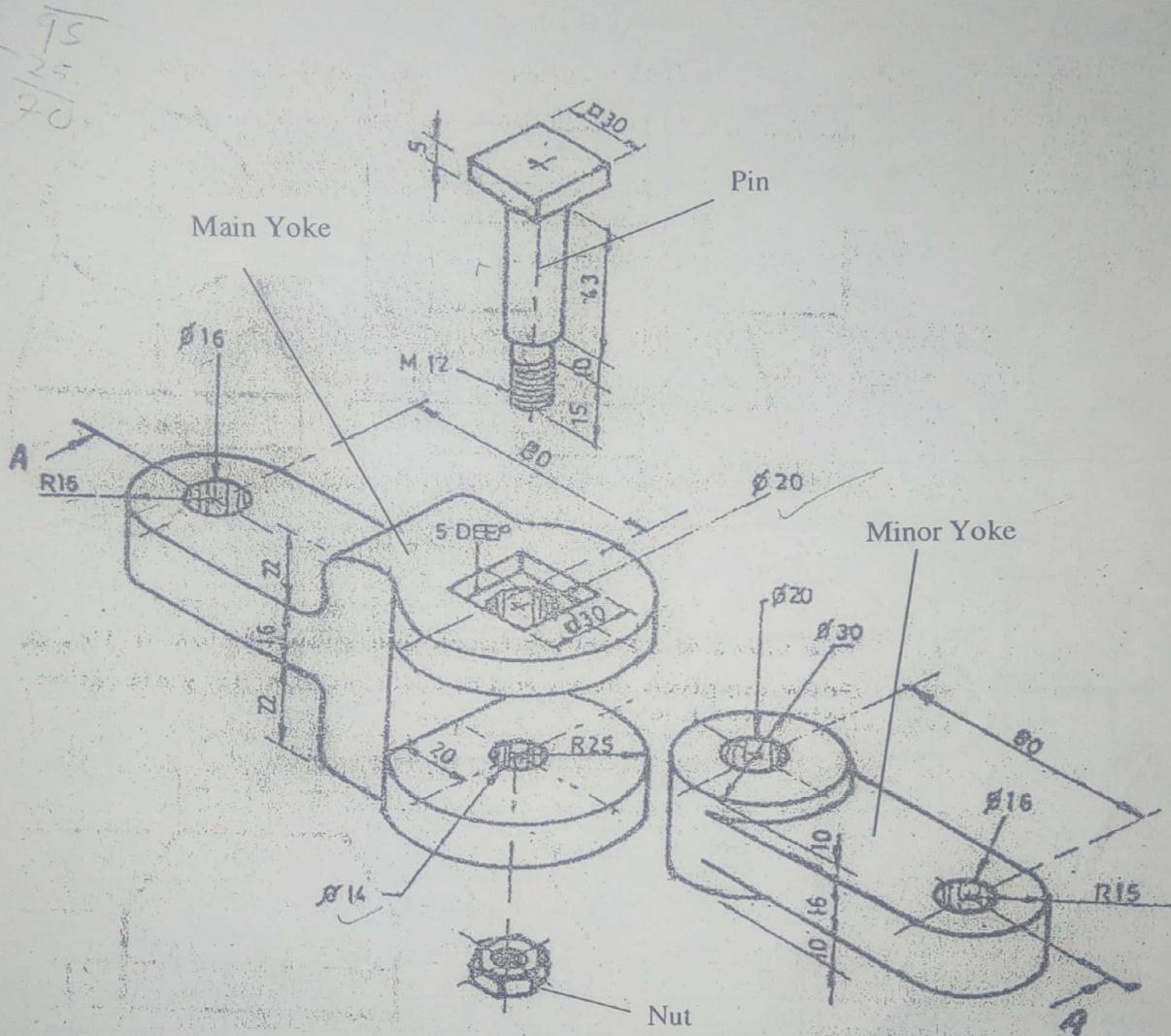
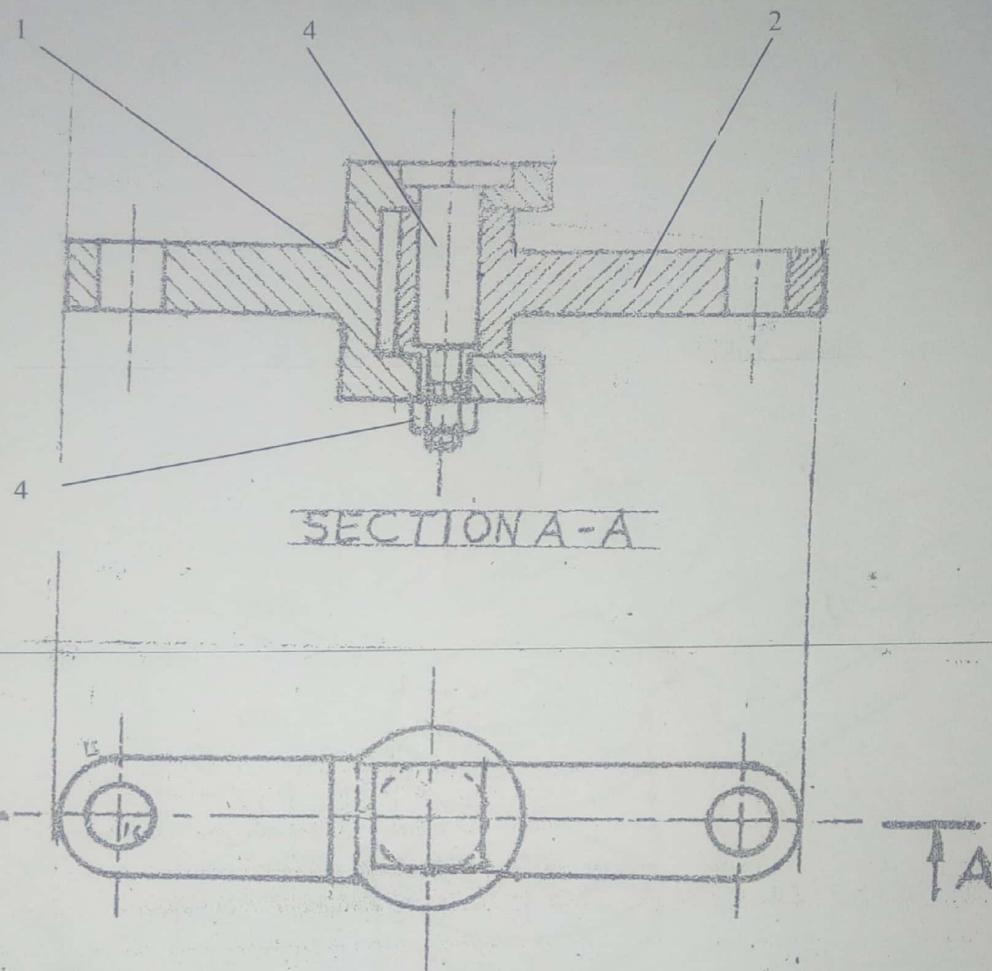


Figure 24

- (a) a sectional FE on YY
 (b) a sectional EE on ZZ
 (c) a plan showing hidden details.

Pascal

3. To assemble the following parts



Part list = 5 pts

NO	DESCRIPTION	QTY	MATL	STD	REMARKS
4	Nut	1	ms	M12	
3	Pin	1	ms		
2	Minor yoke	1	ms		
1	Main yoke	1	ms		

Title block = 5 pts

Title block space

Mtambø

washers and a 120 mm length of 40 mm diameter shaft. Add a part list.

- (a) a sectional FE on YY
 (b) a sectional EE on ZZ
 (c) a plan showing hidden details.
 (d) Add a part list. (42 marks)

Paschal

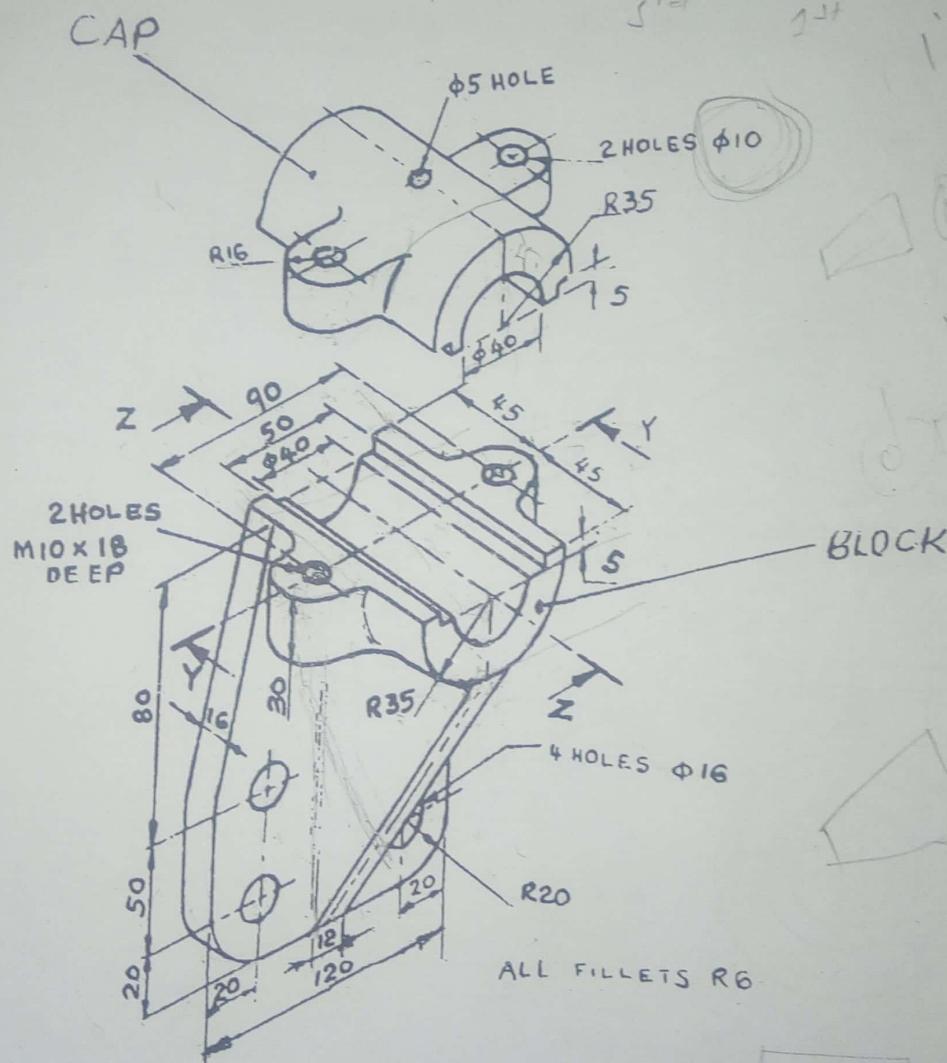


Figure 24

SECTION B (42 marks)

2. Figure 23 shows the details for the BELT PULLEY unit (1) consisting of a belt pulley (2), the bolt (3) and the bush (4). Draw full size with all parts assembled, including a suitable nut, the following views:

- (a) a sectional FE on YY
- (b) a sectional EE on XX
- (c) a plan
- (d) add a part list. (42 marks)

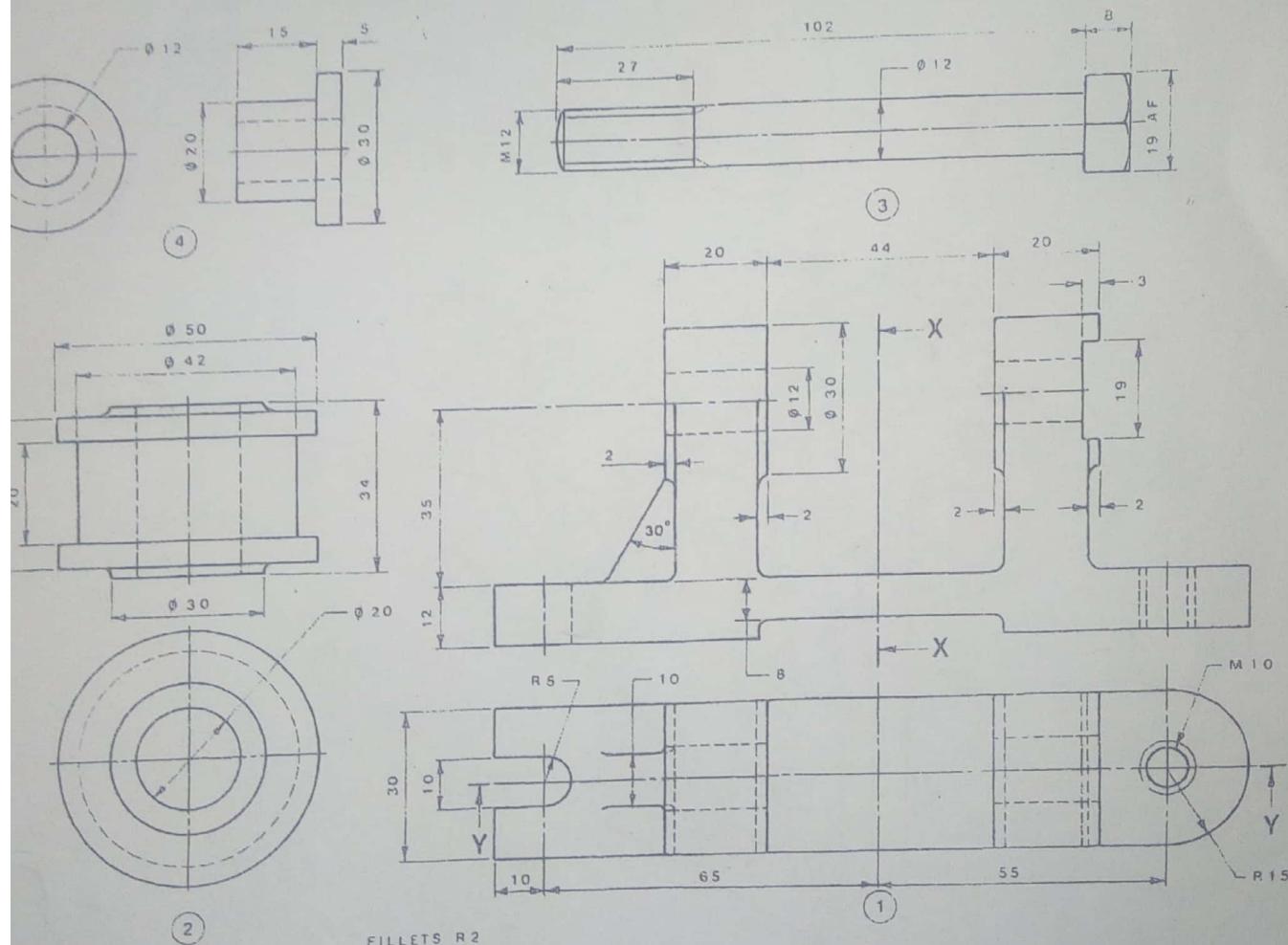
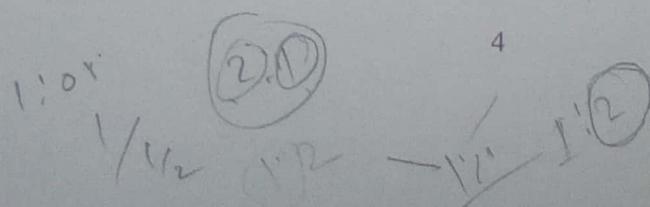


