Name………………………………… Adm No…………………/…….Class……….

School…………………………………………………………Date ………………………….

Student’s Signature…………………………………….

**Form 2**

**Drawing and Design**

**TERM ONE 2024**

**Time Allowed 2 ½ Hours**

**FOR EXAMINERS USE ONLY**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **TOTAL** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**INSTRUCTIONS TO CANDIDATES.**

1. You should have the following for this examination:
   1. Drawing instruments
   2. 3 sheet of drawing paper size A3
   3. Answer all questions in the A3 papers provided
2. All dimensions are in millimeters unless otherwise stated.
3. Define the following terms

(a) What is a Quadrilateral? (1 mark)

(b) Assembly drawing (1 mark)

1. State any four areas which are involved in research and analysis of design item. (2 marks)
2. (a) illustrate using sketches how to determine the following sizes of drawing papers

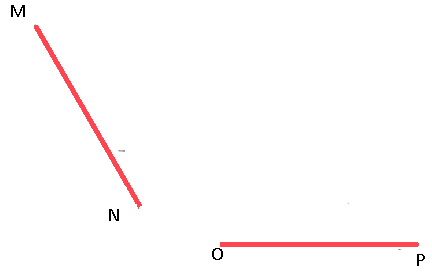
A1, A2, A3, A4. (2 marks)

(b) State four main ways of communicating ideas in design process (2 marks)

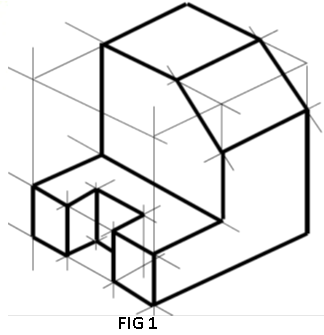
1. Illustrate three ways of dimensioning a diameter of a circle. (3 marks)

1. Construct a rectangle measuring 70mm by 30mm and convert to a square of equal area.

(6 marks)

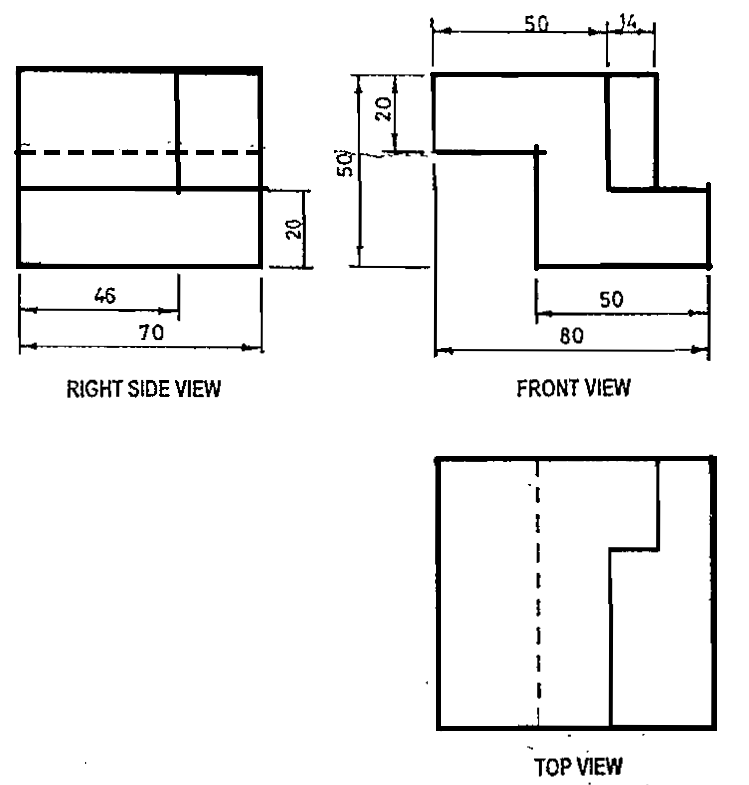
1. Join the lines drawn below with an arc of radius 50mm (4 marks)
2. **Figure 1** below shows a pictorial view of a block.

Using a third angle projection, sketch in good proportion the orthographic views of the block. (6 marks)



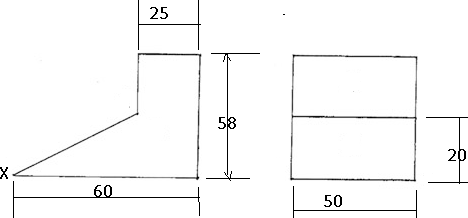
1. Figure 4 shows three views of a block drawn in first angle projection.

