Student's Assessment Number .....

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATION COUNCIL OF TANZANIA
FORM TWO NATIONAL ASSESSMENT

091 **ENGINEERING DRAWING**

Time: 2:30 Hours. **Year: 2022**

Instructions

1. This paper consists of sections **A** and **B** with a total of **seven (7)** questions.
2. Answer **all** questions.
3. Section A carries **15** marks; section B carries **70** marks and section C carries **15** marks.
4. All writing must be in **black** or **blue** ink and drawings must be in **pencil**.
5. Cellular phones and unauthorized materials are **not allowed** in the examination room.
6. Write your **Assessment Number** at the top-right hand corner of every page.

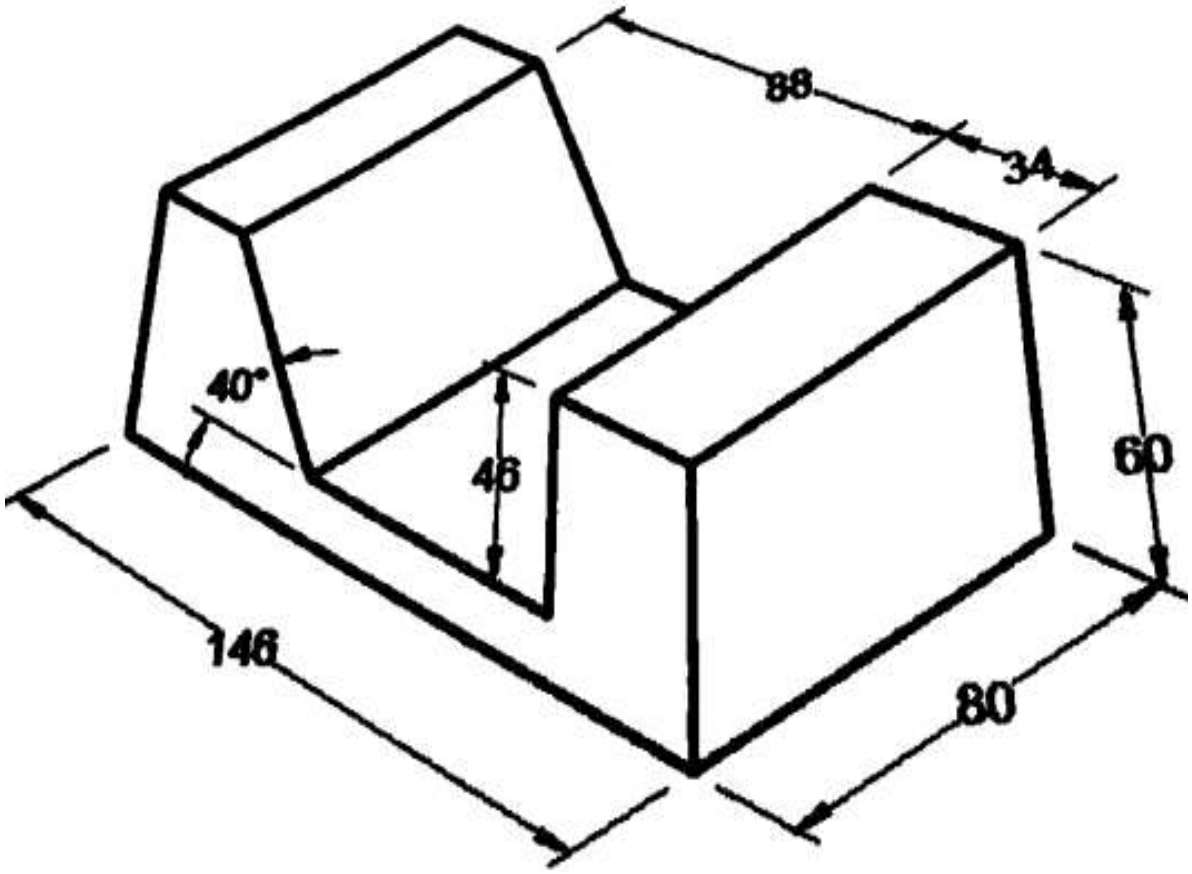
FOR EXAMINER'S USE ONLY		
QUESTION NUMBER	**SCORE**	**EXAMINER'S INITIIALS**
1		
2		
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TOTAL		
CHECKER'S INITIALS		

Student's Assessment Number .....

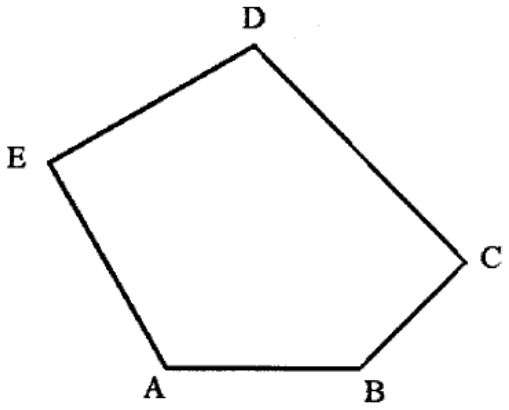
SECTION A (40 Marks)

Answer **all** questions from this section

1. Suppose you visited your uncle and found out he is struggling to convert an object below which is drawn in isometric to an oblique projection; draw the expected object after your uncle has completed a task.