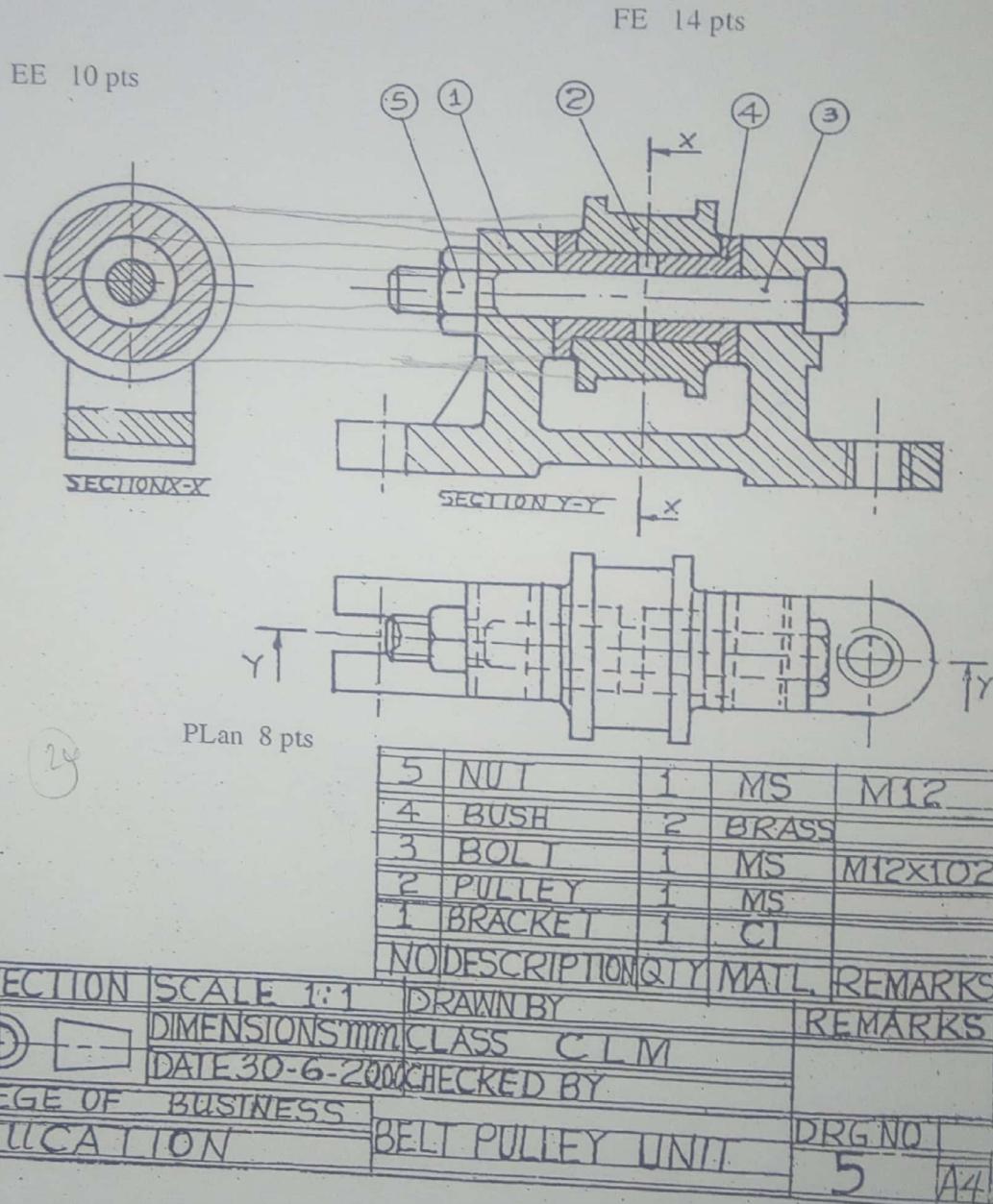
Figure 23

3. Draw the following views of the assembled parts shown in Figure 24 adding studs, hexagonal nuts,



Title block = 5 pts
 Part list = 5 pts
 Sectional FE on YY = 14 pts
 Sectional EE on XX = 10 pts
 Plan = 8 pts
 Total = 42 pts

mtambo @ jovef



Katie melne

DAR ES SALAAM INSTITUTE OF TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT

MEU 07316 PROJECT - FEBRUARY, 2016
CLASS: BEng 14 EE
MODULE: MEU 07316 ENGINEERING SERVICE DRAWING

INSTRUCTIONS: Attempt all questions

1. Find the tolerances, allowance and the type of fit for 130 H8/f7
 2. Photo copy figure 1 below and add to the given detailed views necessary surface roughness/finish and suggest where necessary the type of fit.
 3. Figure 1 shows the details for the BELT PULLEY unit (1) consisting of a belt pulley, the bolt (3) and the bush (4). Draw full size with all parts assembled, including a suitable nut, the following views:
 - (a) a sectional FE on YY
 - (b) a sectional EE on XX
 - (c) a plan
 - (d) Add a part list.

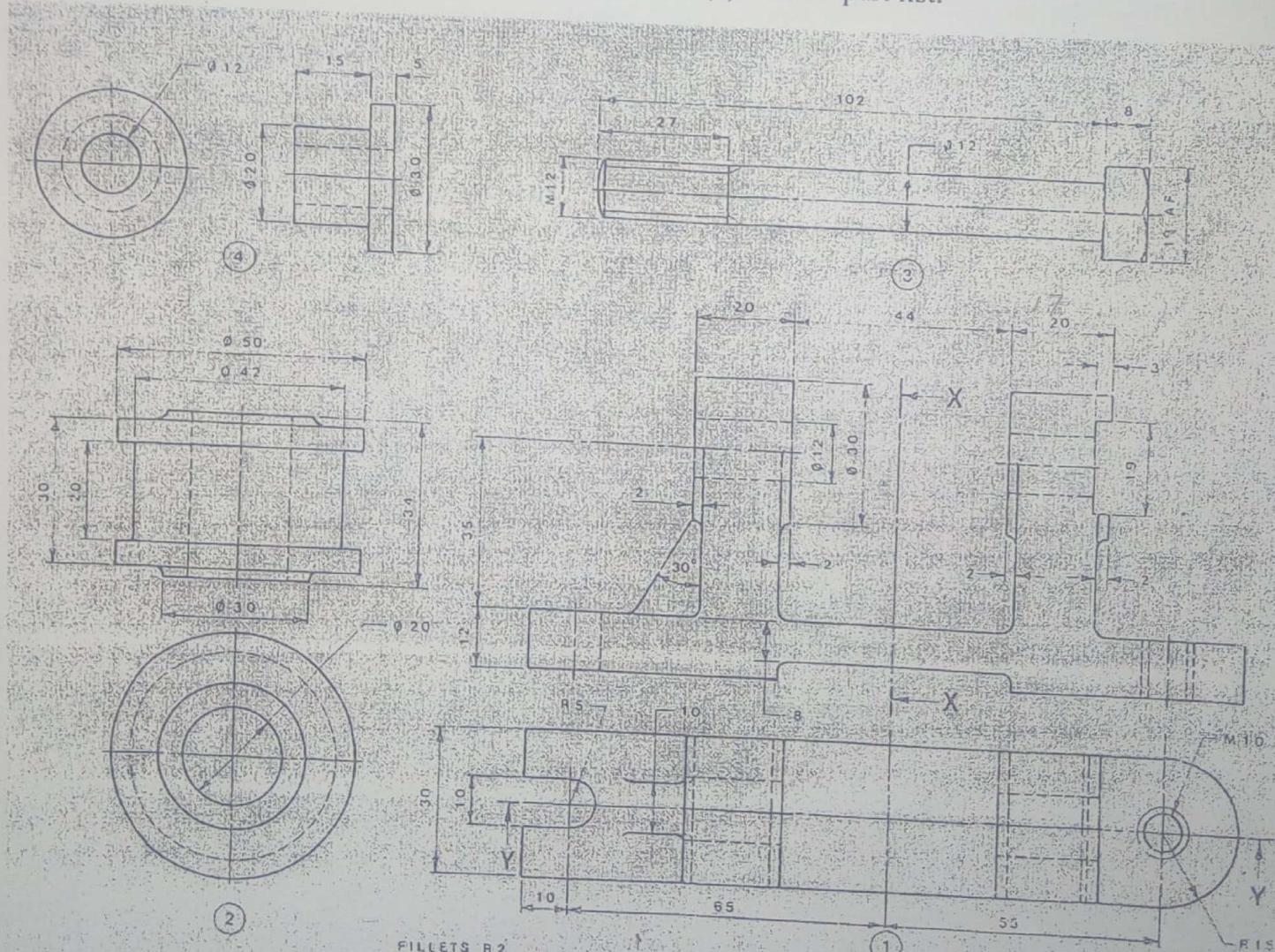


Figure 1

SECTION A

Attempt all sub questions (Each sub question carries 7 marks)

Question 01

- a) Mention in a chronological order four types of drawings required to be drawn from concept stage to finished product stage while giving necessary parameters required on each type.
- b) Differentiate between two system of fits and tolerances used in engineering drawing and state while giving reasons the system frequently used among the two.
- c) Mention:
 - i. Four items required to be indicated on a drawing of a standard thread.
 - ii. Two most important things (parameters) on a drawing of a gear.
- d) (d) By using tables given
 - (i) Find the required fits for a bush & shaft having basic dimension 60mm
 - (ii) Acceptable range for the size of the hole of the bush above.
- e) Every part list have got several details; mention five important parameters and briefly explain the meaning of each detail.

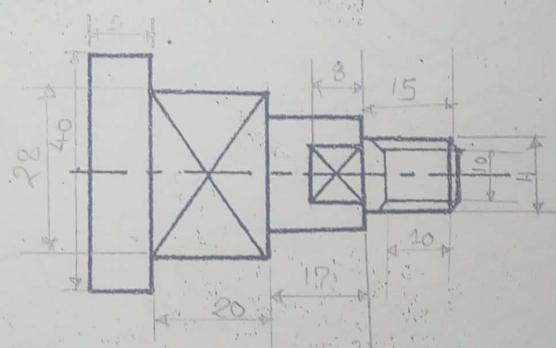
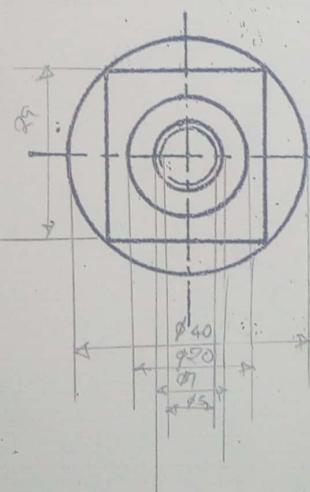
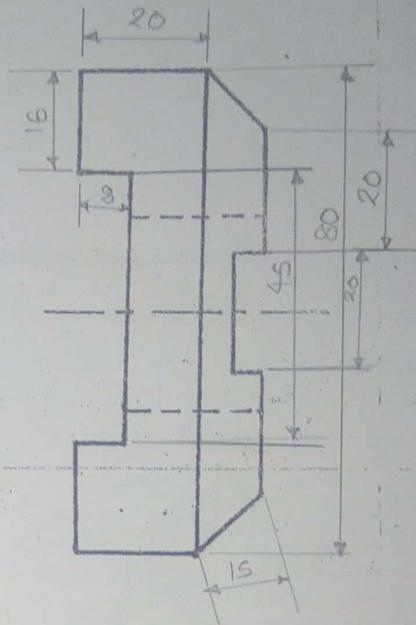
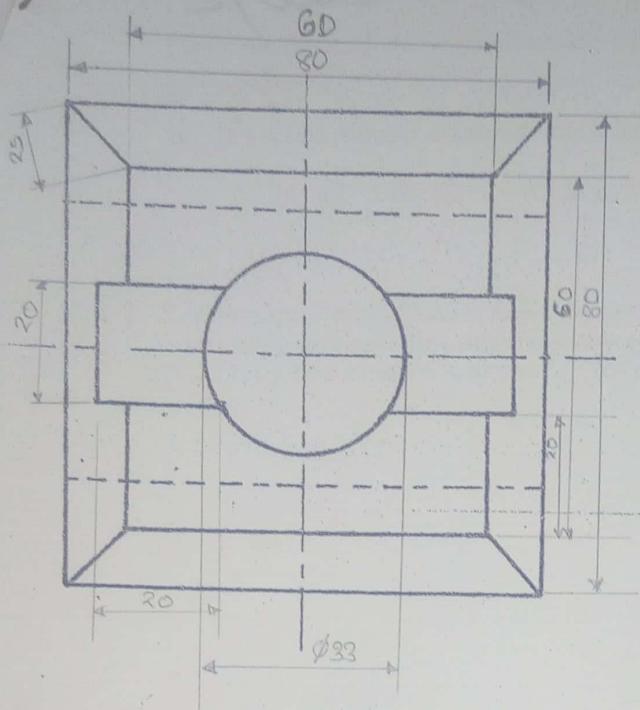
→ width mm
→ direction of flow

Flow lines may not be indicated

Fig 03

Joseph daud

Dimensions take from figure
Take measurements directly from the figures
to the nearest mm.



PROJECTION	SCALE 1:1	NAME PÄSCHAL WIGSLWA	REMARKS
	DIMENSION mm	CLASS 0D4 MECHANICAL	
	DATE 27/11/2015	CHECKED BY:	
DAR-ES-SALAAM TECHNICAL COLLEGE		TITLE	DRG NO 01

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(b) Write down the drawing conventional representation given by figures 5, 6, and 7 shown above.

(c) In a scaled drawing, a reduced scale is indicated by:

- (A) 4:1 (B) 5:2 (C) 1:2 (D) 2:1

2. An exploded view of CASTOR is shown in figure 8 below. Make a two view assembly drawing in first angle projection comprising of:

- (a) a front elevation in section (b) a plan (c) add a part list

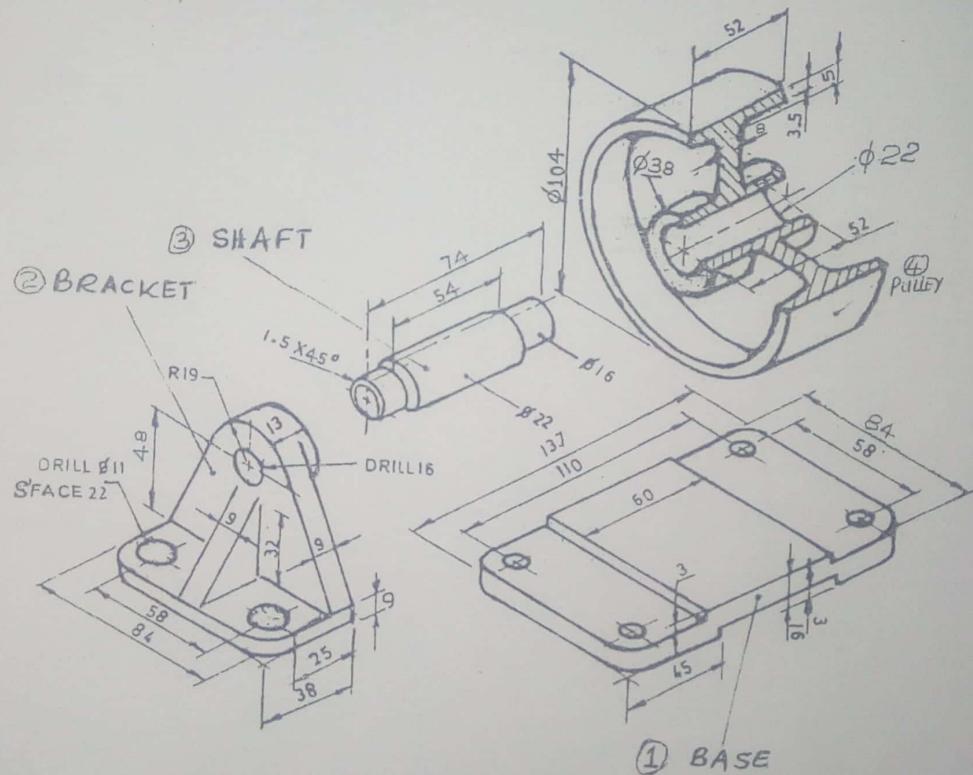
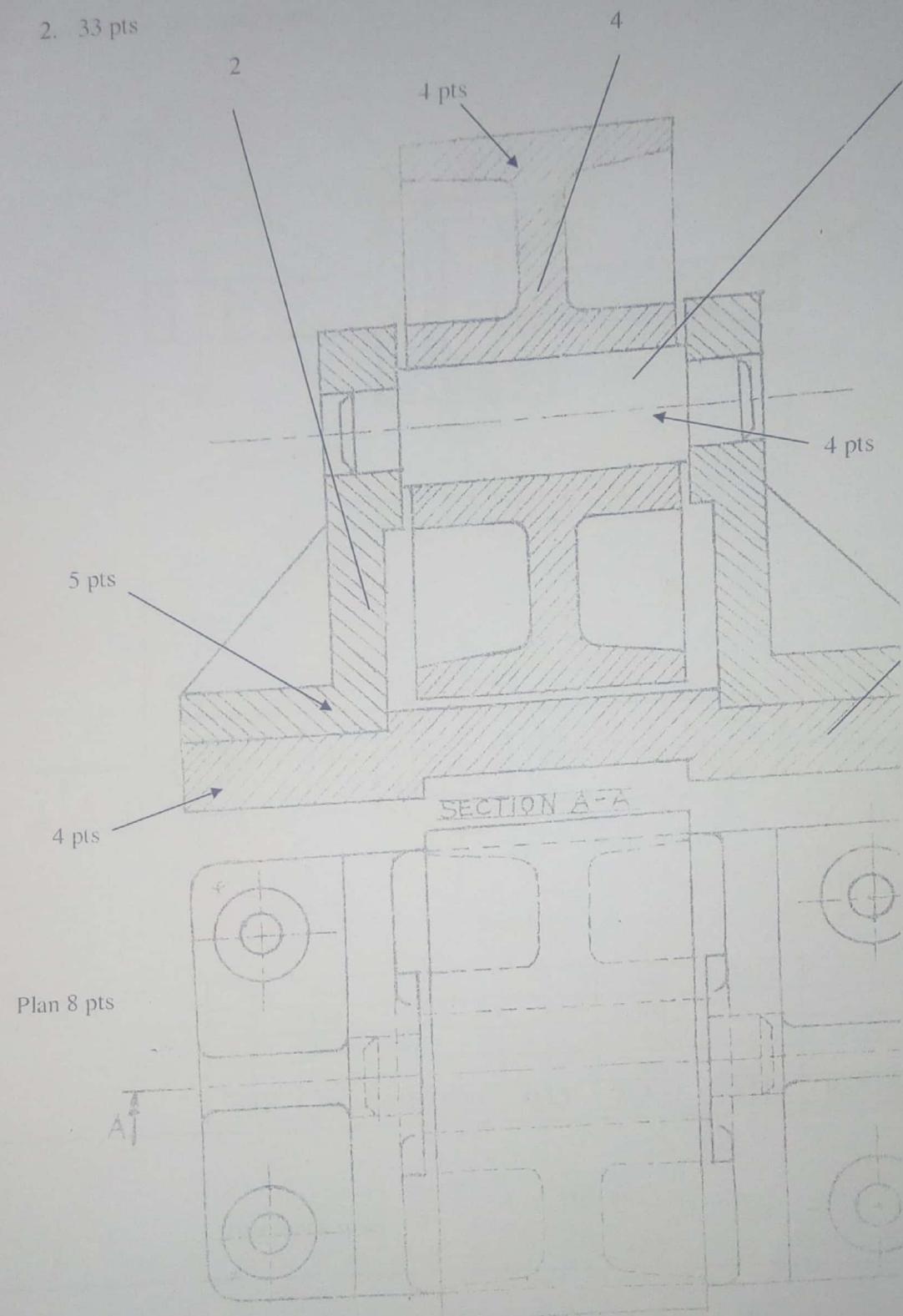
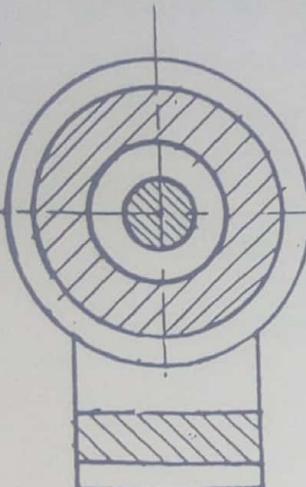


Figure 8

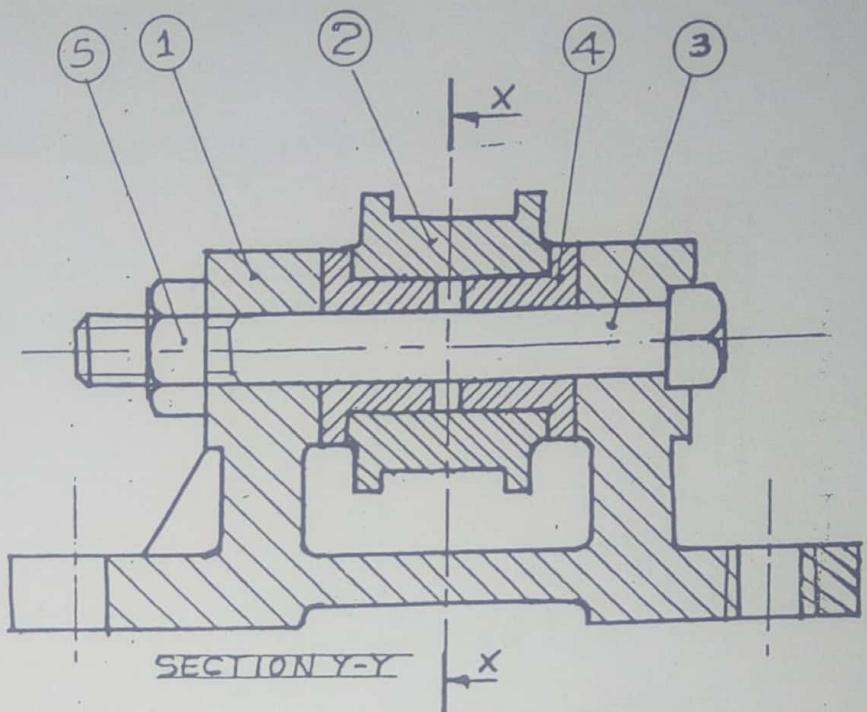
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2. 33 pts

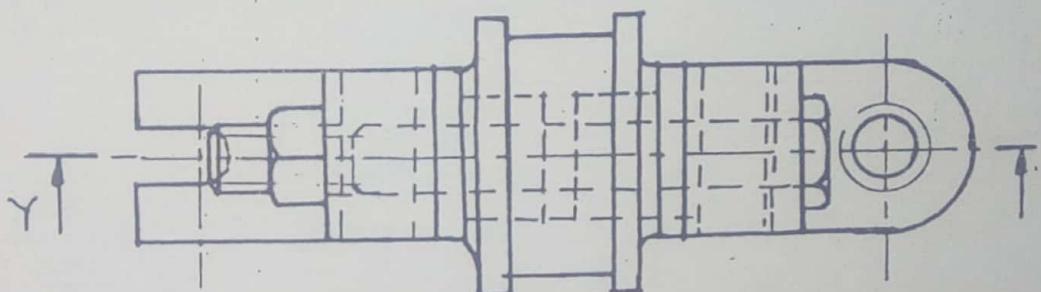




SECTION X-X



SECTION Y-Y



5	NUT	1	MS	M12
4	BUSH	2	BRASS	
3	BOLT	1	MS	M12×10
2	PULLEY	1	MS	
1	BRACKET	1	CJ	
NO DESCRIPTION		QTY	MATL.	REMARKS

PROJECTION	SCALE 1:1	DRAWN BY	REMARKS
	DIMENSIONS mm	CLASS C LM	
	DATE 30.6.2014	CHECKED BY	
COLLEGE OF EDUCATION	BUSINESS	BELT PULLEY UNIT	DRG NO. 5 A.

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DAR ES SALAAM INSTITUTE OF TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT

MID TEST, SEMESTER I, 2009/10, DECEMBER 2009,

CLASS: OD 08

MODULE: MET 301 ENGINEERING DRAWING

TIME: 2 1/2 HOURS

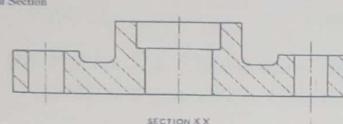
INSTRUCTIONS

This paper consists of Two (2) questions. Attempt all questions.

1. (a) Name the type of section view given in figures 1, 2, 3 and 4 below.

Aligned Section

Figure 15B



20

Figure 16

Alignment

Figure 1

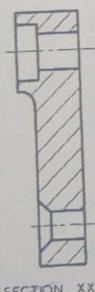


Figure 4

Offset

Figure 16

Alignment

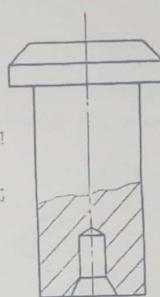


Figure 2



Figure 3



Figure 5

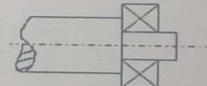
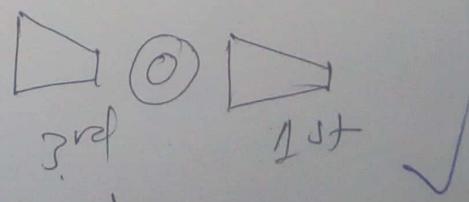


Figure 6



Figure 7

1



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DAR ES SALAAM INSTITUTE OF TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT

TEST FEBRUARY, 2016

CLASS: OD 14 ME

MODULE: MET 301 ENGINEERING DRAWING

TIME: 2 HOURS

INSTRUCTIONS: Attempt all questions

- 1 (a) Write down the drawing conventional representation given by figures 1, 2 3 and 4 shown below.

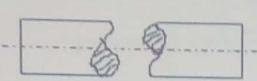


Figure 1.....

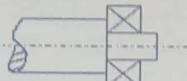


Figure 2.....



Figure 3.....



Figure 4

- (b) Figures 5, 6, 7 and 8 show four types of keys used as locking mechanism between shafts and gears/hubs. Give the names to each one. (12 marks)

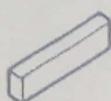


Fig 5



Fig 6

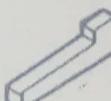


Fig . 7.....



(Fig 8.....)

- (c) Figures 9,10, 11 and 12 show four types of machine screws. Label the name of each screw:

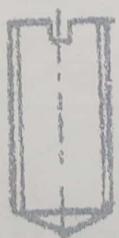


Fig. 9



Fig. 10



Fig. 11

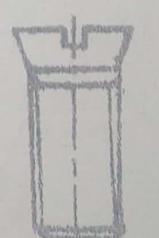


Fig. 12

- (d) Write in full the following abbreviations as applied in Engineering Drawing:
(i) CSK (ii) Matl (iii) Tol (iv) M/C (v) PCD

(e) Briefly explain what detail drawing is.

(f) In a scaled drawing, a reduced scale is indicated by:
(A) 4:1 (B) 5:2 (C) 1:2 (D) 2:1

(g) Find the tolerances and the type of fit for 130 H8/f7 (Extraction from the table is as shown below:

	H8	f7
130	+ 63 0	- 43 - 83

2. An exploded view of CASTOR is shown in figure 12 below. Make a two view assembly drawing in first angle projection comprising of:
(a) a front elevation in section
(b) a plan
(c) a side view

	H8	f7
130	+ 63	- 43
	0	- 83

2. An exploded view of CASTOR is shown in figure 12 below. Make a two view assembly drawing in first angle projection comprising of:

- (a) a front elevation in section
 - (b) a plan
 - (c) add a part list

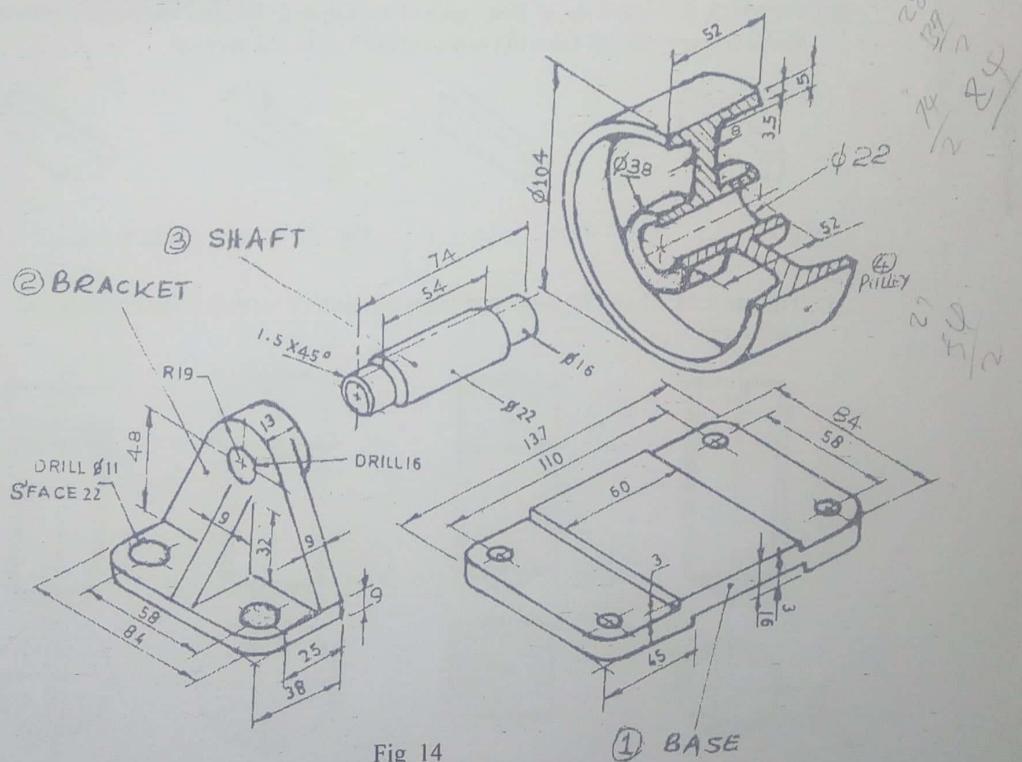


Fig 14

Marks
In a scaled drawing, an enlarged scale is indicated by: (2 marks)

- (A) 4:1 (B) 5:2 (C) 1:2 (D) 2:1

e) Briefly explain what a detail drawing is. (6 marks)

f) Explain for what does the following abbreviations stand for (10 marks)

- (i) SPEC (ii) SK (iii) CHAM (iv) PCD (v) HYD

g) Give the names of the screw heads shown by figures 13, 14, 15, 16 and 17 below. (10 marks)

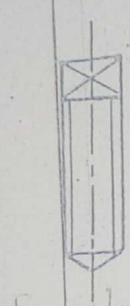


Figure 13

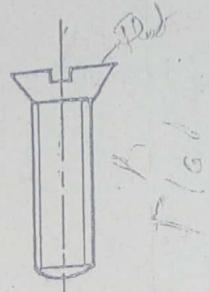


Figure 14

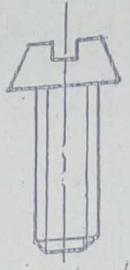


Figure 15

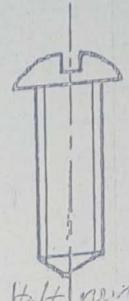


Figure 16

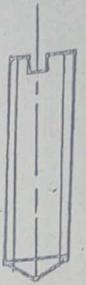


Figure 17

Socket head
Flange slot
head

h) Figures 18, 19, 20, 21 and 22 show different machining operations, write the name of operation to each Figure. (10 marks)

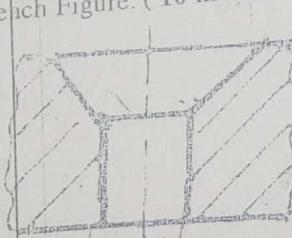


Figure 18

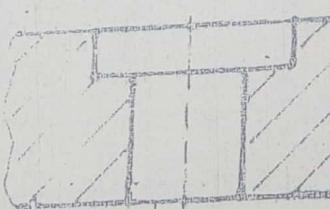


Figure 19

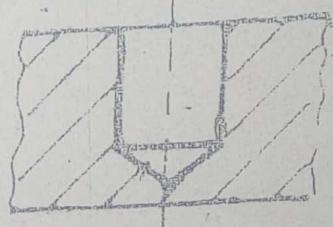


Figure 20

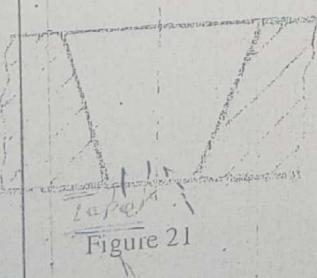


Figure 21

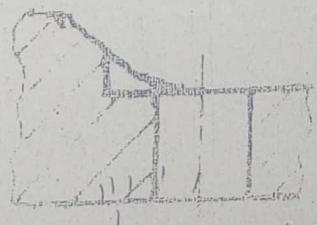


Figure 22

Counter sinking operation
Tapering operation

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DAR ES SALAAM INSTITUTE OF DATECHNOLOGY

MECHANICAL DEPARTMENT

OD 011 MECHANICAL FIRST THERMISTER TEST 2 (MET 05101)

20/January /2013

2 Hours

SECTION A (6 marks) (ATTEMPT ALL SUB QUESTIONS)

QUESTION 01

(a) What is the difference between design draft and a hand draft?

