MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SPECIAL / SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (CIVIL ENGINEERING)

ECV 100 ENGINEERING DRAWING I

DATE: 29/8/2022   **TIME: 2.00-4.00 PM**

INSTRUCTIONS:

Answer question one and any other two questions

QUESTION ONE (30 MARKS)

a)   Differentiate between the following pairs of terms as used in engineering drawing:

   i.   First angle projection and third angle projection   (3 marks)

   ii.   Construction lines and projection lines   (3 marks)

b)   Sketch and name any three parts of a T-square   (2 marks)

c)   List any five requirements of good lettering   (2 marks)

d)   With a pair of compass and a straight edge only, construct two straight lines, AO and OB, meeting at an angle of 30°. Construct a circle of diameter 76 mm to touch these two lines and a smaller circle that will touch the two converging lines and the first circle. Also construct a third circle of diameter 64 mm which touches each of the other two circles. (10 marks)

e)   Visitors must stand at least 2 m away from the walls of a monkey enclosure at the zoo. The enclosure is elliptical in shape. The major and the minor axis is 10 m by 8 m respectively. By the method of concentric circles, draw an accurate diagram to show where the visitors must not stand. Use a scale of 1: 100.   (10 marks)

QUESTION TWO (20 MARKS)

A pentagonal pyramid, edge of base 30 mm and height of axis 60 mm, stands on its base with an edge of base parallel to the vertical plane. A section plane cuts the pyramid at a point 30 mm from

the base along the axis and makes an angle of 45o with the horizontal plane. Draw sectional top view and development of truncated portion of the pyramid.

QUESTION THREE (20 MARKS)

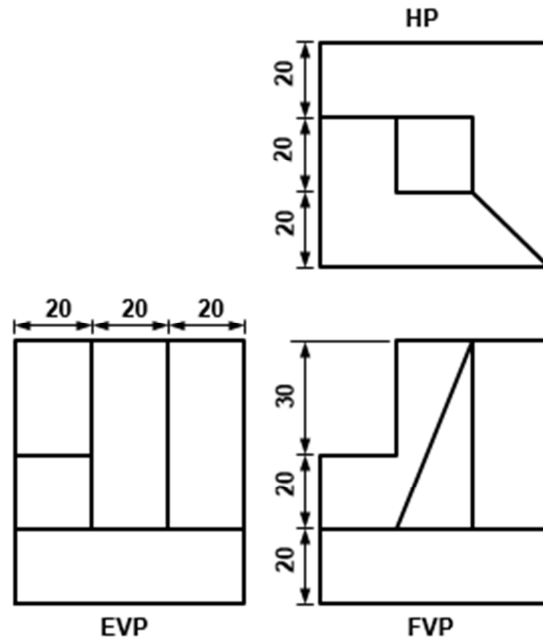Draw the isometric view of the orthographic projection given in Figure Q3

Figure Q3

QUESTION FOUR (20 MARKS)

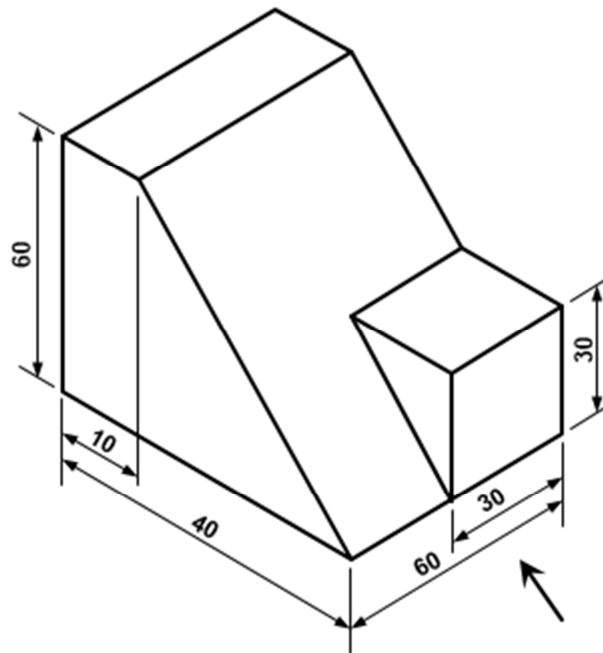Draw first angle orthographic projection of Figure Q4. The arrow points to F.V

Figure Q4