JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

UNIVERSITY EXAMIMATION FOR THE DEGREE IN SCIENCE IN CONSTRUCTION MANAGEMENT

1ST YEAR 1ST SEMESTER 2023/2024 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TCB 1101

COURSE TITLE: ENGINEERING DRAWING I

EXAM VENUE: **STREAM: BSc. CONSTRUCTION MGT**

DATE: /12/2023 **EXAM SESSION:**

DURATION: 2 HOURS

Instructions

1. **Answer ALL questions in Sections A and B and ANY other TWO questions in Section C**
2. **Candidates are advised not to write in the question paper**
3. **Candidates must hand in their answer booklets and drawing papers to the invigilator while in the examination room.**

Registration No……

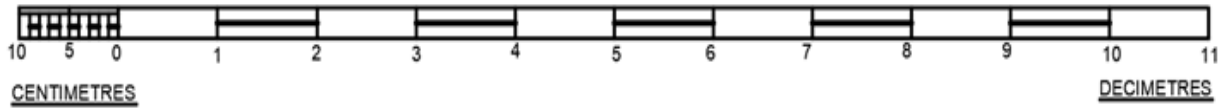
SECTION A: 10 Marks

This section has only one question which is compulsory. Answer all the items under this question in the booklet provided

QUESTION ONE (10 Marks)

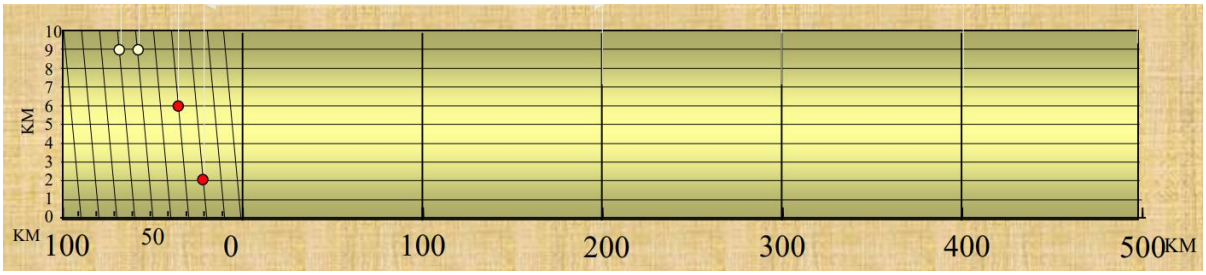
a) Answer the following
   i. Define Engineering Drawing (1 Mark)
   ii. What is the relevance of engineering drawing to your profession? (2 Marks)
   iii. Why do we use orthographic projections in design and not pictorial projection? (1 Mark)

b) Referring to the figure given, answer the questions below



   i. Name the type of scale which the figure represents (1 Mark)
   ii. Name the smallest unit which the figure can be used to accurately measure (1 Mark)
   iii. What level of accuracy of measurement is this scale suitable for? (1 Mark)

c) Below is a figure you have encountered in your drawing class. Refer to the figure to answer the questions that follow



   i. Name the figure (1 Mark)
   ii. What distance is represented by the distance from the 400km line to the lower dot between the zero and 50 marks? (1 Mark)
   iii. What is the maximum length which can be measured using the figure? (1 Mark)

SECTION B: 10 Marks

This section has only one question which is compulsory. Answer in the booklet provided.

QUESTION 2 (10 Marks)

Registration No……

a) You are given some drawing lines in Fig Q2(a)Use it to answer the questions that follow

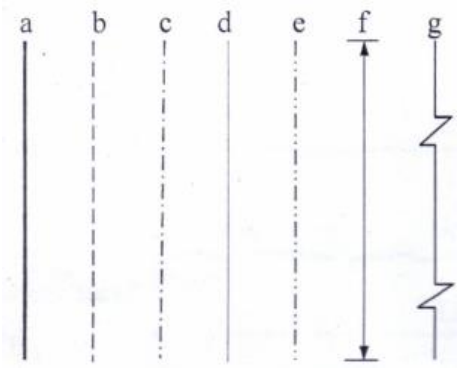


Fig Q2 (a)

i. Name the line marked **a** and state its purpose in technical drawing (2 Marks)

ii. Name the line marked **e** and state its purpose in technical drawing (2 Marks)

iii. Name the line marked **g** and state its purpose in technical drawing (2 Marks)

b) Listed here below are some drawing equipment which aid in drafting work. Name each equipment and state its purpose in drafting.

i. Equipment A (1 Mark)

ii. Equipment B (1.5 Marks)

iii. Equipment D (1.5 Marks)