(b) With the aid of sketches show how the following items are fully designated in the part list (show all parameters required to be indicated)

- (i) Washers External dia & internal x thickness
- (ii) Key bars base x length
- (iii) Circlip $\frac{3}{8}$, diameter
- (iv) Threads M120x2.5

(c) Among the two system of fits which one is likely to be used and why

SECTION B (9marks) (ATTEMPT ALL QUESTIONS)

QUESTION 02

Consider figure 01 below draw detail drawing for the drive plate {other missing dimensions can be obtained through measuring on the drawing}

QUESTION 03

Consider figure 01 below draw the assembling drawing for the clutch assembly.

{other missing dimensions can be obtained through measuring on the drawing}

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DAR ES SALAAM INSTITUTE OF TECHNOLOGY

MECHANICAL DEPARTMENT

OD 010 FIRST THERMISTER ENGINEERING DRAWING EXAMINATIONS

(MET 05101)

13/DECEMBER /2012

2 Hours

SECTION A (7marks) (ATTEMPT ALL SUB QUESTIONS)

QUESTION 01

(a) Mention and briefly explain:

(i) Two types of fits

(ii) Two Systems of fits used in engineering.

(b) Given the following fitness grades state with reasons while supported with figures from tables provided the system of fit used on each set on (i) & (ii) and determine the type of fit used on (iii)

(i) $\varnothing 20\text{mmG7/h6}$ → Unit shaft and

(ii) $\varnothing 50\text{mmH8/h9}$ → Unit hole

(iii) $\varnothing 25\text{mmH8/d9}$ → clearance fit

(c) Name six items required to be shown on a part list of a detail drawing while briefly explaining the meaning of each item.

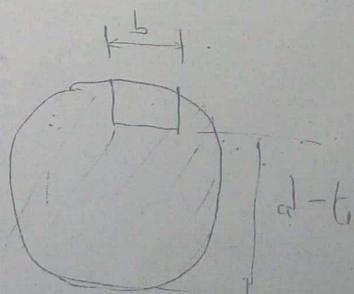
SECTION B (8 marks) (ATTEMPT ALL QUESTIONS)

QUESTION 02

Use the table provided:

(i) Draw a full dimensioned cross section view of a shaft showing standard key way to be cut on the shaft with $\varnothing 82\text{mm}$

(ii) Indicate the cross sectional size of the standard key bar required.



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QUESTION 03

Given the drawing- 02 of a bench vice below, draw the detail drawing for the screw.

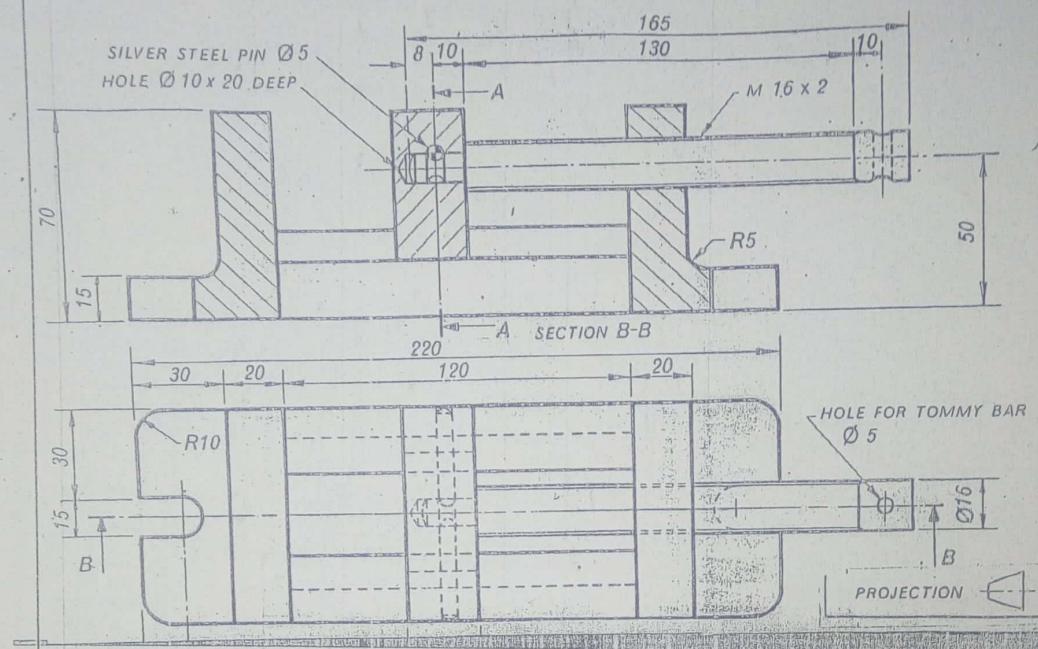


Fig 02

QUESTION 04

Figure 03 below is a drawing of a flat belt assembly, what kind of drawing is it? While using only one view draw its assembling drawing.

Fig 03

Mtanks

SECTION B (ATTEMPT ANY TWO QUESTIONS) (12.5 marks each)

QUESTION 02

Given the drawing number 01 below of a gear assembly, the design has to be improved by fitting a circlip on one end to prevent the gear from coming off.

Using tables provided draw a detail drawing for the shaft which will also include the improvement above

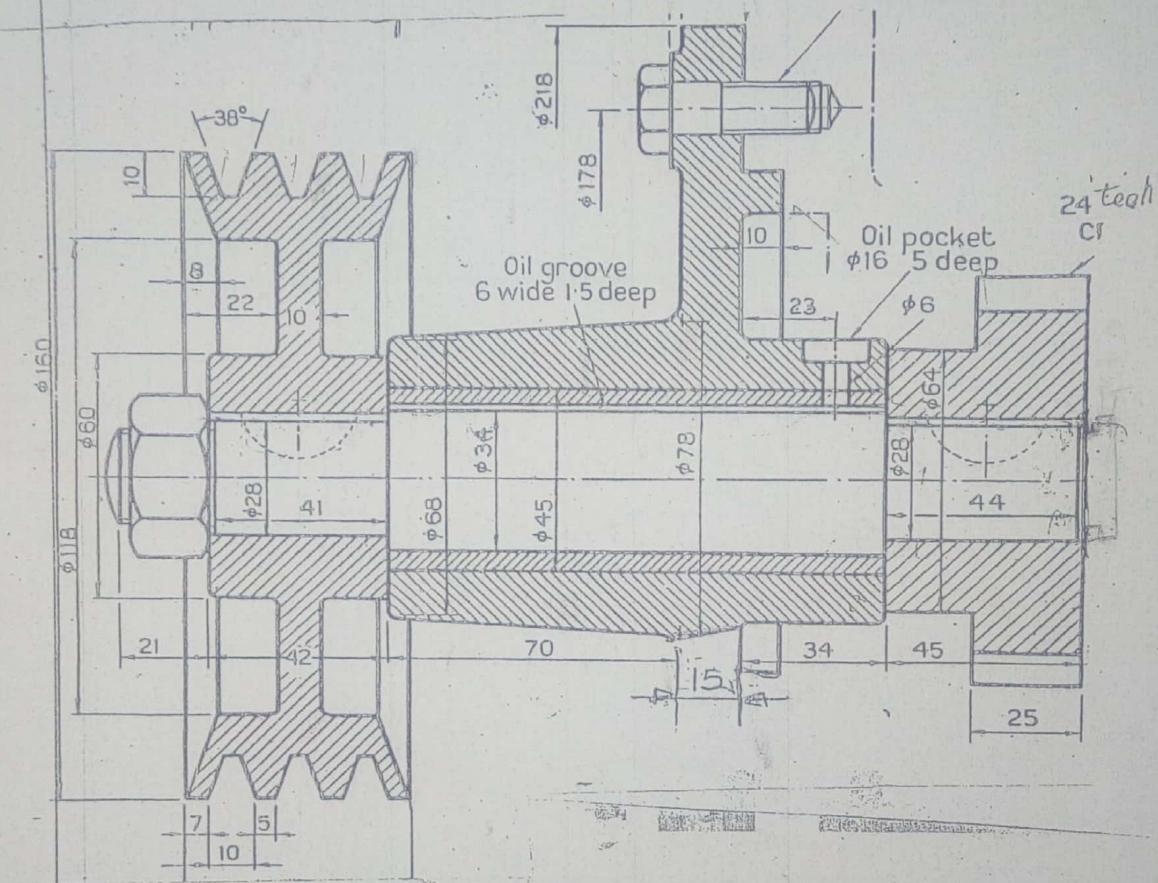


Fig 01

Fig 02

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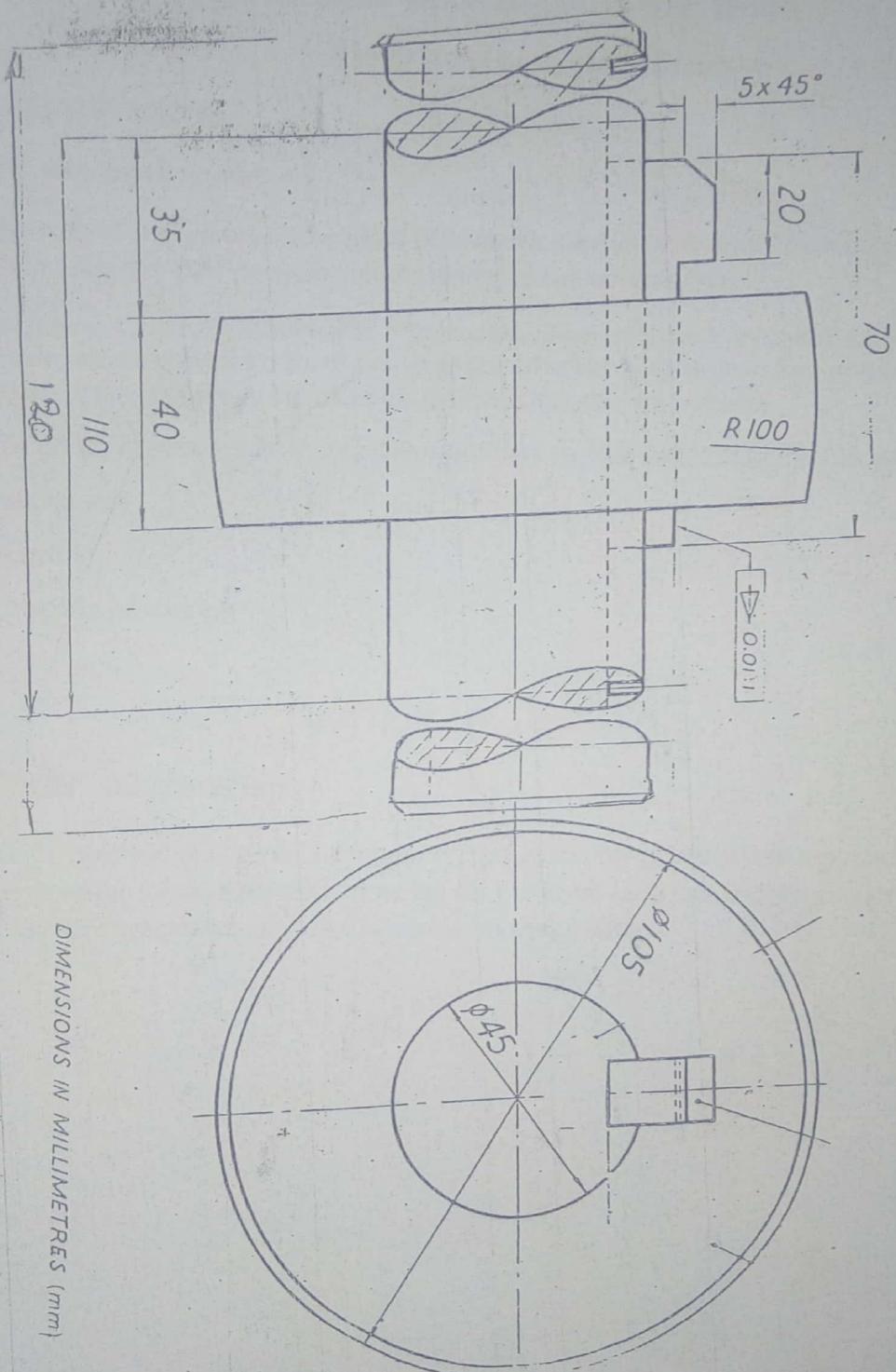


Fig 03

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DAR ES SALAM INSTITUTTE OF TECHNOLOGY

DEPPARTIMENT OF MECHANICAL ENGINEERING

EGINEERING DRAWING OD12ME

ANWER ALL QUESTIONS

Time 90.1 hour

QUESTION 01 (total 8marks)

- (a)Describe in chronological order four types of drawings needed to be drawn from concept to product stage while giving all necessary parameters needed on each type.
- (b)Consider a gear 40mm long mounted on a shaft with diameter 74mm,it is used to transmit torque, by using tables provided draw a full dimensioned detail cross section view of the shaft showing standard key way also write down the standard key bar size required.
- (c)List while giving reasons two appropriate materials for manufacturing the following:
- (i) Bread baking tray
 - (ii)Bush for oxen
 - (iii)Engine block of an engine

SECTION B

QUESTION 02 (7marks)

Figure Q 02 below is of a V-belt belt/ gear drives assembly drawn in orthographic projection to scale 1:2 raw the detail drawing for the shaft (any missing dimensions will be obtained through actual measurements on the drawing)

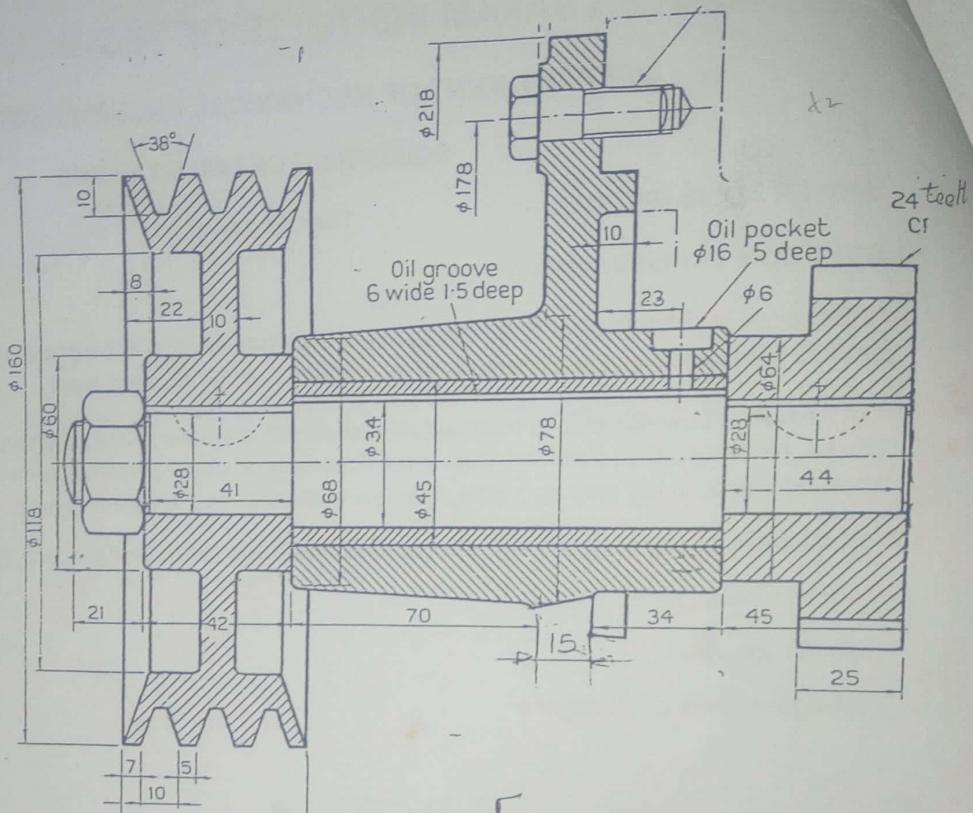


Fig. Q 02.

