



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST SEMESTER EXAMINATION FOR BDEGREE IN BACHELOR OF SCIENCE IN
CIVIL ENGINEERING

ECV 200: ENGINEERING DRAWING 11

Date: 4/12/2015

Time: 2:00 – 4:00 PM

INSTRUCTIONS:

- *This paper comprises five questions*
- *Question one is compulsory and carries 30 marks*
- *All other questions carry 20 marks each*
- *Answer question one and any other two questions* **TOTAL: 70 MARKS**

QUESTION ONE (30 MARKS)

- A. A regular Hexagon ABCDEF of 30 mm side is in the front view of a plate when its surface is inclined at 30^0 to the V.P. Draw the projections when its side AB is in V.P. and inclined at 45^0 to the H.P. (8 marks)
- B. A pentagonal pyramid, having a base with 30 mm side and a 70 mm long axis, is resting on its base in the **H.P.** with an edge of the base nearer the **V.P.**, parallel to it. A vertical section plane inclined at 45^0 to the **V.P.** cuts the pyramid at a distance of 8 mm from the axis. Draw its sectional front view, top view and true shape of the section. (8 marks)
- C. The corners of a quadrilateral PQRS are as follows: P is 25 mm above HP and 50 mm in front of VP, Q is in HP and 80 mm in front of VP. R is 50 mm above HP and 40 mm in front of VP. S is 65 mm above HP and 20 mm in front of VP. The distances between the vertical projectors parallel to the XY lines are as follows: Between P and S is 20 mm, between P and Q is 35 mm, between P and R is 60 mm. Draw the top and front views of the quadrilateral and find its true shape. (8 marks)
- D. Draw an isometric view of a hexagonal plane with a 40 mm sides such that its surface is parallel to the V.P. and a side perpendicular to H.P. (6 marks)

QUESTION TWO (20 MARKS)

A. Figure 1 shows an isometric view of an object. Draw the following views.

- i) Front view in direction of arrow,
- ii) Top view, and
- iii) Sideview from right.

(12 marks)

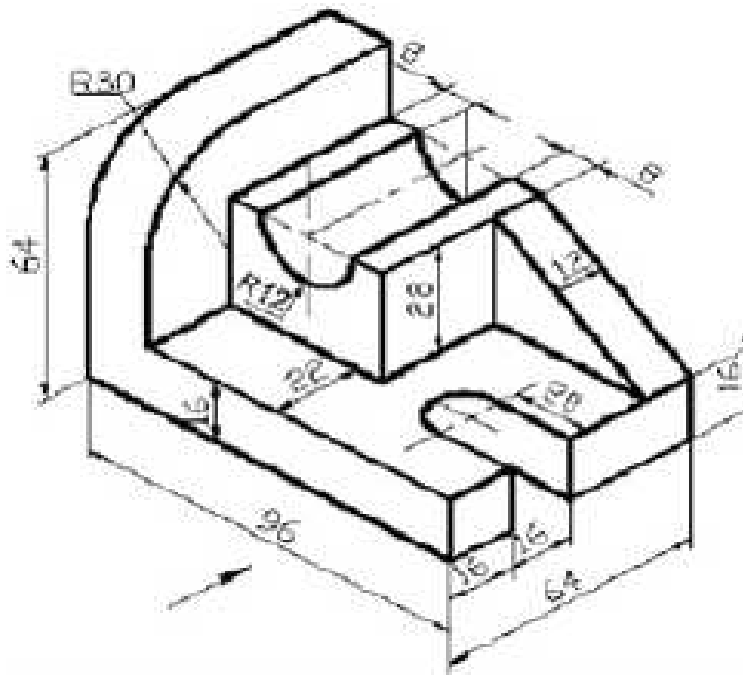


Figure 1.

B. Figure 2. Shows front view of a cut cylinder with base diameter 60 mm. with its axis parallel to V.P. and perpendicular to H.P. Draw the development of the lateral surface of the part P of the cylinder.

(8 marks)

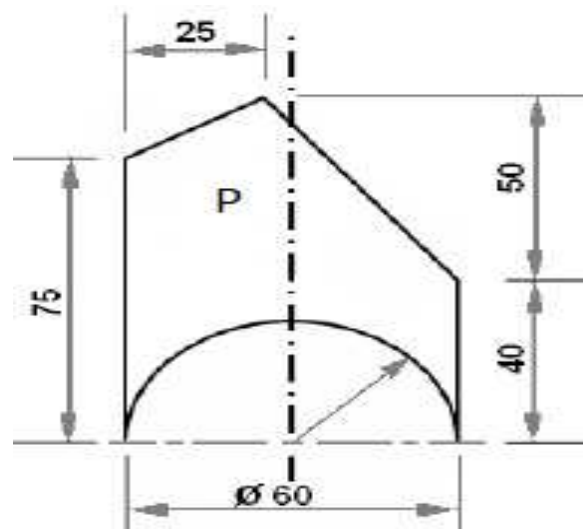


Figure 2.

QUESTION THREE (20 MARKS)

A cone diameter of base 60 mm and height 70 mm is lying on the ground with one of the generators its axis parallel to V.P. It is cut by a vertical section plane inclined at 40 degrees to the V.P. Draw the sectional front view, top view and true shape of section. (20 marks)

QUESTION FOUR (20 MARKS)

A. What do you mean by key points? What is its significance in intersection of surfaces?

(6 marks)

B. A cylinder with a 70mm base diameter is resting on its base on the H.P. It is completely penetrated by a cone with an 80 mm base diameter and 100 mm base diameter and a 100 mm long axis. The axes of the two solids are parallel to the V.P. and bisect each other at right angles. Draw three views of the combination and show curves of intersection. (14 marks)

QUESTION FIVE (20 MARKS)

A. Draw the cavalier and cabinet projections of a pentagonal plane with a 30 mm side. Having its surface perpendicular to both the principal planes. Consider receding axis makes 45° with the horizontal. (10 marks)

B. Draw the cabinet projection of a square prism, with a base of 40 mm diameter and a 70 mm long axis,

- (a) When the base is on the V.P. and an edge of the base is parallel to the H.P., and
- (b) When a rectangular face is parallel to the V.P. (10 marks)