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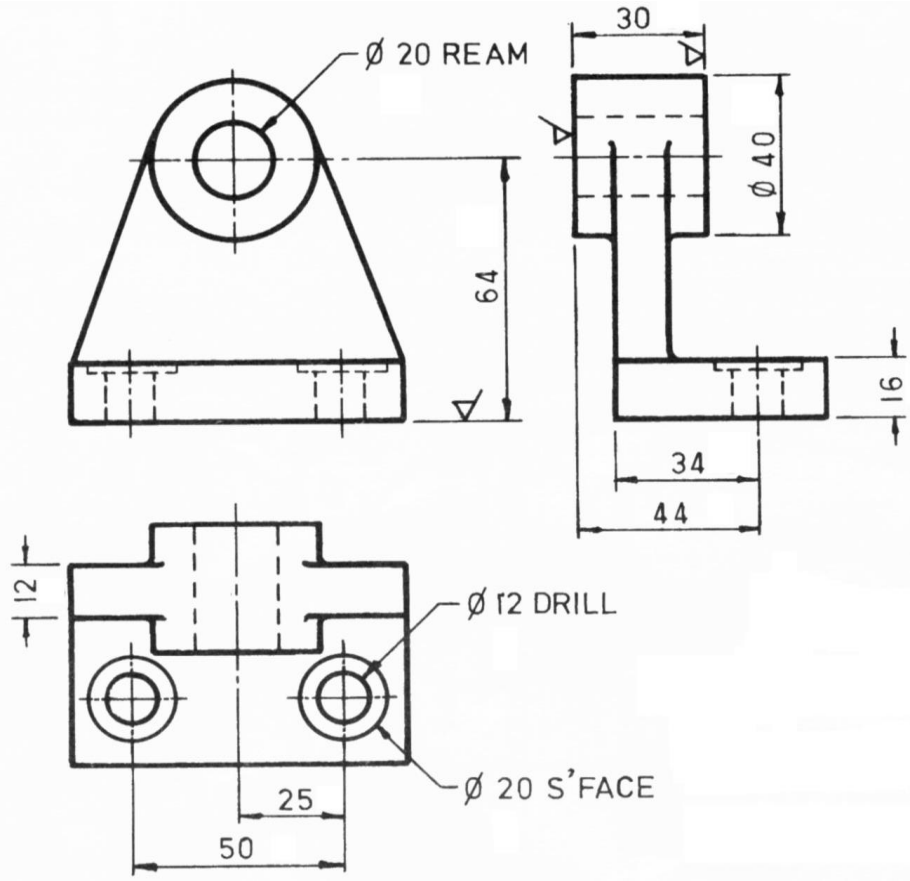
SECTION C: 30 Marks

Answer any two questions from this section. Use the drawing papers provided and not answer booklets. All the questions carry same marks (15 Marks).

QUESTION THREE (15 Marks)

Given the orthographic multi-views of an object below, develop the pictorial view using the isometric method



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QUESTION FOUR (15 Marks)

Figure Q4 shows a pictorial view of an object. Develop three orthographic views of the same. Show only the minimum views required to completely describe the object. Take the front as the side shown by arrow **X**.

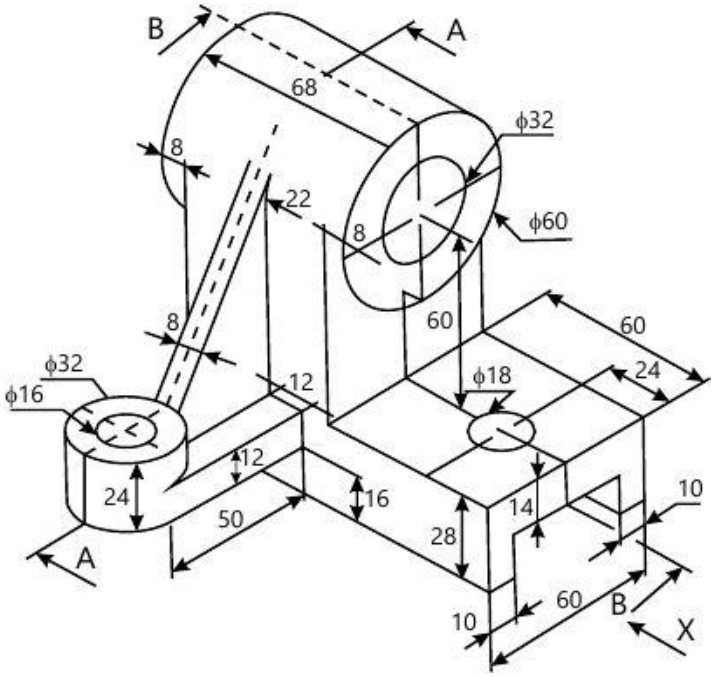

Fig Q4: Pictorial View

QUESTION FIVE (15 Marks)

a) A rectangular plot of land measuring 1.28 hectors is represented on a map by a similar rectangle of 8 sq. cm.
   i. Calculate RF of the scale. (2 Marks)
   ii. Draw a diagonal scale to read single meter; vertical scale to read single metre (4 Marks)
   iii. Show a distance of 438 m on it. (1.5 Marks)

b) Construct a scale of cords of any suitable radius. (3.5 Marks)
c) Use the scale constructed in b) above to answer the following:
   i. Construct any triangle of suitable dimensions and measure its internal angles (2 Marks)
   ii. Construct a line inclined at 30^o to another line which is inclined at 60^o to the horizontal line (2 Marks)

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QUESTION SIX (15 Marks)

a) Draw an ellipse in a parallelogram ABCD of side AB = 90 mm, BC = 110 mm, and angle ABC = 120°. (7.5 Marks)

b) Draw a parabolic arc with a span of 1000 mm and a rise of 800 mm. Use the rectangular method. (7.5 Marks)