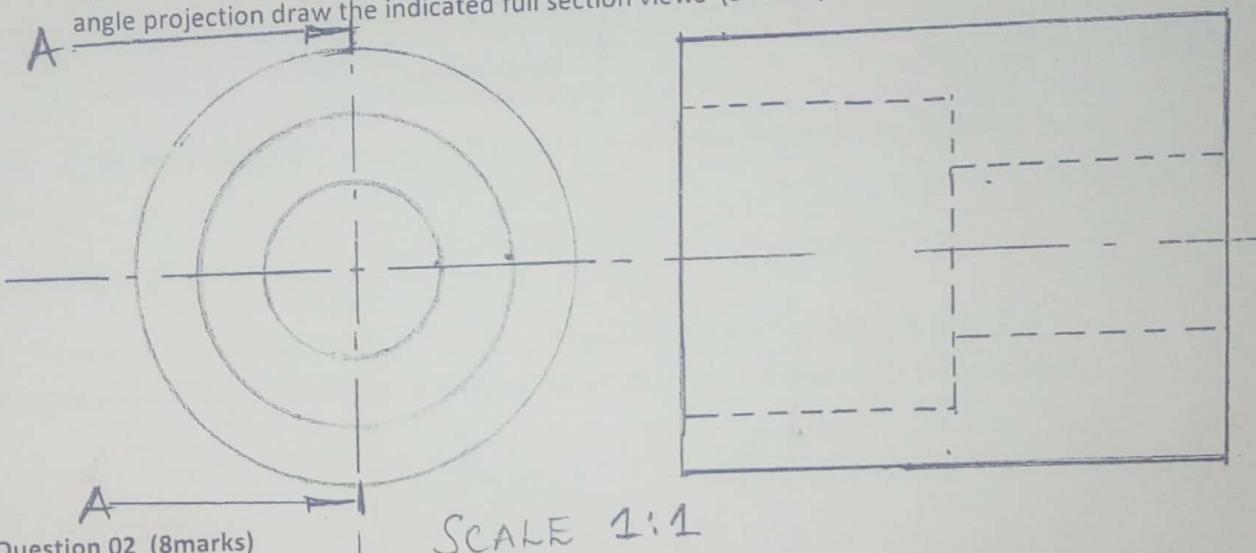
DAR ES SALAM INSTITUTE OF TECHNOLOGY
ENGINEERING DRAWING
 Class: OD 13M

SEMESTER ONE TEST TWO Time 1 Hour

Instructions (i) Attempt all questions (ii) Borrowing instruments within examination room is strictly prohibited

Question 01 (3marks)

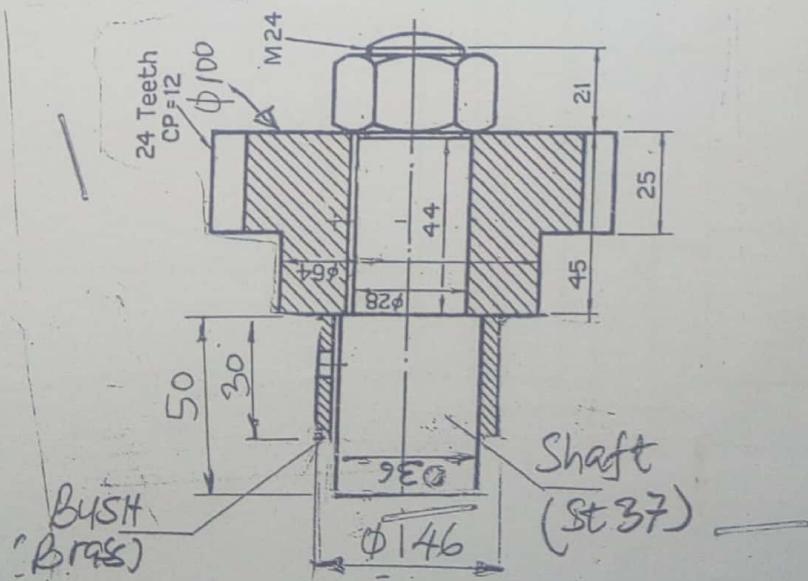
- (i) Briefly explain the importance of sectioning (2marks)
- (ii) The figure below is the front and top view of an object drawn in orthographic projection third angle projection draw the indicated full section views (5marks)



Question 02 (8marks)

Figure below is of an idler gear assembly draw its assembling drawing

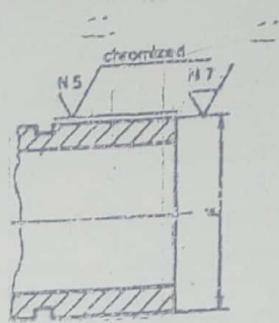
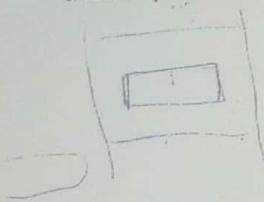
reveal



Instructions (i)Attempt all questions (ii)Borrowing instruments within examination room is strictly prohibited

Question 01 (2marks) (i) Briefly describe restriction of hatching while giving examples

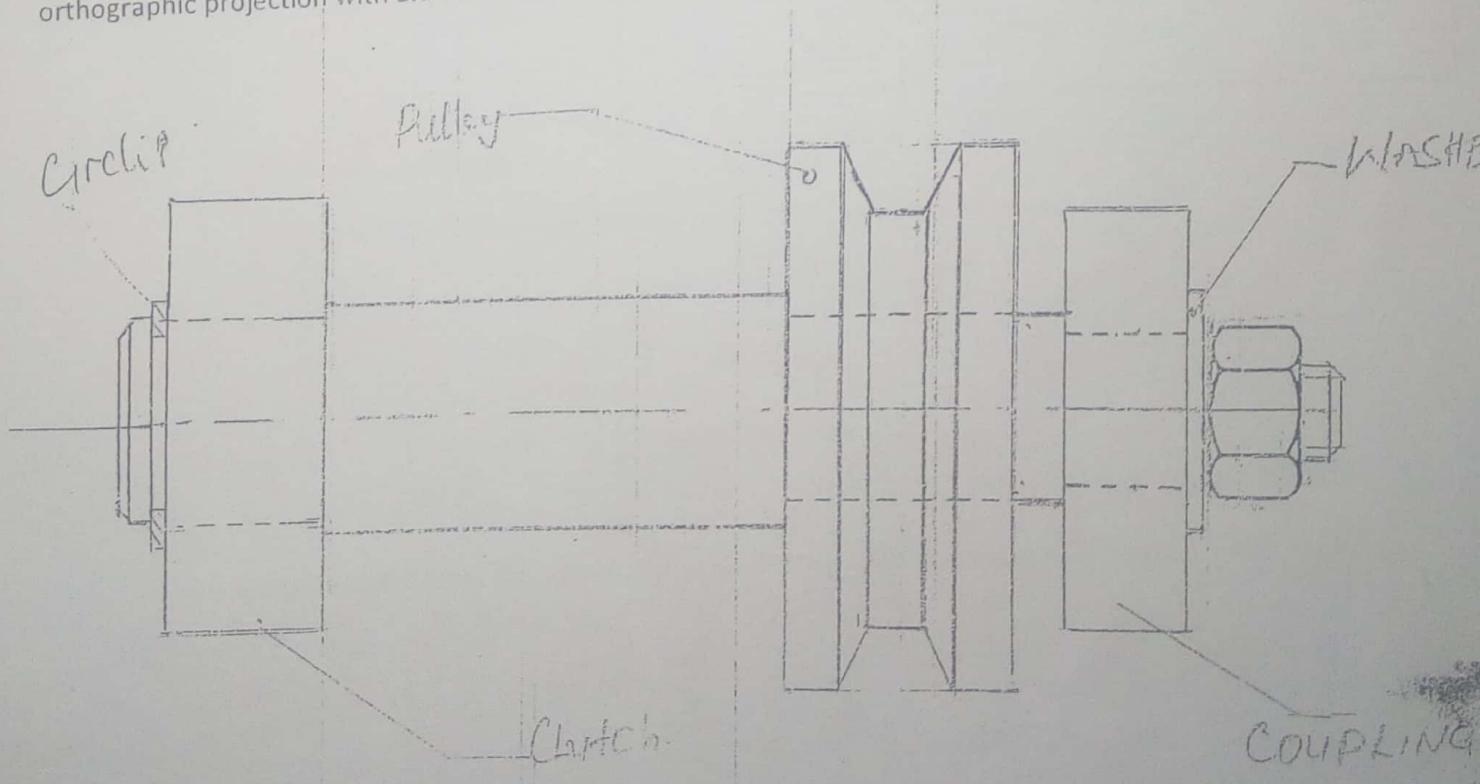
(ii)Briefly interprets the information displayed by the symbols on the figure 01, state two items where those symbols are not supposed to be used.



Question 02 (4marks) (i) In chronological order state tall types of drawing drawn from proposal to defined product stage.

(ii)what is the principal use of detail drawings ?

Question 3 (8marks) Figure 02 below is of a clutch, coupling assembly drawn to scale 1:1 in orthographic projection with aid of tables provided prepare a detail drawing for the shaft using scale 1:1



DAR ES SALAM INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
ENGINEERING DRAWING OD12ME

ANSWER ANY TWO QUESTIONS each 7.5Marks

Time 1 hour

QUESTION 01

Figure Q01 below is of gear assembly drawn to scale 1:2 prepare its assembling drawing.

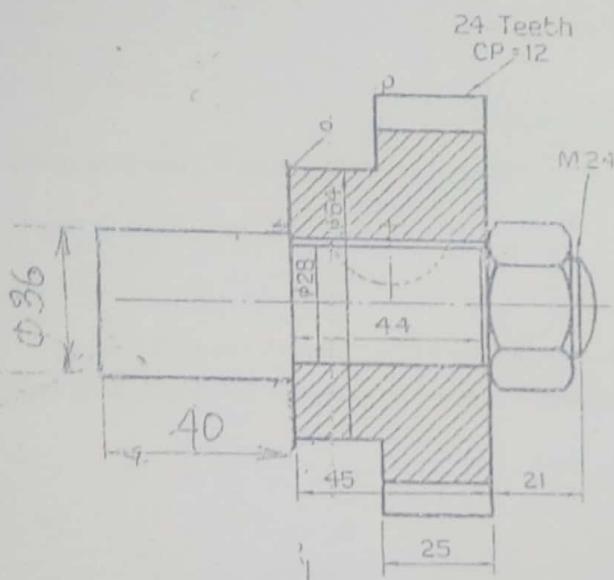


Fig Q01

QUESTION 02

Refer to Figure Q01 above is drawn to scale 1:1, draw the detail drawing for the shaft.

DAR ES SALAM INSTITUTE OF TECHNOLOGY
ENGINEERING DRAWING
Class: OD 13M

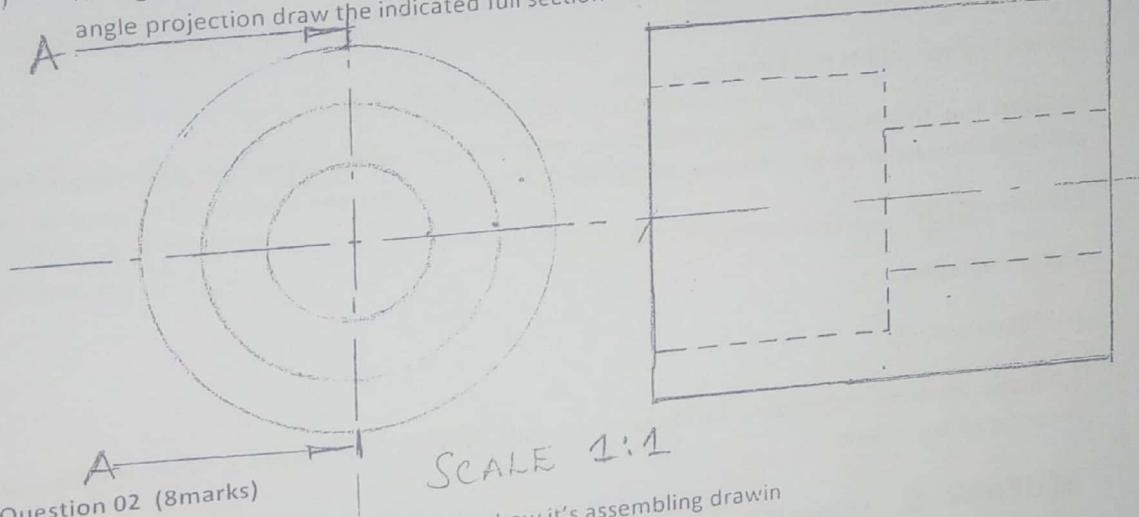
SEMESTER ONE TEST TWO Time 1 Hour

Instructions (i)Attempt all questions (ii)Borrowing instruments within examination room is strictly prohibited

Question 01 (3marks)

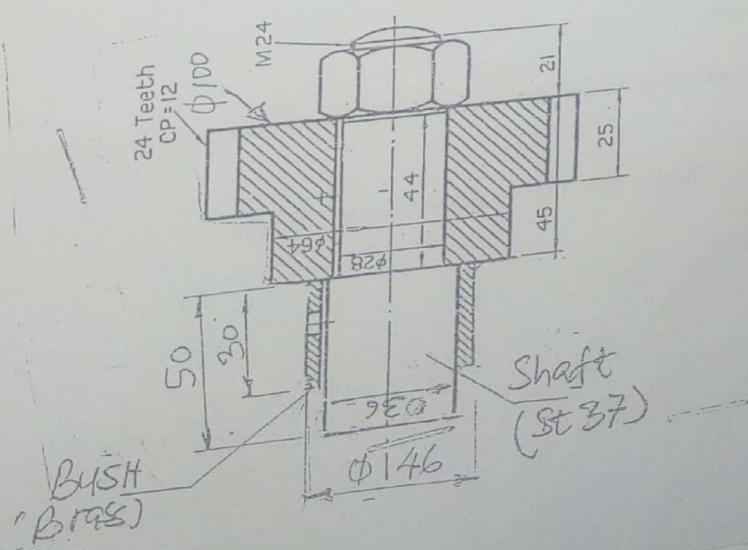
- (i) Briefly explain the importance of sectioning (2marks)

(ii) The figure below is the front and top view of an object drawn in orthographic projection third angle projection draw the indicated full section views (5marks)



Question 02 (8marks)

Figure below is of an idler gear assembly draw its assembling drawing



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SECTION A

Attempt all sub questions (Each sub question carries 7 marks)

Question 01

- a) Mention in a chronological order four types of drawings required to be drawn from concept stage to finished product stage while giving necessary parameters required on each type.
- b) Differentiate between two system of fits and tolerances used in engineering drawing and state while giving reasons the system frequently used among the two.
- c) Mention:
 - i. Four items required to be indicated on a drawing of a standard thread.
 - ii. Two most important things (parameters) on a drawing of a gear.
- d) (d) By using tables given
 - (i) Find the required fits for a bush & shaft having basic dimension 60mm
 - (ii) Acceptable range for the size of the hole of the bush above.
- e) Every part list have got several details; mention five important parameters and briefly explain the meaning of each detail.

