THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE
SCHOOL OF ENGINEERING AND ENGINEERING TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
FIRST SEMESTER EXAMINATION 2014/2015 ACADEMIC SESSION

MEE 101 (ENGINEERING DRAWING I) COURSE UNIT : 3

INSTRUCTIONS: Answer question one and any other two TIME ALLOWED: 3hrs
Indicate by the side of each drawing the scale you used

QUESTION ONE

Reproduce the **isometric projection** of the block shown in Figure 1 below. Draw its corresponding orthographic projection in **first angle projection** showing the **front elevation** in the direction X, **plan, and side elevation**. Include the projection symbol and scale used. (All Dimensions are in mm).

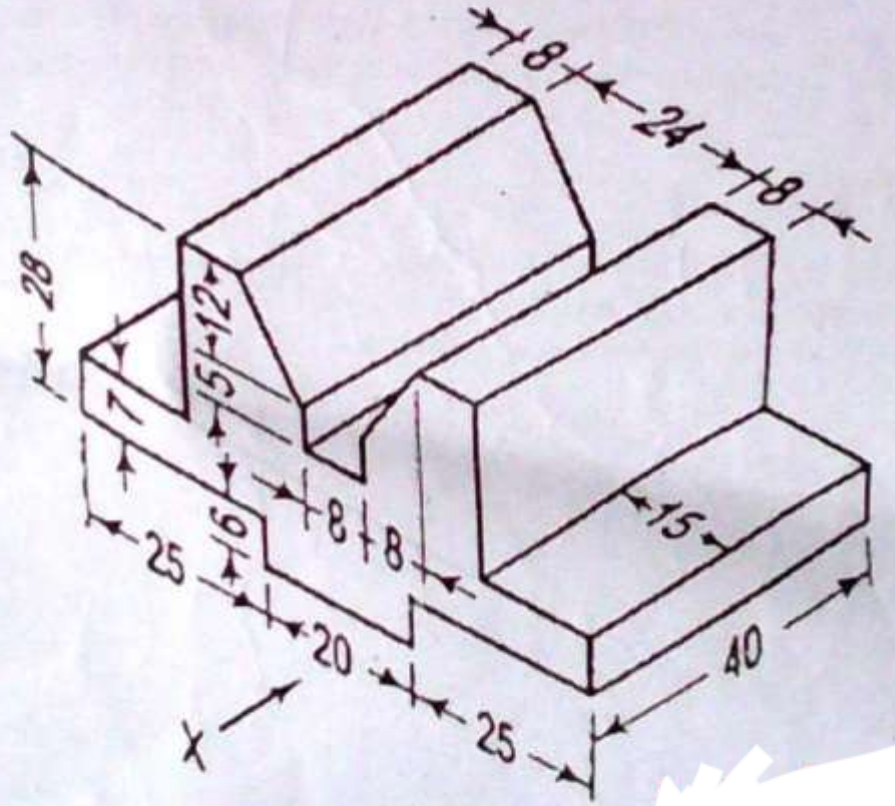

Figure 1

QUESTION TWO

(a) Construct triangle ABC such that AB = 60mm, BC = 52mm, AC = 70mm.
(i) Draw the circumscribing circle of triangle ABC
(ii) Inscribe a circle in triangle ABC
Write the diameter of the inscribed and circumscribed circle.

(b) Find graphically the circumference of a circle of diameter 70mm and check the results by calculation.

QUESTION THREE

(a) Draw an involute of a circle with radius 30mm

(b) An ellipse, parabola and hyperbola have a common focus of 60mm from the directrix. Draw all three curves if the eccentricity of the ellipse is 3/4 and for the hyperbola is 5/2.

QUESTION FOUR

(a) Draw an ellipse with a major axis of 170mm and minor axis of 110mm using the focal point method.

(b) Inscribe a heptagon in a circle of diameter 80mm. Redraw the circle used in constructing the heptagon and find the circumference of the circle using the graphical method.

QUESTION FIVE

(a) Construct a cycloid with a circle of radius 30mm

(b) A square, pentagon, hexagon, heptagon and octagon has a common side. Produce the polygons if the length of the common side is 50mm.

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DEPARTMENT OF MECHANICAL ENGINEERING
FIRST SEMESTER EXAMINATION 2013/2014 ACADEMIC SESSION

MEE 101 (ENGINEERING DRAWING I) **COURSE UNIT: 3**
INSTRUCTIONS: Answer question one and any other three. **TIME ALLOWED: 3 hrs.**
Indicate by the side of each drawing the scale you used.

