THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

FORM TWO NATIONAL ASSESSMENT

070 **TECHNICAL DRAWING**

Time: 2:30 Hours **Year: 2019**

Instructions

1. This paper consists of sections **A** and **B** with a total of **seven (7)** questions**.**
2. Answer **all** questions in section A and any **two(2)** questions from section **B**
3. Section **A** carries **forty (40)** marks and section **B** carries **sixty (60)** marks.
4. Cellular phones and any unathorized materials are **not** allowed in the assessmenmt room.
5. Write your **Assessment Number** at the top right hand corner of every page.

FOR ASSESSOR'S USE ONLY		
QUESTION NUMBER	**SCORE**	**ASSESSOR'S INITIALS**
1		
2		
3		
4		
5		
6		
7		
TOTAL		
CHECKER'S INITIALS		

SECTION A (40 MARKS)

Answer **all** questions in this section

1. Choose the correct answer from the given alternatives and write its letter in the box provided.

   i) What is the name given to a section if the cutting plane passes through base and one slant side of a cone is also parallel to the axis of the cone?

   A. Parabola

   B. Hyperbola

   C. Ellipse

   D. Conical.

   ii) The points of locus which is lying inside the generating circle but also rolling the base of circle is called

   A. Inferior trochoid

   B. Superior trochoid

   C. Inferior epitrochoid

   D. Superior epitrochoid.

   iii) How are the smaller letters used in drawing?

   A. To give details

   B. To show hidden portions

   C. To show the parts to be removed

   D. To indicate notification to remember.

   iv) Which of the following is the type of triangle with all unequal sides and angles?

   A. Scalene triangle

   B. Equilateral triangle

   C. Right angled triangle

   D. Isosceles triangle.

v) Which of the following is the suitable factor for selection of drawing scale?

A. Type of scale material

B. Space available in the drawing sheet

C. Availability of drawing equipment

D. Type of drawing table.

vi) Which of the following line is used to join two or more circles by curves through their circumference?

A. Centre line

B. Tangential line

C. Blending line

D. Spiral line.

vii) What is function of a leader line in engineering drawing?

A. Indicating the length of blind hole, radius and arc

B. Indicating the diameter of a hole and radius of an arc

C. Indicating radius of a hole, curves and an arc

D. Indicating the extension line of the hole, curve and arc.

viii) What are the uses of mating dimensions in drawing processes?

A. To show the parts shaft that fit together

B. To locate the various features of a component relative to each other

C. To describe diameter, radii and the shape of component.

D. To show parts on the pictorial drawing only

ix) Which tools are used to draw a circle in free hand sketch?

A. Square and 45 degree center

B. Square and fingers

C. Wrist and 45 degree center

D. Square and shoulder.

x) Which methods are used to obtain size and shape of an inclined surface of the

block?

A. Orthographic projection or auxiliary view

B. Auxiliary view or revolution

C. Isometric or orthographic projection

D. Oblique or Isometric projection.

2. For each of the following statementrs, Write TRUE for correct statement and FALSE for an incorrect statement.

i) The shape of the section cut by an inclined plane parallel to one side of the cone is called a parabola.....

ii) The SI unit of dimension used to describe linear measurement in drawing is meter…….

iii) The chain thin double dashed line is the type of line used to show the limits of partial or interrupted view and sections……

iv) Two or more figures are similar if the ratio of their corresponding sides is not proportional……..

v) Irregular polygon can be the source to construct a triangle equal in area .....

vi) Two methods of representing orthographic views are first angle projection and third angle projection.

vii) Pictorial drawing is the technical process which converts the views from three dimensions to two dimensions…….

viii) Tangent is a straight line which touches the chord of circle at once .....

ix) The dimensions of the objects produced when making Freehand sketching should be accurate

x) In oblique projection the inclined edges may be drawn at angle of 30^0 ,45^0 or 60^0 to the horizontal.....

3. (a) Figure 1 shows uncompleted view draw in orthographic projection, complete the view by adding the missing lines.