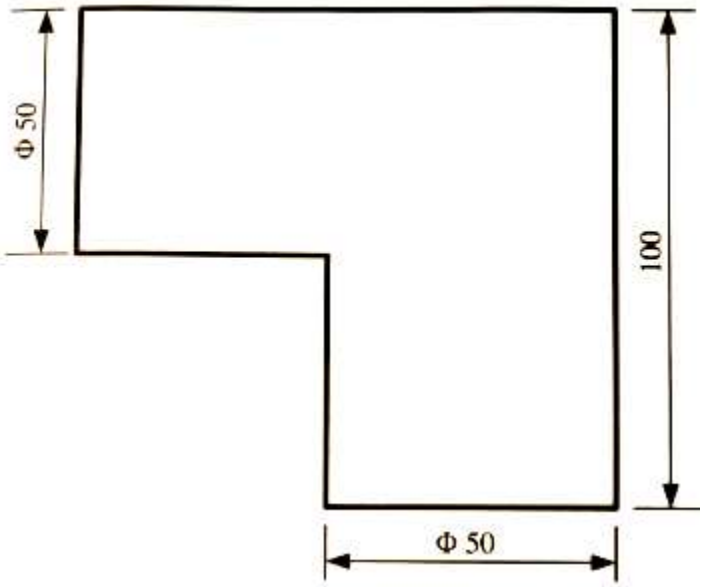


2. The given figure is a sketch of an irregular polygon shape of a housing cover for a machine submitted in drawing office by a welding technician. You are required to fabricate a similar cover but enlarged in length of each side by a ratio of 8:5. Construct the required new cover.



3. A petro station owner wants to change her fuels tank which is in ellipsoidal shape. Using an auxiliary circle method and 120 mm as major diameter and 80 mm minor diameter, construct the required shape.

4. The figure provided shows two cylinders joined at a right angle. Construct the lines of intersections. (Don't omit construction lines).



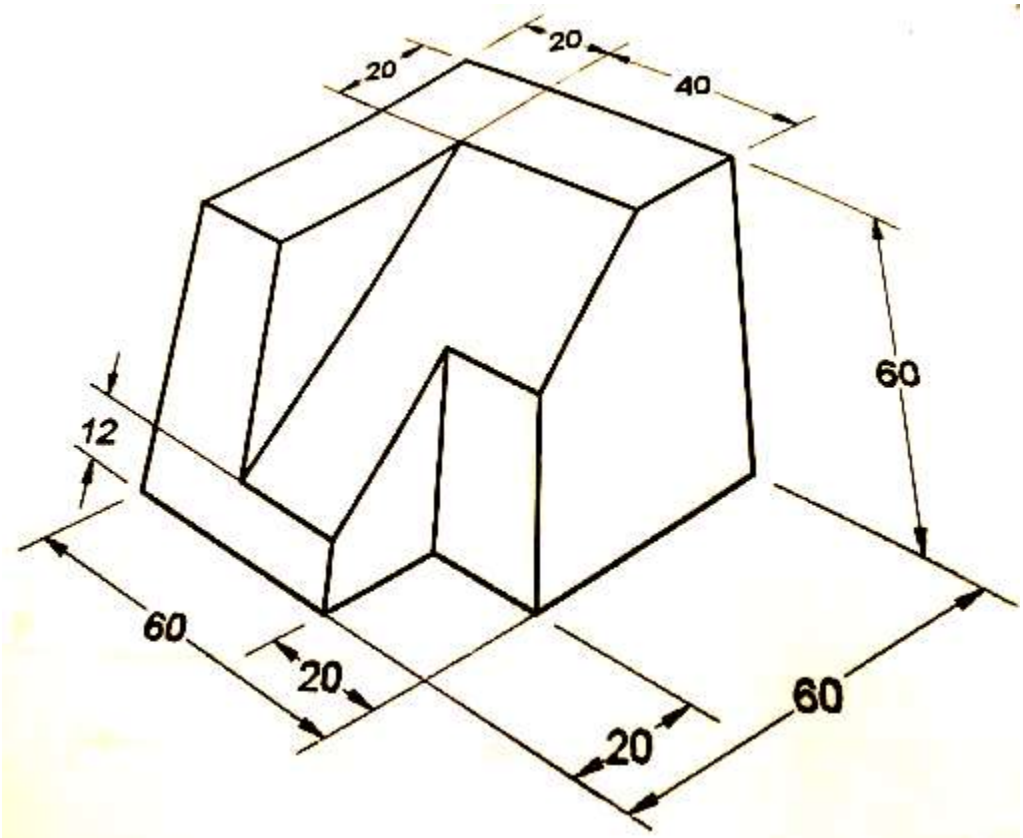
SECTION B (60 Marks)

Answer **all** questions from this section.

5. (a) Form one students were assigned a tutorial of paper layout. They were provided with tools like drawing sheet, ruler, 2H and 2B pencils. On conducting the task, you observe that the students suffered on how to sharpen their pencils. Provide sketches which will assist them to sharpen their 2H pencil to a chisel point and their HB pencil to a round point.

   (b) A construction company ordered a manufacturing company to make a plumb bob with the specification of 30 mm diameter and 70 mm height. Draw a freehand sketch in isometric projection of a require plumb bob which will help a manufacturer during production of the required component.

6. The figure shows a pictorial drawing of a stopping machine block. Using a scale of 1:1, draw a block into isometric projection.



7. (a) A certain technical school wish to conduct a seminar to students on the use of drawing tools. If you are invited as an expert in engineering drawing, briefly explain the function of the following drawing tools as part of your presentation.

   (i) Drawing board

   (ii) Drawing sheet (paper)

   (iii) T-square

   (iv) Set square

   (v) Protractor

   (vi) Compass

   (vii) Divider

   (viii) Eraser

   (ix) Pencil

   (x) Pencil sharpener

   (b) Given figure shows an irregular polygon ABCDEF. If AB = 85 mm, AF = EF = 75 mm, ED = 35 mm, BC = 60 mm; and angles FAB = AFE = FED = 105^0 and BCD = 90^0; enlarge the figure to the scale of 3:5.