QUESTION ONE

Reproduce figure 1 shown below and draw the views of the figure using **first angle projection** as indicated by the arrows in the diagram. (Arrows F, S and P represent the front, side and plan views respectively)

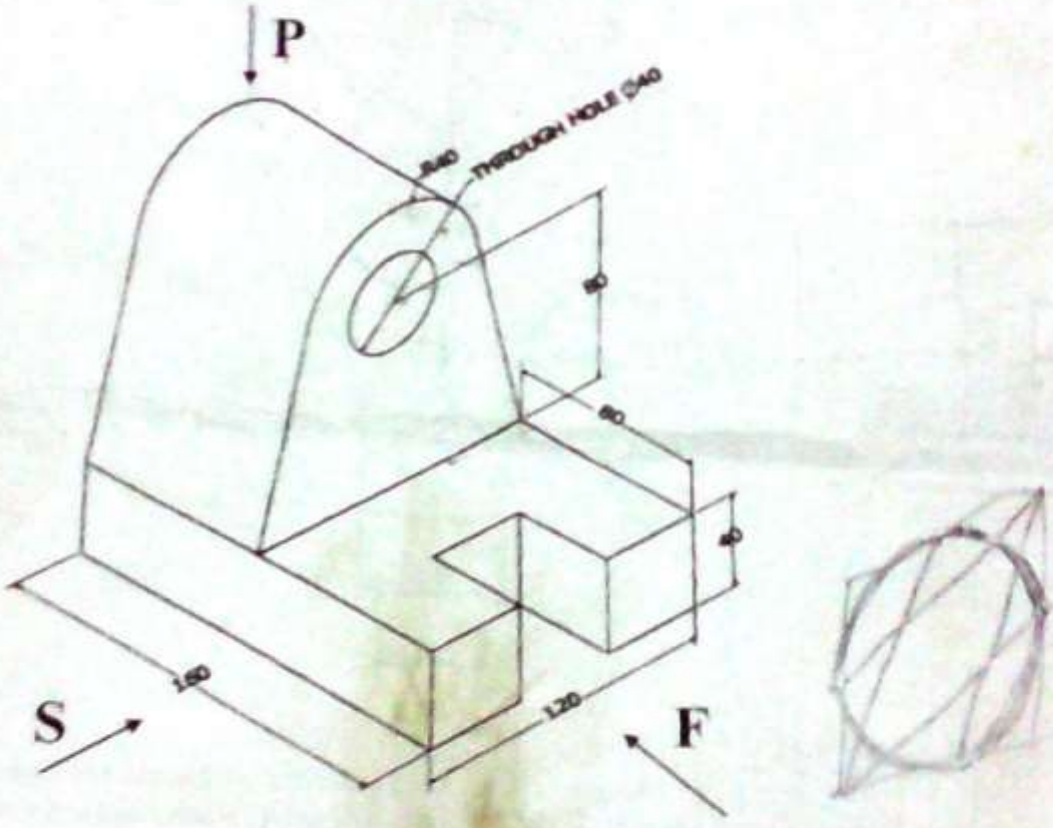

Figure 1

ESTION TWO

a) An ellipse, parabola, and hyperbola are to be drawn on the same directrix using the locus method. The eccentricity of the ellipse is 2/3, and the distance of the focus from the origin is 50mm. Produce the three loci if the eccentricity of the hyperbola is 3/2.

b) Find graphically the circumference of a circle of diameter 60mm.

QUESTION THREE

Construct a triangle ABC such that AB = 60mm, AC = 70mm and angle BAC = 67 ½

(i) Measure BC
(ii) Draw the circumscribing circle on triangle ABC
(iii) Inscribe a circle in triangle ABC
(iv) What are the diameters of the circles?
(v) Find the length of the circles by construction

QUESTION FOUR

Using the given dimensions and applying the principle of tangency; draw Fig. Q2 (full size)