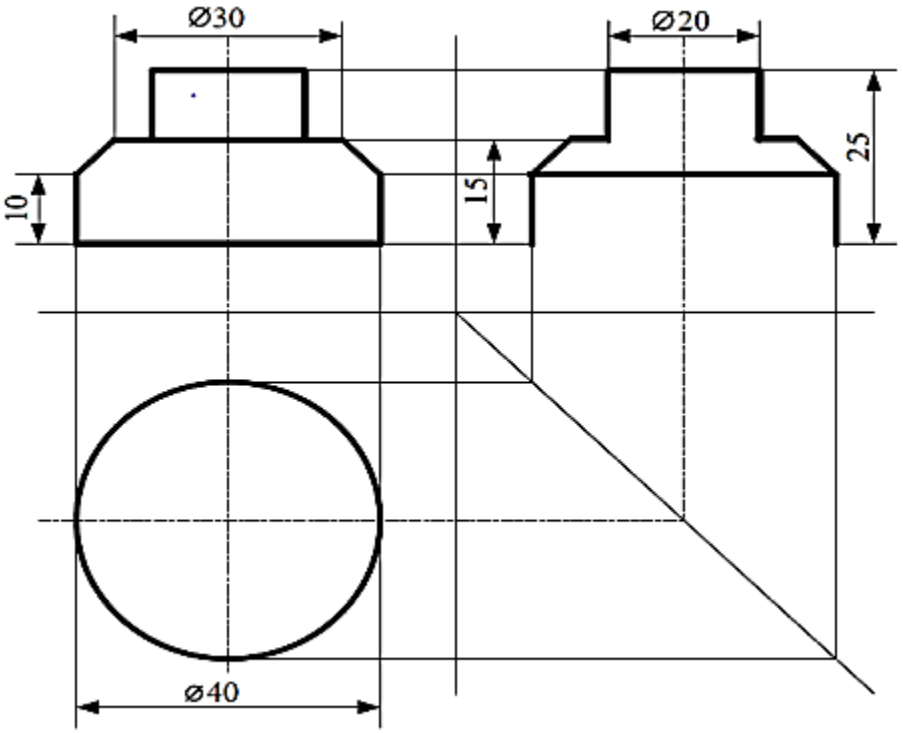

Figure 1

(b) Write one application of each of the following lines

i) Chain thin double-dashed line

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ii) Chain thick line

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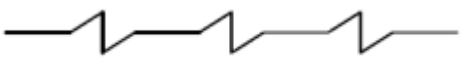
iii) Continous thin with zigzag line 

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iv) Continous thick line

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v) Dashed thin line — – – – — – – – – – – —

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4. (a) Figure 2 shows square ABCD, redraw the given square and construct an involute for that square.

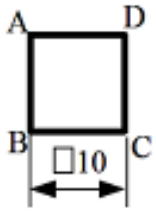

Figure 2

(b) Figure 3 shows an irregular pentagon ABCDE; reduce it to the ration 4:3

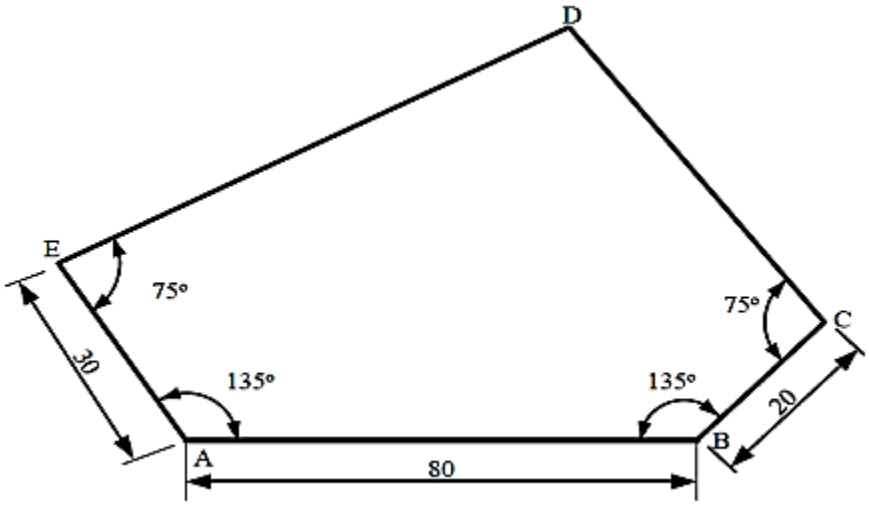

Figure 3

SECTION B (60 MARKS)

Answer **two(2)** questions from this section

5. Figure 4 shows three views of machine block drawn in first angle projection. Use full scale to draw it in isometric projection.