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SECTION B

(Attempt any one question) (40 MARKS)

QUESTION 02

The drawing Q 02 below is of a set of flange coupling drawn in orthographic third angle projection to scale 1:1, prepare in orthographic projection detail drawing for the male flange only (All dimensions should be taken from the given drawing)

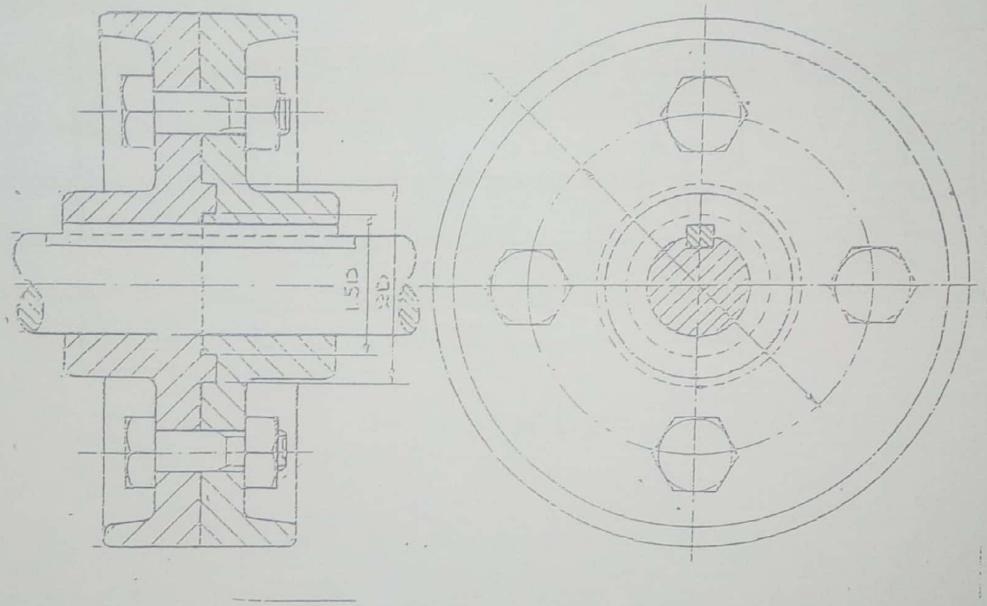


Fig Q 02

QUESTION 03

Figure Q 02 above is of coupling drawn to scale 1:1, prepare its assembling drawing.

QUESTION 04

Fig Q 04 is of gear assembly drawn to scale 1:2 the design is to be improved by redesign the shaft to incorporate a circlip to prevent the gear from coming off, prepare the detail drawing for the shaft including the improvement. (Missing dimensions should be taken from the given drawing)

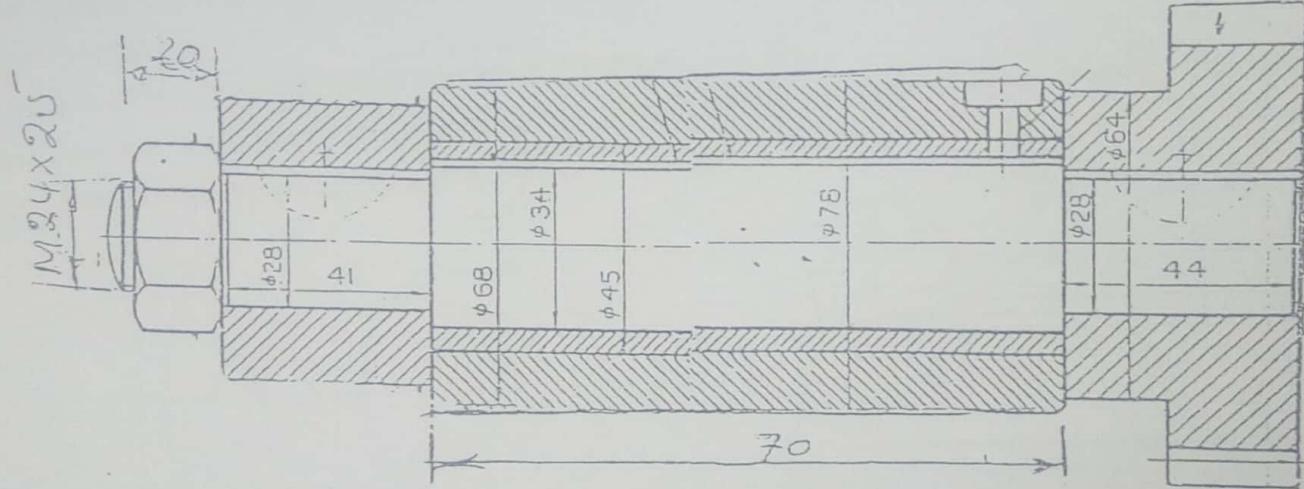


Fig Q 04

SECTION A (Answer all sub questions) (12marks on each sub question)

QUESTION 01

- Describe the principal use of detail drawings in engineering.
- What is the difference between detail drawing and assembling drawing?
- The drawing ('Q01(c)') below is in orthographic third angle projection drawn to scale 1:2 by using tables provided draw full dimensioned cross section area for the standard key way, and give the size for the standard key bar to be used.

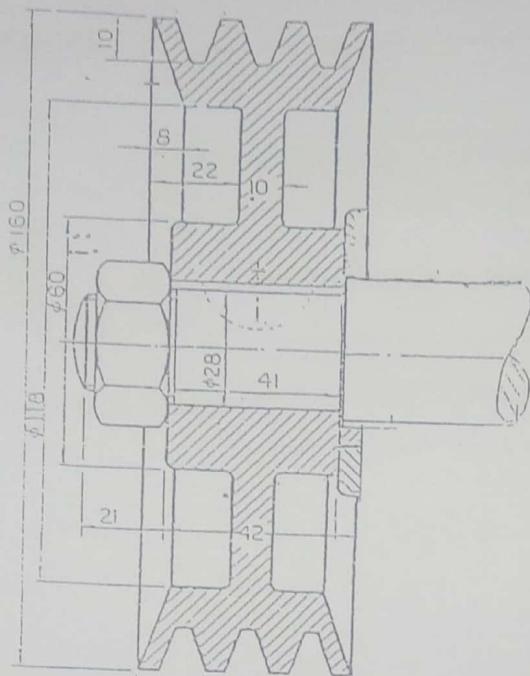


Fig Q01(c)

- Refer to front section view below, briefly describe it and give all necessary parameters size needed to designate the object.

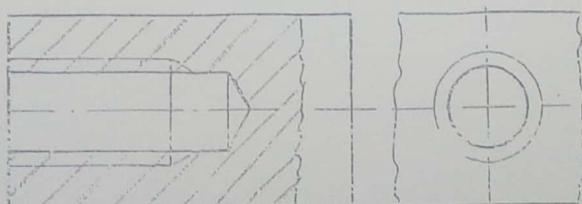


Fig Q01d

- Refer to figure Q01(c) above of a v-belt pulley fitted in shaft, by using tables provided find the required fattiness class and acceptable range of diameters for (i) Pulley (ii) shaft

QUESTION 01

Figure Q01 below is of gear assembly drawn to scale 1:2 prepare its assembling drawing.

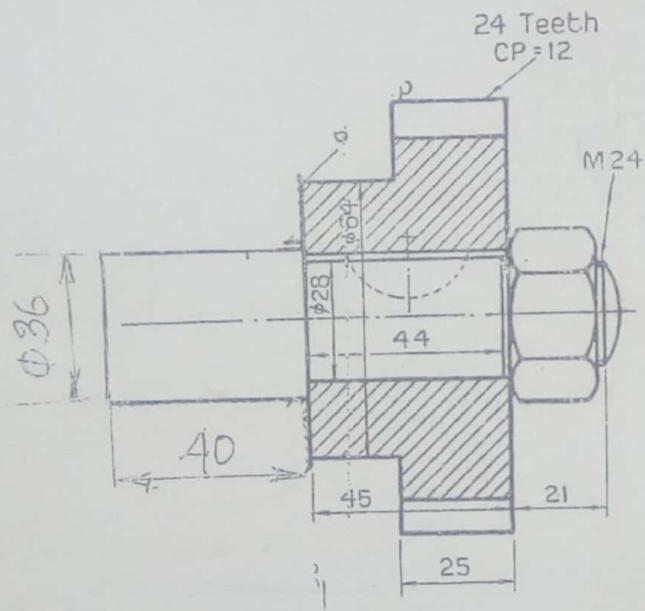
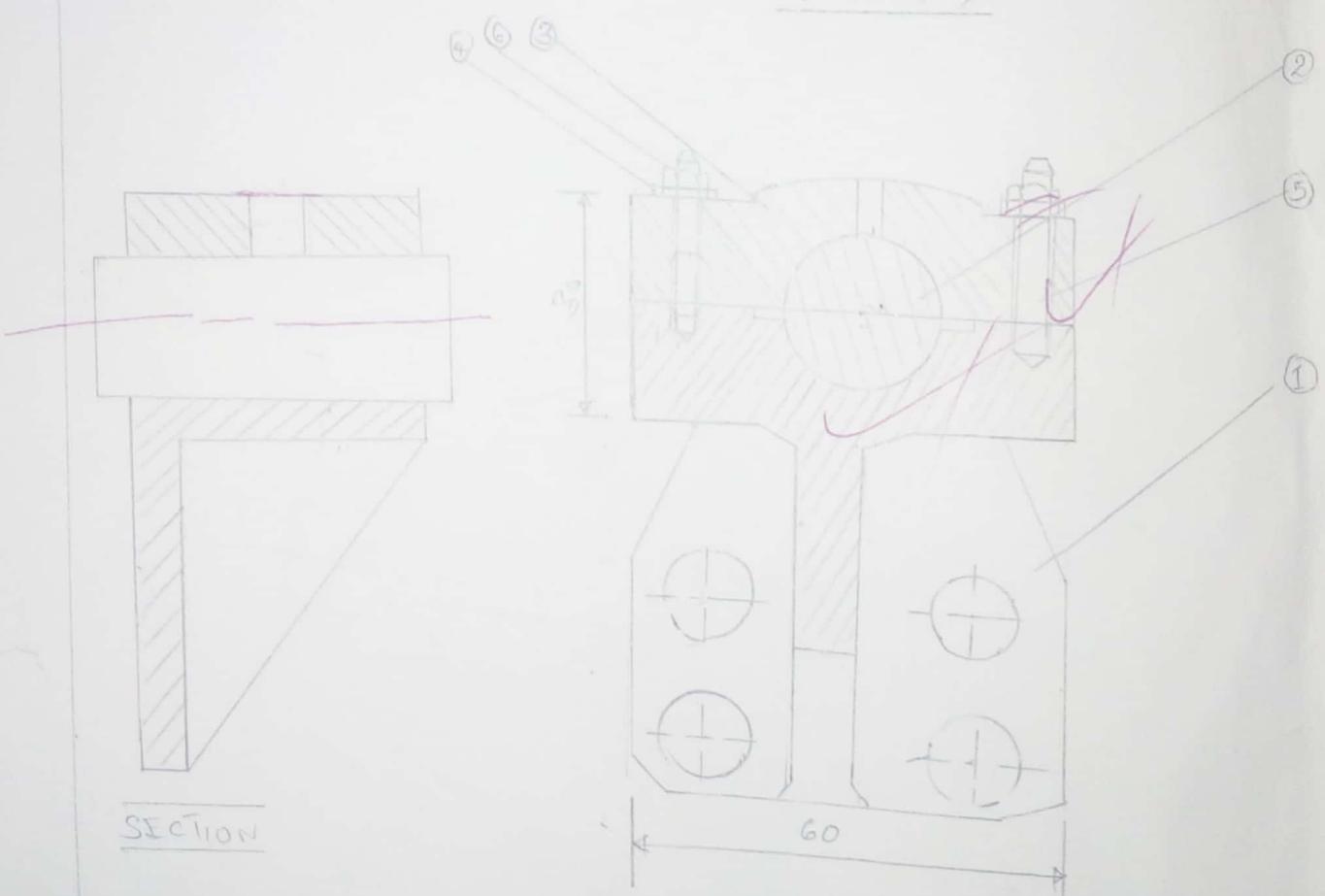
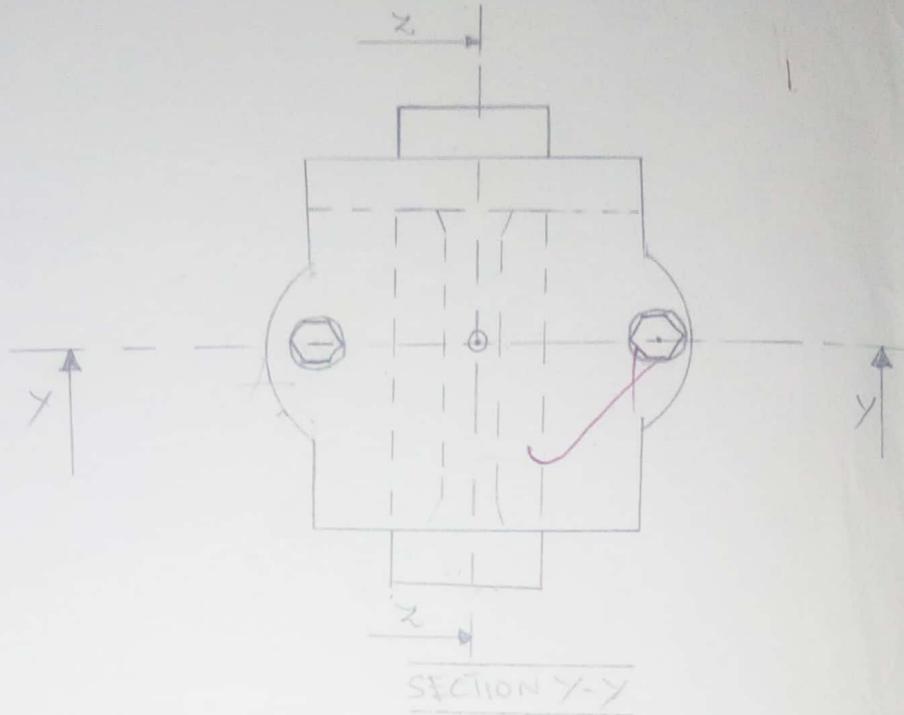
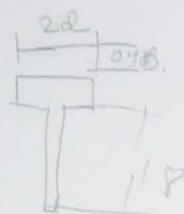