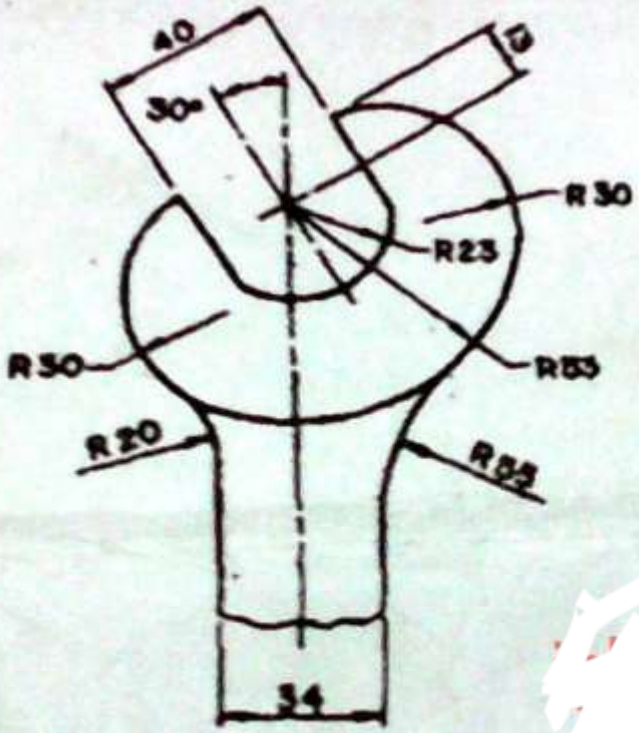

Figure 2

QUESTION FIVE

(a) Draw a regular pentagon with sides 50mm long using the construction method.
(b) Draw internal tangent to two circles of 30mm diameter if there center are 50mm apart.

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DEPARTMENT OF MECHANICAL ENGINEERING
MEE 101 ENGINEERING DRAWING I

FINAL TEST MAY, 2014

INSTRUCTION: Attempt question 1 and any other two questions
TIME ALLOWED: 2 hrs

QUESTION ONE

Reproduce figure 1 shown below and draw the views of the figure using **first angle projection** *as indicated by the arrows in the diagram. (arrows F, S and P represent the front, side and plan views respectively)*

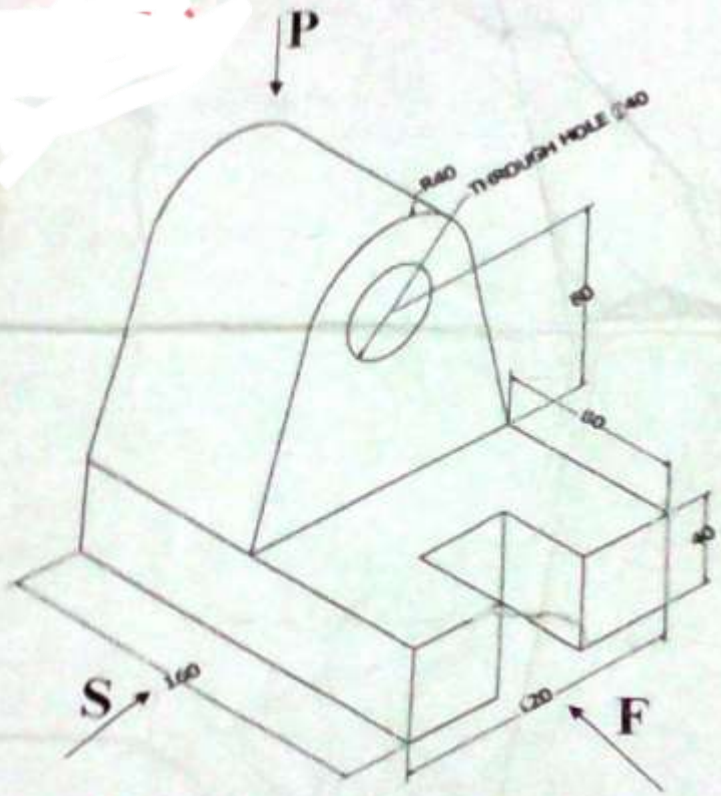

Figure 1

QUESTION TWO

A square, pentagon, hexagon, heptagon, and octagon has a common side, produce the polygons if the length of the common side is 60mm.

QUESTION THREE

An ellipse, parabola, and hyperbola are to be drawn on the same directrix using the locus method. The eccentricity of the ellipse is 2/3, and the distance of the focus from the origin is 50mm. Produce the three loci if the eccentricity of the hyperbola is 3/2.