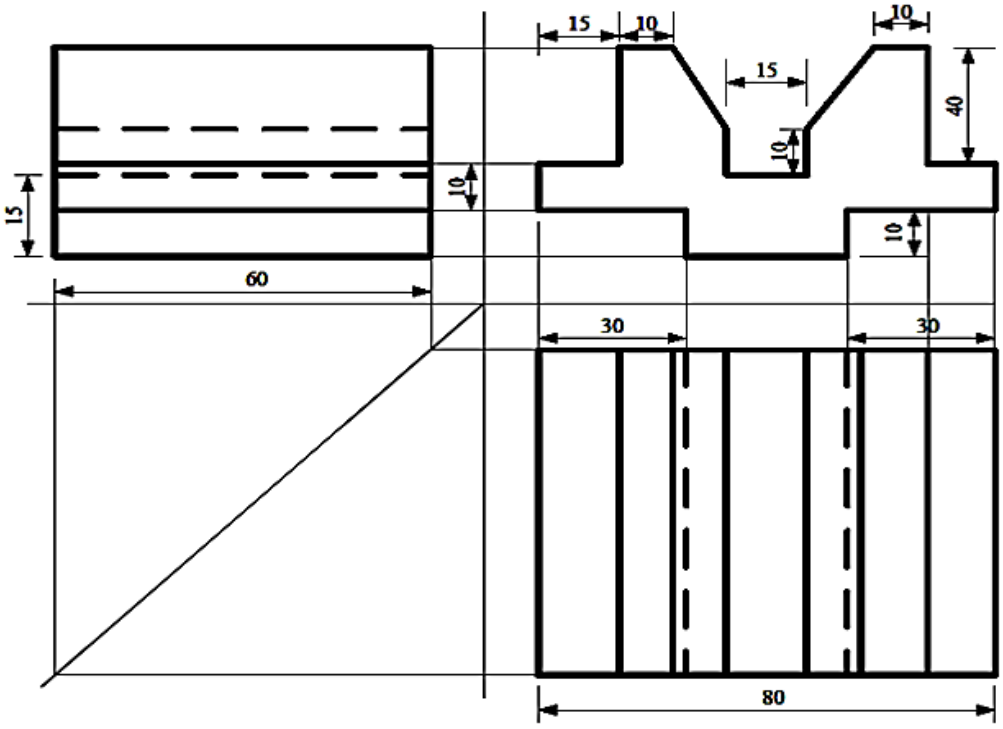

Figure 4

6. Figure 5 shows machine block in isometric projection. Using third angle projection and full size scale draw the following views:

   a) Front elevation from the direction of M

   b) Side view looking direction T

   c) Plan

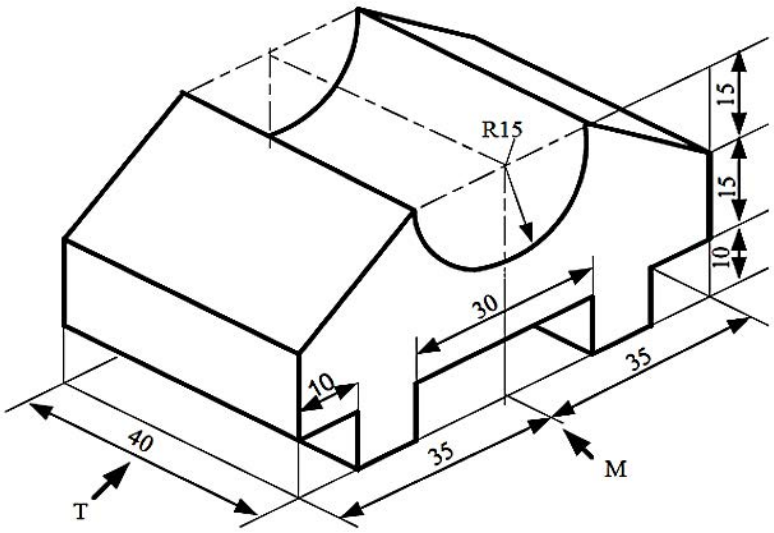

Figure 5

7. (a) The link mechanism of machine is given in Figure 6. Construct a locus of point C when point B of crank BD is hinged at point D making one complete revolution while point A is oscillating on the guide. Given that:

AB = 192, BC= 100, BD=75, AD=80

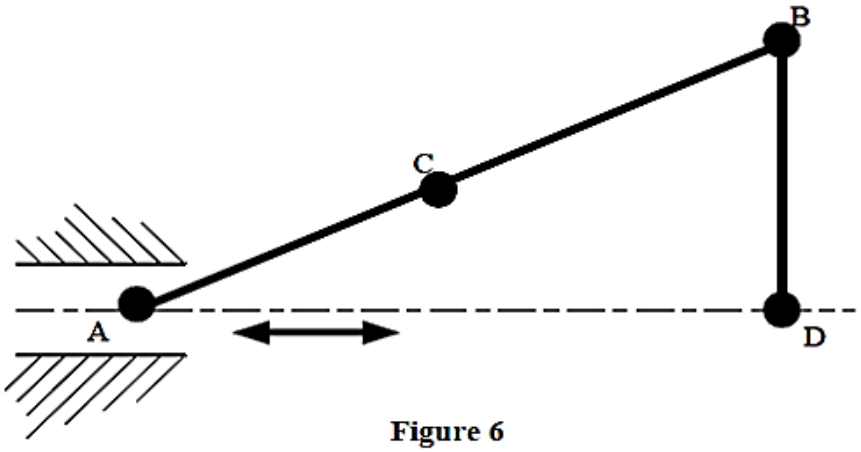

Figure 6

(b) Figure 7 shows two views of Machine parts in first angle projection. Using full size scale and third angle projection, draw an auxiliary view of the plan to the angle of 45°.

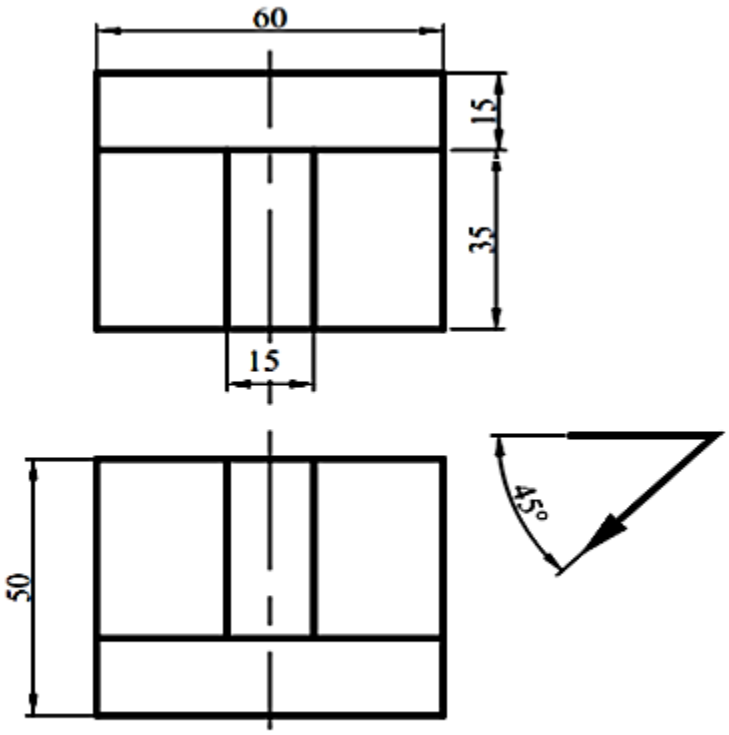

Figure 7