In good proportion, sketch two possible pictorial views of the block in oblique projection. (10 marks)

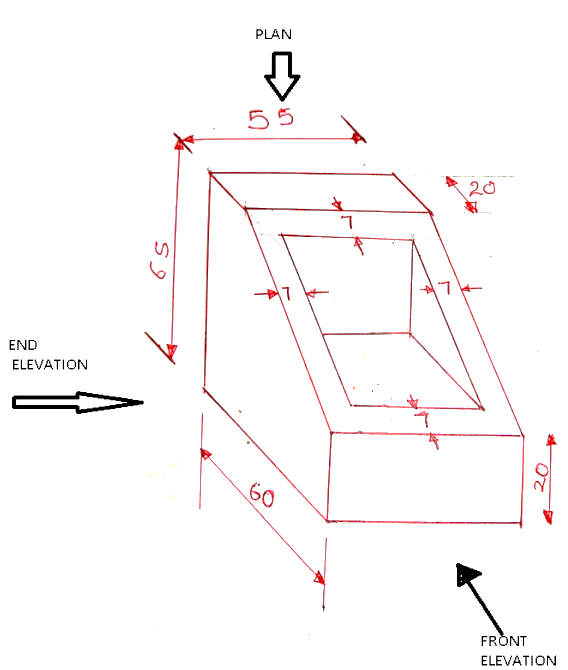


1. Construct a diagonal scale to read up to (1/100)th of a metre and long enough to measure up to 6 m. Take RF ¼ 1:50 and mark on the scale a distance of 4.58 m. (6 marks)
2. construct a regular heptagon inside a circle whose diameter is 60 mm. (6 marks)
3. Figure **5** shows two views of a block drawn in first angle projection. Draw the block in two point perspective taking **X** as the lowest point.

(6 marks)

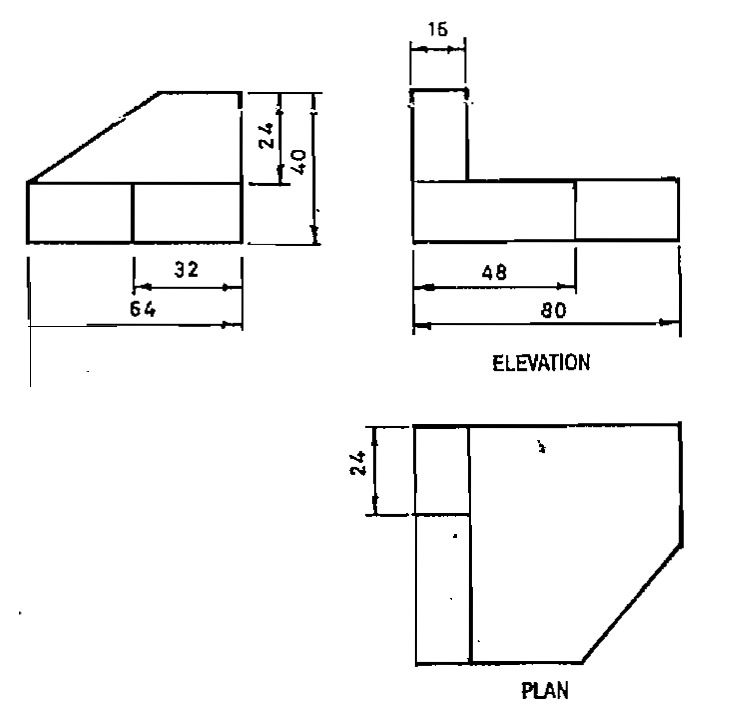


1. Fig 6 below shows a block drawn in **oblique**, draw the following views in third angle orthographic projection and dimension fully. (15 marks)
2. **Front Elevation**
3. **End Elevation**
4. **Plan**



1. **Figure 5**  shows two views of  a machine component drawn in first angle.

Draw the block in isometric projection. **(15 marks)**

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1. Figure **2** below shows a reciprocating water pump system.

Draw the locus of point **“C”** when the crank **BO** makes one complete revolution given that **B** is pin jointed to **AC** and **A** is allowed to move horizontally. (15 marks)