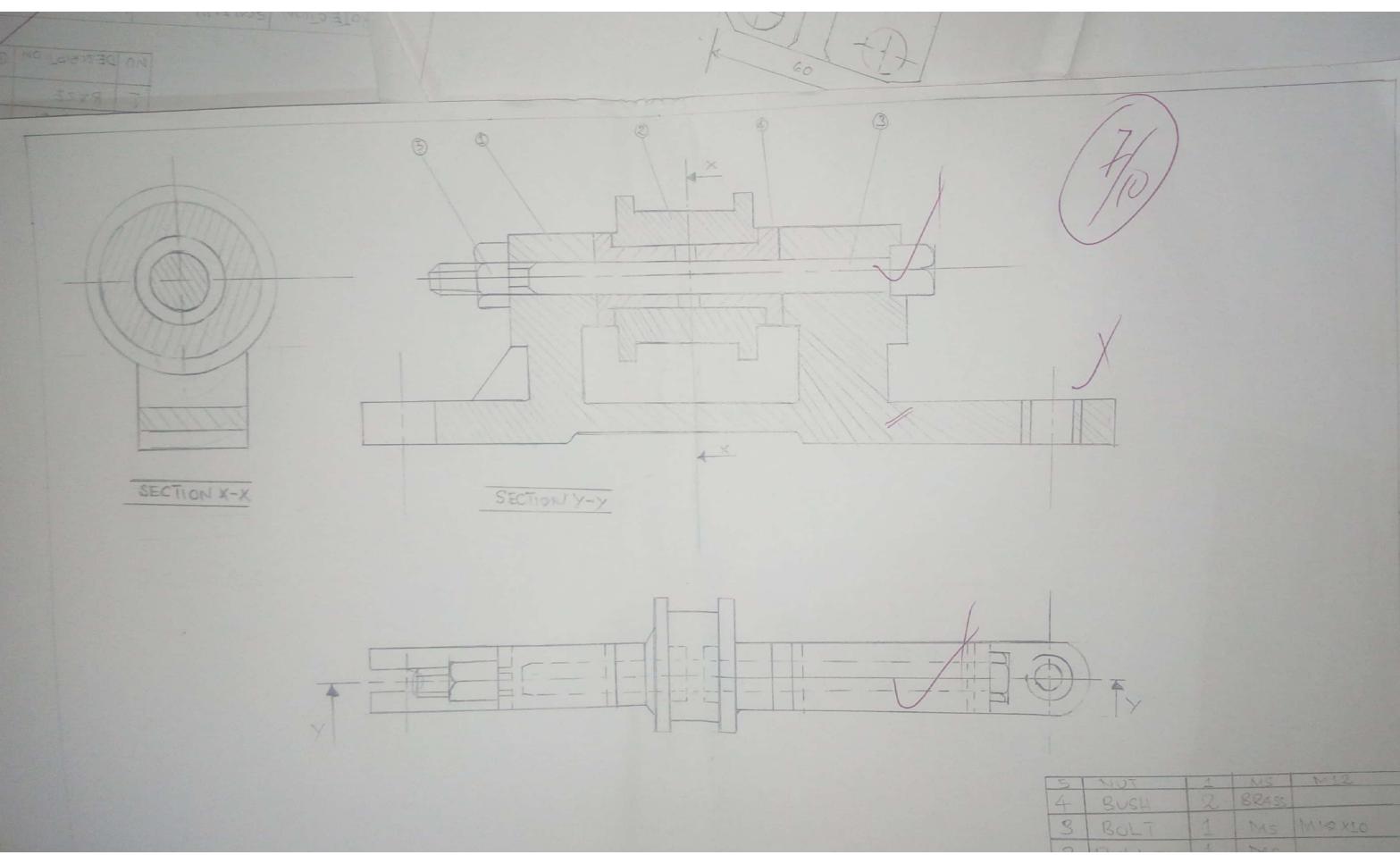
Fig Q01

QUESTION 02

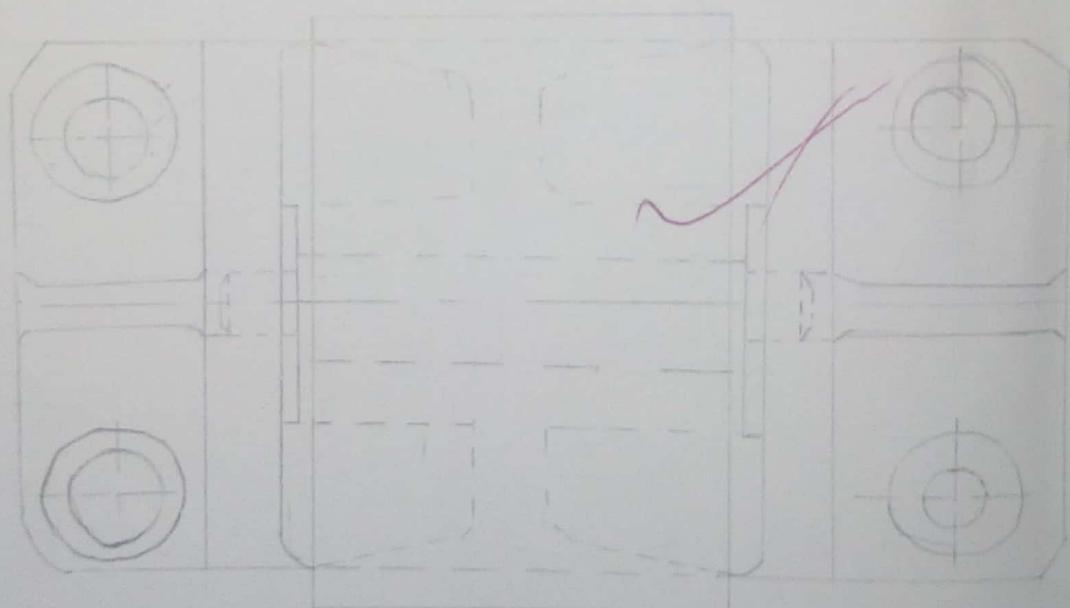
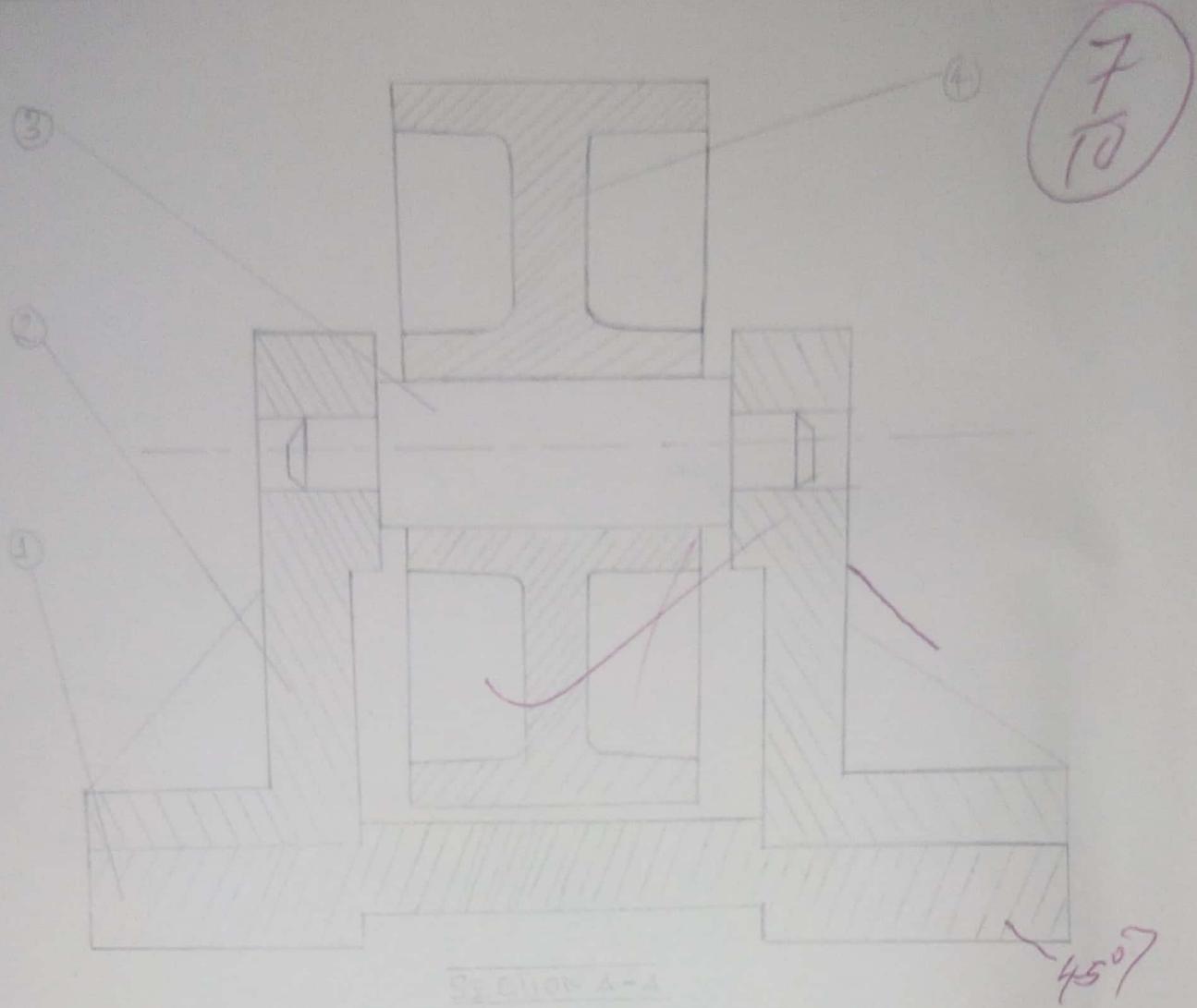
Refer to Figure Q01 above is drawn to scale 1:1, draw the detail drawing for the shaft.

(7)
10



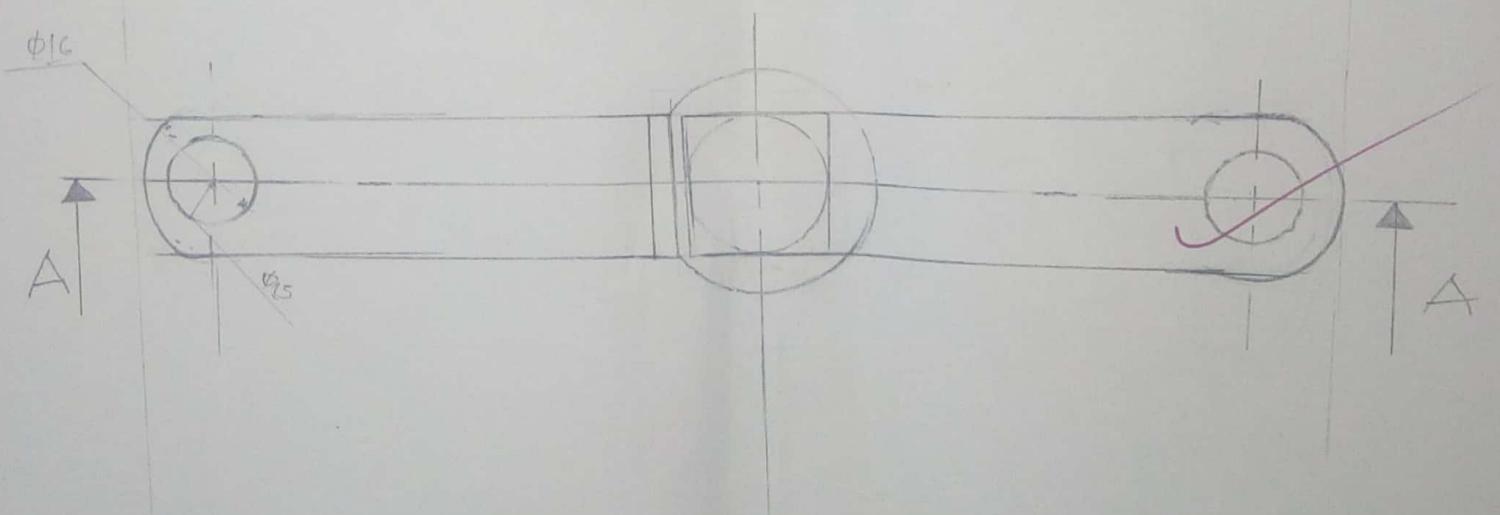
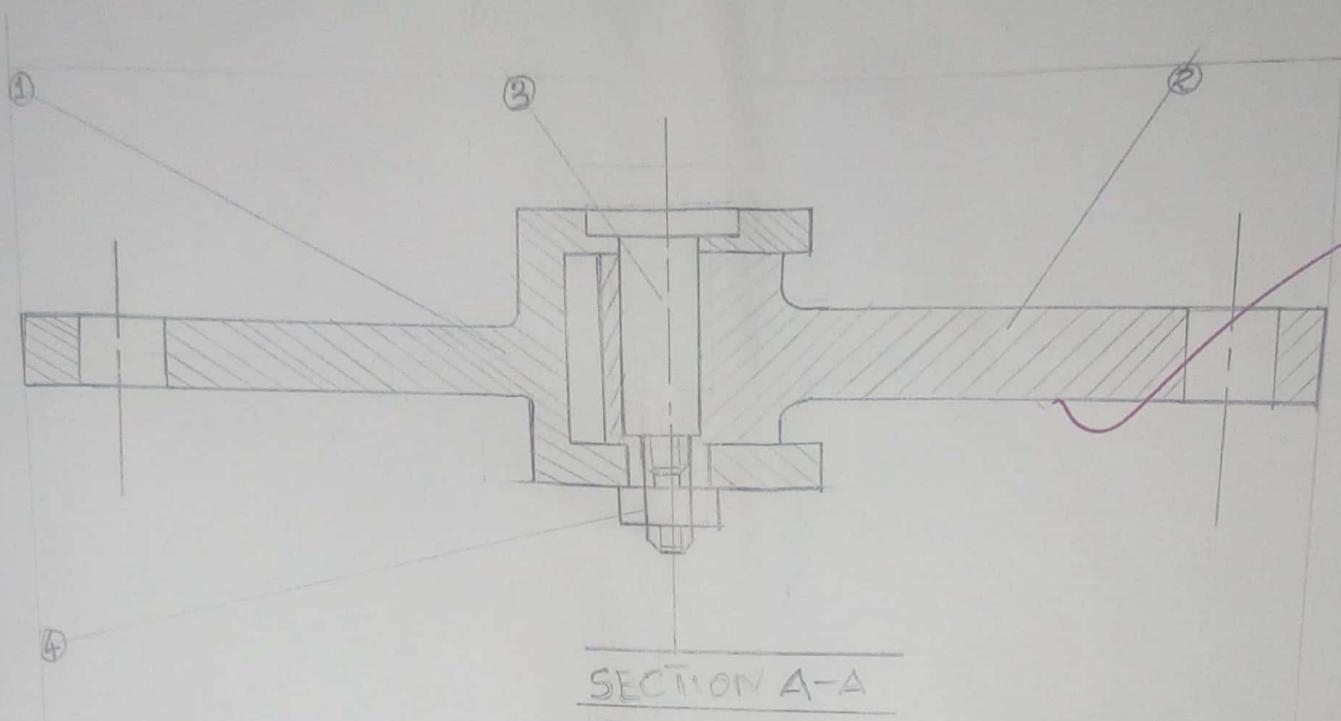


PROJECTION	SCALE: 1:1	1	BRACKET	1	CI	REMARKS
ND	DESCRIPTION	QTY	MATERIAL	REMARKS		
	DIMENSION: mm	DRAWN BY: PASCAL WIGELINK	CLASS: ODI4 MECHANICAL			
	DATE: 21/01/2016	CHECKED BY:				
DAR ES SALAAM INSTIT UTE OF TECHNOLOGY	BELT PULLEY UNIT	DRG ND	FORMAT.	5	A ₃	



