KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF

BACHELOR OF SCIENCE

HEH 207: TECHNICAL DESIGN AND DRAWING

DATE: Tuesday, 9th May 2017 **TIME:** 8.00 a.m. - 10.00 a.m.

INSTRUCTIONS:

This paper consists of two sections A and B

Answer question one (compulsory) in section A

1. (a) Line work is an important part of technical design and drawing. Illustrate five types of lines and possible areas of application in the drawing process. (10 marks)

   (b) Draw the appropriate symbols for each of the following items indicating possibly where such utilities can be located in the building plans.
   - (i) Emergency lamp
   - (ii) Electric bell
   - (iii) Single switched socket outlet
   - (iv) Water closet
   - (v) Kitchen basin (10 marks)

SECTION B: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

1. (a) Construct an isometric cube of length 50mm and on each of the visible planes show the construction of isometric circles. (10 marks)

   (b) Briefly describe the importance of the following departments in the approval of building plans:
   - (i) Engineering department
   - (ii) Physical planning department
   - (iii) The Local authority
   - (iv) Public health department
   - (v) Lands department (10 marks)

2. (a) Construct an ellipse given the major axis AB as 86mm and the minor axis CD as 50mm. (7 marks)

(b) A belt drive has to be transmitted through two pulleys of diameters 60mm and 40mm respectively, placed 100mm apart. Using the principal of tangency, construct the drive assembly showing the tangential contact of the best on the pulleys. (8 marks)

3. (a) Construct a triangle given its perimeter as 150mm and the ratio between its sides as 2:3:4.5 (6 marks)

(b) A vertical line AB 110mm long is allowed to move in such a manner that the end A moves vertically downwards to B while the end B moves horizontally outwards to C. Draw the path traced by the point P which is 70mm from B as the line moves. (9 marks)

4. A pictorial view of a certain block is shown in the **figure 1** below. Using first angle projection, draw the following views;

(i) A front elevation in the direction of arrow **F**

(ii) An end elevation in the direction of arrow **E**

(iii) A plan view

Include six important dimensions. (15 marks)

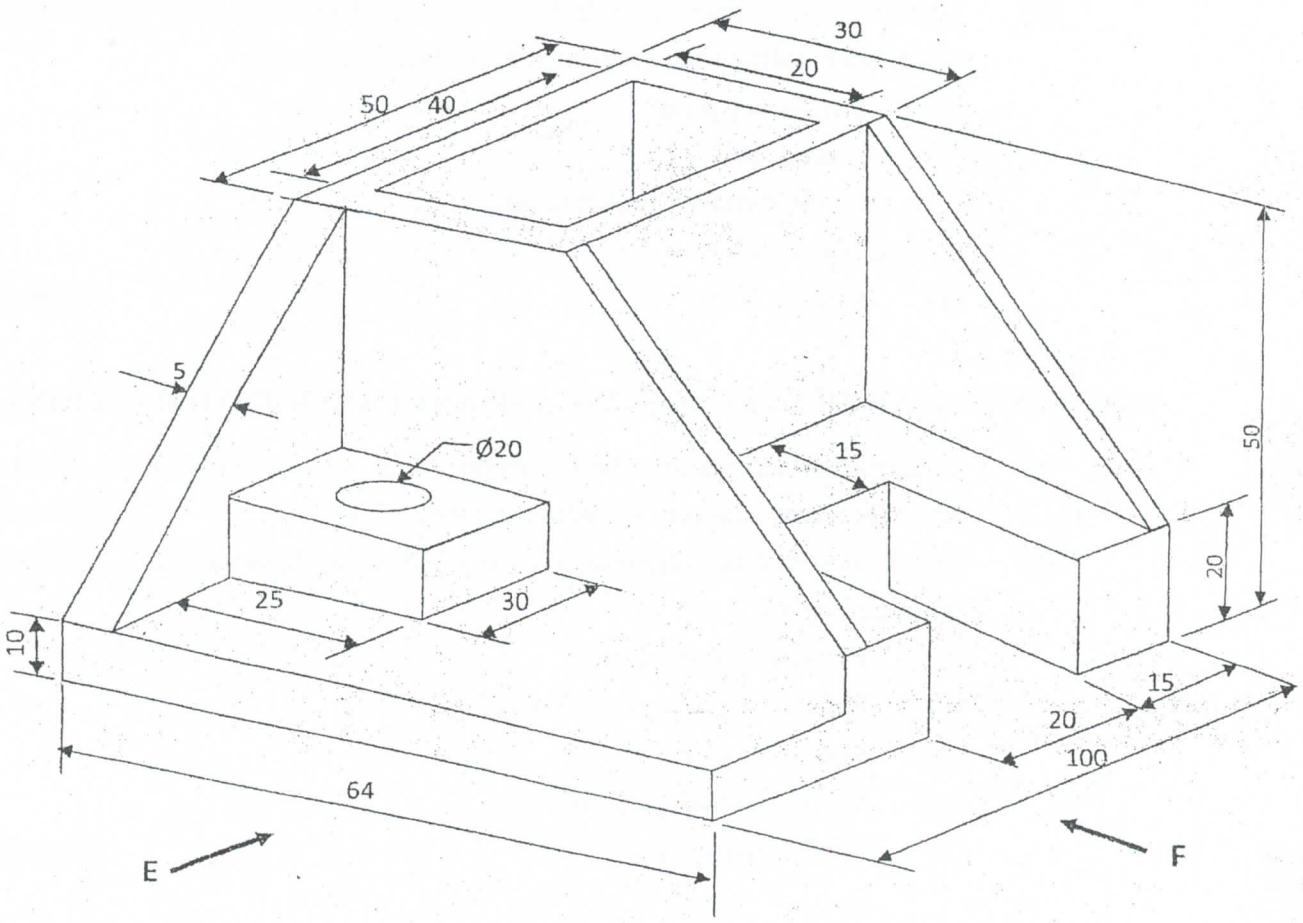

FIG 1