QUESTION FOUR

Reproduce the object shown in Figure 2 using the principles of tangency

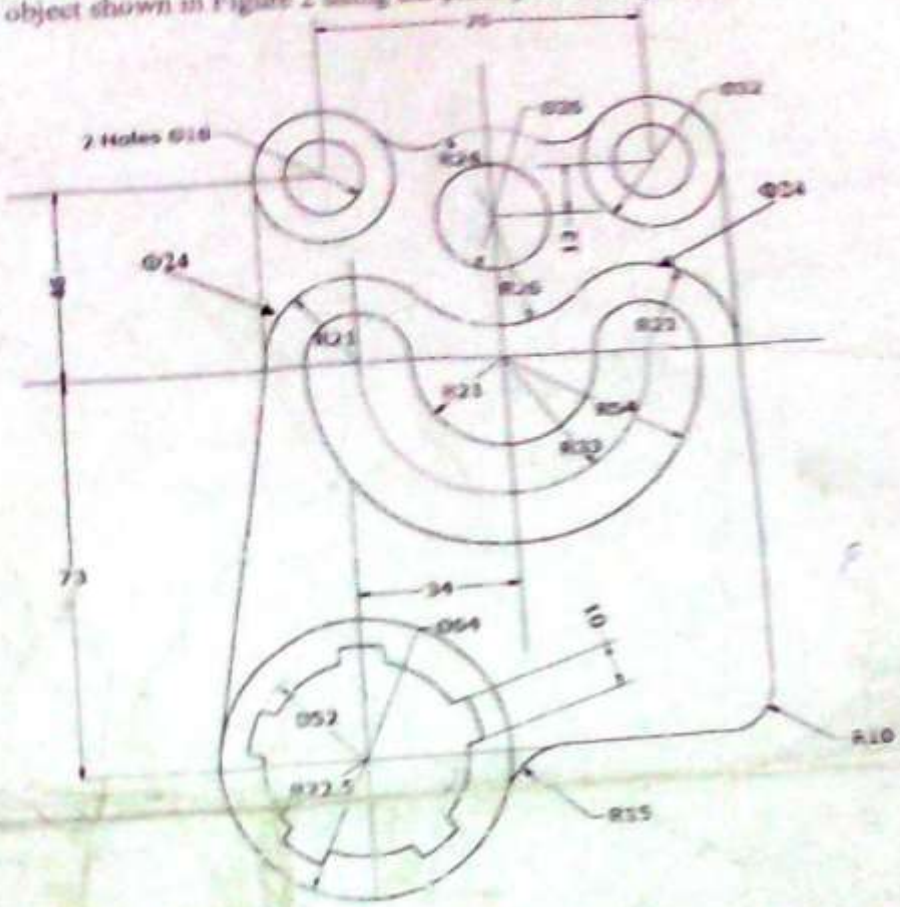

Figure 2

QUESTION FIVE

Draw the locus of point **L** in the slider-crank mechanism shown in Figure 3.