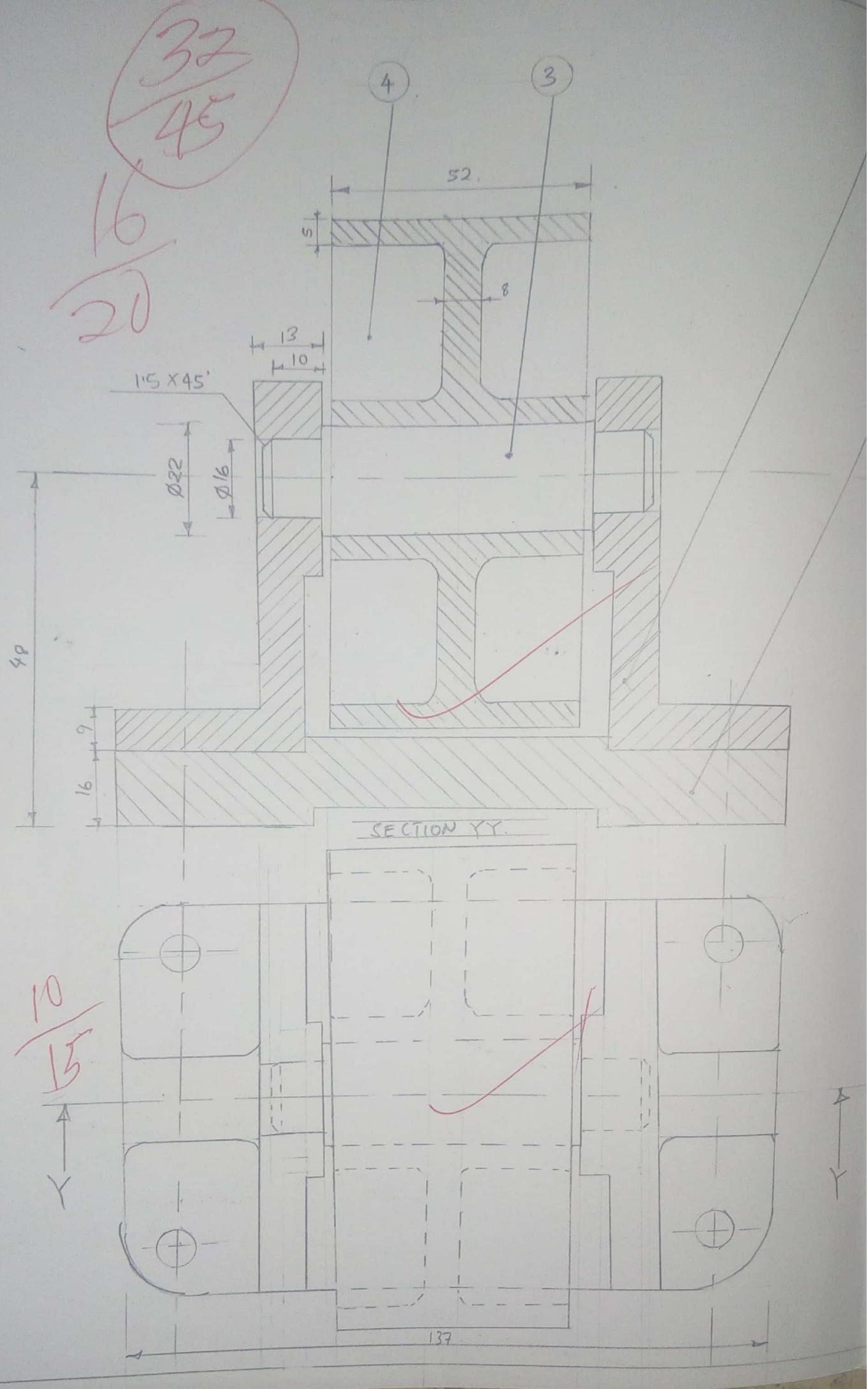
NO	DESCRIPTION	QTY	MATL	STD	REMARKS
4	PULLEY	1	MS		
3	SHAFT	1	CI		
2	BRACKET	2	MS		
1	BASE	1	MS		

PROJECTION	SCALE: MM	DRAWN: PAECHAL WIGELWA.	REMARKS:
	DIMENSIONS	200x100x140526173185	
	DATE: 08/02/2016	CHECKED BY: <i>Himayat</i>	
DAR ES SALAAM INSTITUTE OF TECHNOLOGY	CASTOR	DRG NO: 01	A3



4	N
3	P
2	N
1	N
NO	DE
PROJECTION	
	SCALE: 1:1
	DIMENSION: mm
DATE: 21/01/2016	
DAR ES SALAAM INSTITUTE OF TECHNOLOGY	
TITI	

	NO	DESCRIPTION QTY	MATERIAL	STD	REMARKS
PROJECTION	SCALE: 1:1	NAME: PASCHAL MIGELINA			REMARKS
	DIMENSION: mm	CLASS: 0D14 MECHANICAL			
	DATE: 21/01/2016	CHECKED BY: <i>Himagal</i>			
DAR ES SALAAM INSTITUTE OF TECHNOLOGY	TITLE: KNUCKLE JOINT.			DRG NO: 01	FORMAT: A3



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Part list = 5 pts.

NO	DESCRIPTION	QTY	MATRL	STD	REMARKS
4	PULLEY	1	MR		
3	SHAFT	1	HSS		
2	BRACKET	2	CAST IRON		
1	BASE	1	CAST IRON		

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SCALE 1:1
DIMENSIONS, MM
DATE, 10/01/2017

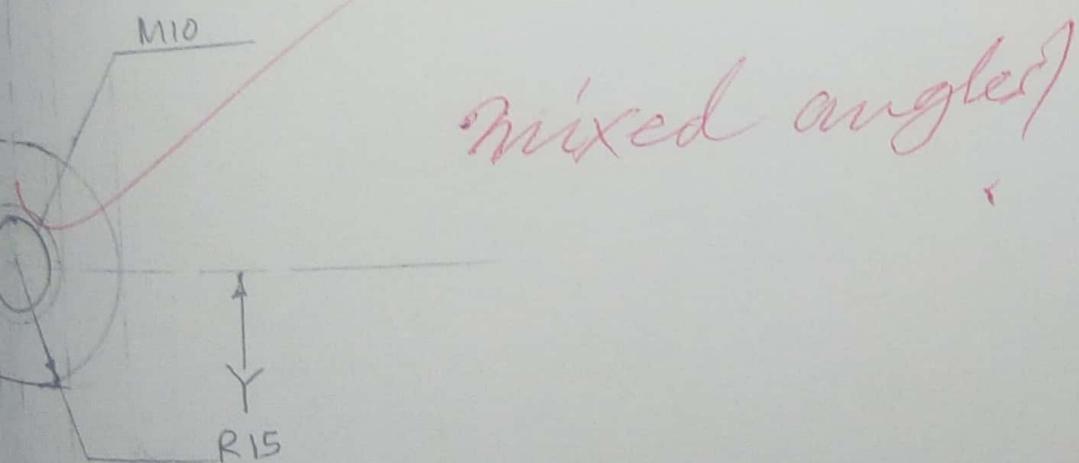
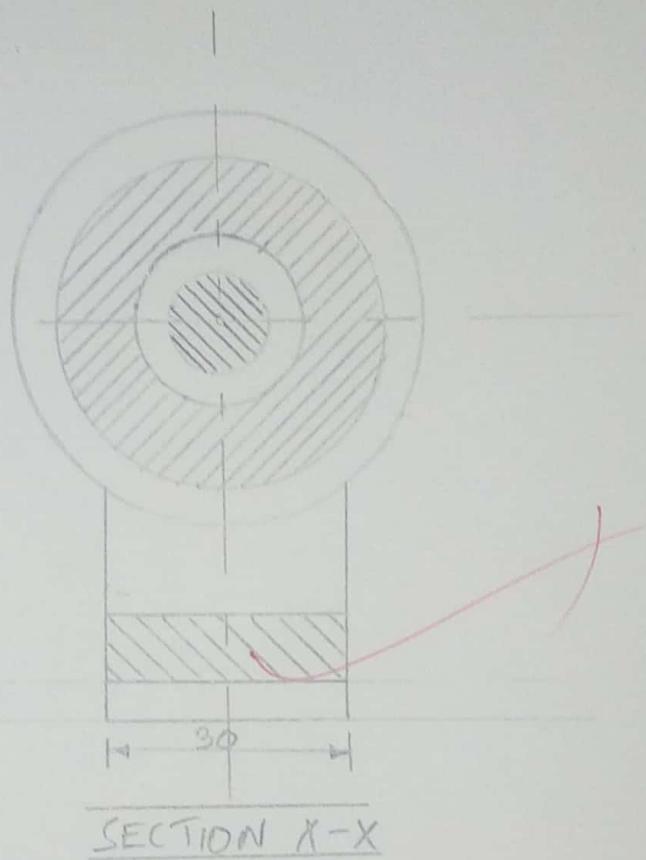
NAME: JOSEPH DAUD
CLASS: 10 ISME
CHECKED BY: DAUD

REMARKS

DIT.	CASTOR	DRG NO: 1	A ₃
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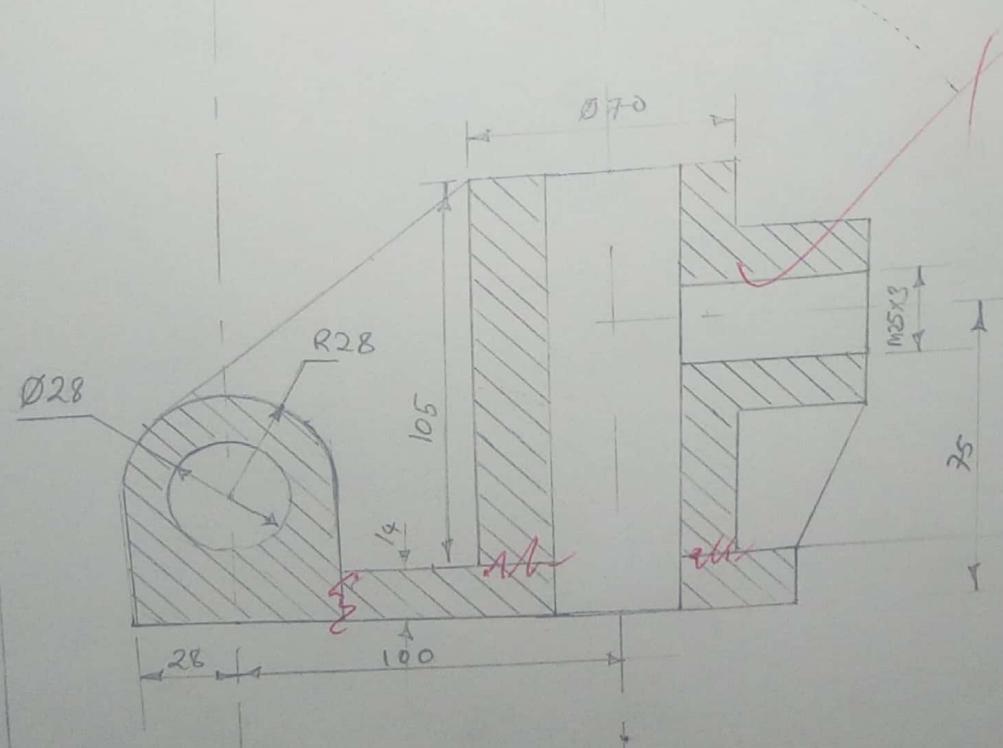
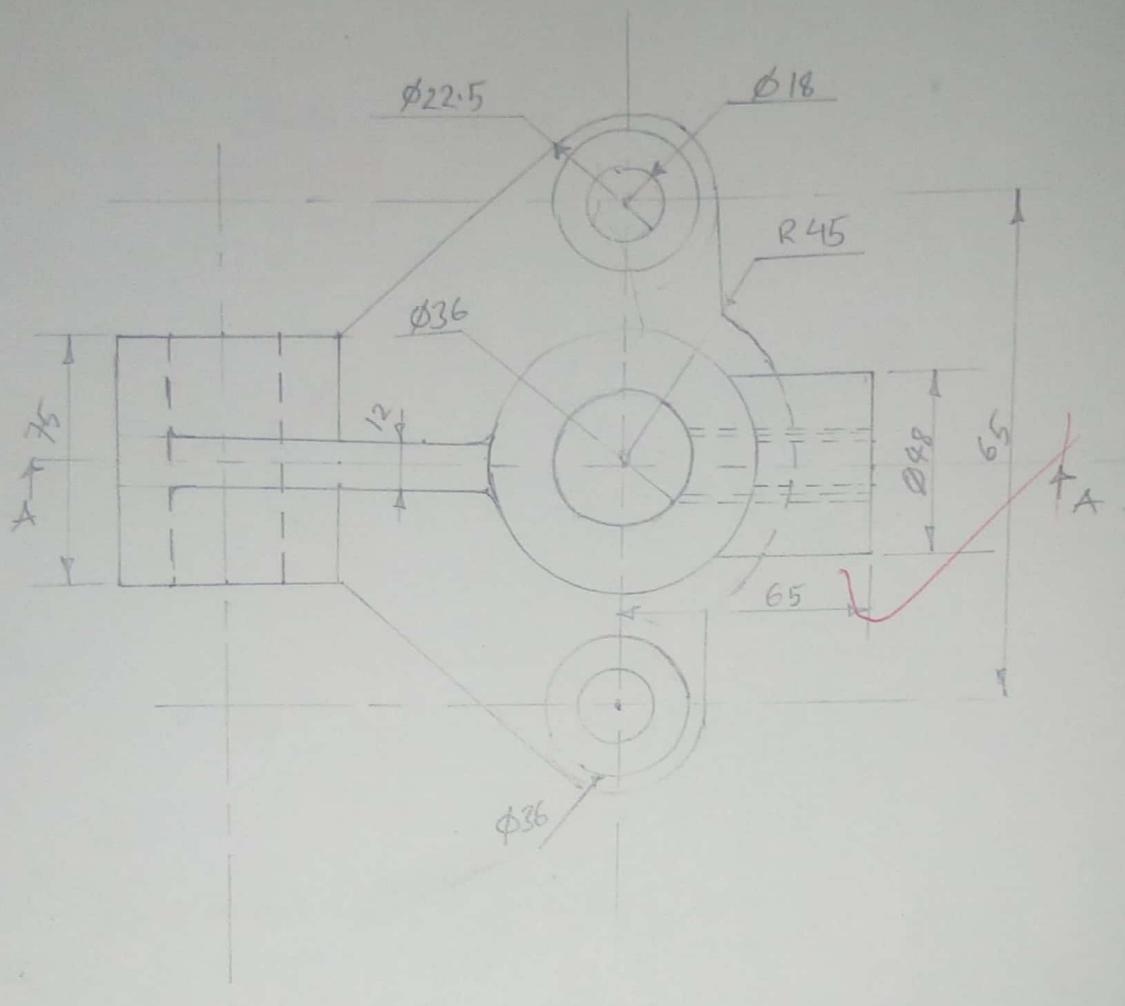
6	NUT	2	MS	M10	
5	STUD	2	MS		
4	WASHER	2	MS		
3	CAP	1	MS		
2	SHAFT	1	MS		
1	BLOCK	1	CI		
NO	DESCRIPTION	QTY	MATL	STD	REMARKS.

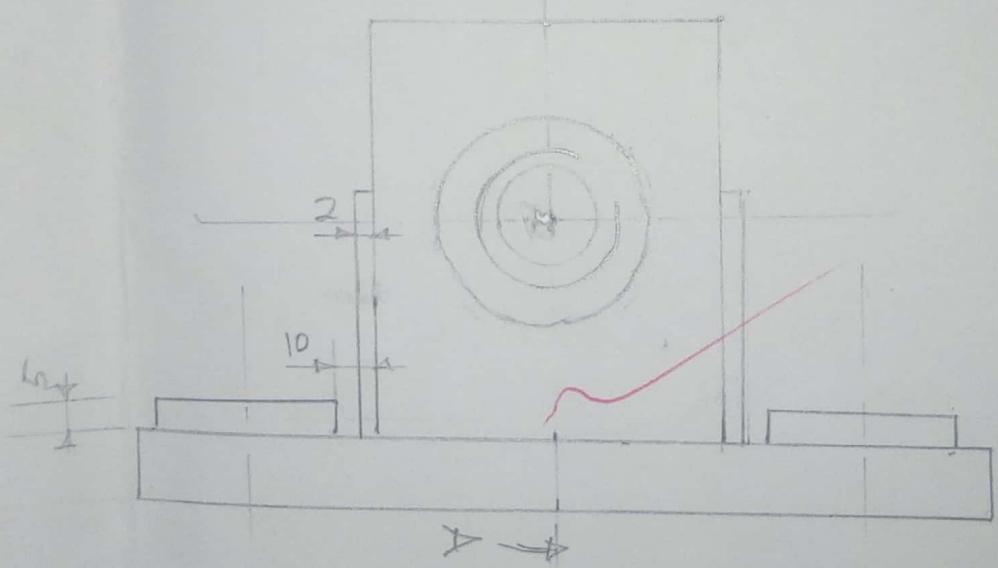
	SCALE: 1:2 DIMENSION: mm DATE: 30.01.2017	NAME: JOSEPH DAVID GROUP: OD 15 M CHECKED BY <u>X</u> <u>Jingale</u>	REMARKS
DIT.	AN ASSEMBLY OF BLOCK, SHAFT AND CAP.		DRG NO: 04



		d	MJ	M12
5	NUT	2	BRASS	
4	BUSH	1	MJ	
3	BOLT	1	MS	M12X102
2	PULLEY	1	CJ	
1	BRACKET	Ø14	MATI	STD

REMARKS





	scale: 1:2	DRAWN
	dimension: MM	GROUP
	DATE: 22/11/2016	CHECKED
DIT		
A BRACKET		

5