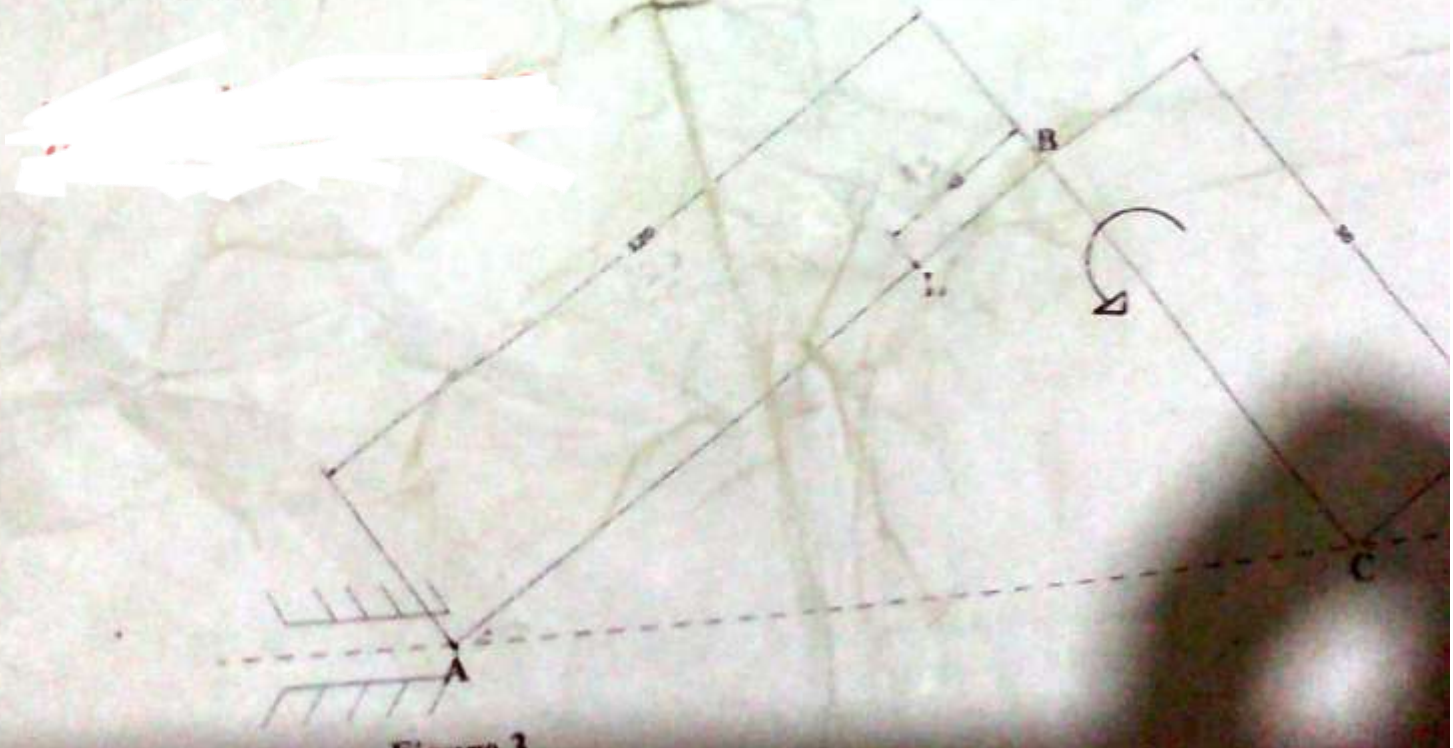

Figure 3

MECHANICAL ENGINEERING DEPARTMENT
FEDERAL UNIVERSITY OF TEHCNOLOGY, AKURE
FIRST SEMESTER 2015/2016 SESSION

COURSE CODE:	MEE 101
COURSE TITLE:	ENGINEERING DRAWING 1
GROUP:	SAAT
TIME:	1 HOUR 30 MINTUES

INSTRUCTION: ANSWER ALL QUESTIONS

1) Copy Figs 1a and 1(b) with dimensions using the lines indicated. Make all lines, except construction lines, black, bold and dense. Observe the distinction between thick and thin lines and keep line thicknesses consistent throughout.

2) A triangle ABC stands on side AB as base and has the following dimensions: AB 89 mm, AC 76mm, angle CAB 67½°. Construct the triangle and draw the inscribed circle.

3) Copy Fig Q.3 full size. Construction lines must not be erased and all centre lines must be shown as in the Figure.

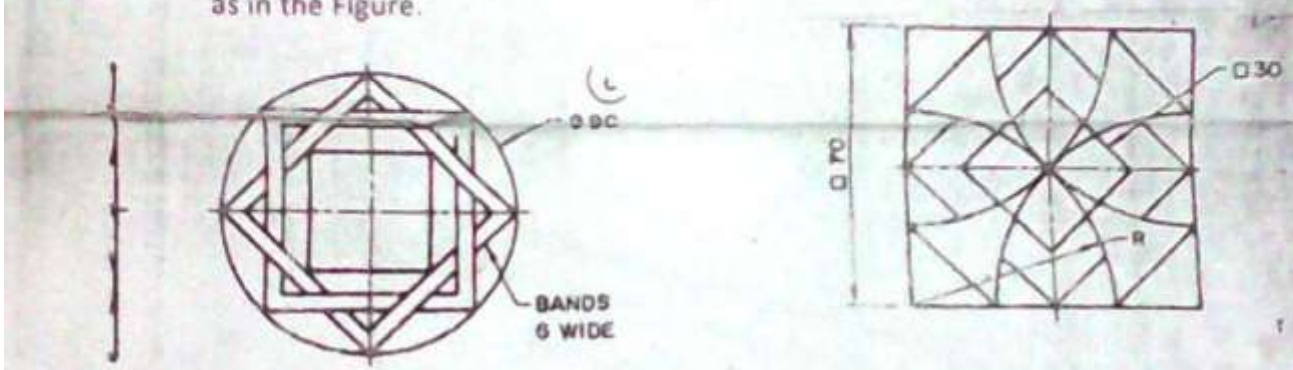

Fig Q 1(a)

Fig Q1(b)