UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: BSC ABE II

COURSE CODE: ABE 202

TITLE OF PAPER: ENGINEERING DRAWING

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: DRAWING EQUIPMENT

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER QUESTIONS.

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## QUESTION 1

a) Figure 1a shows a multi-view drawing of an object. The dimensioning has some mistakes.

i. State the mistakes in the dimensioning of the object. [6 marks]

ii. Dimension correctly the same drawing shown in Figure 1b (attached sheet, page 6) and submit with the your answer script.

[6 marks]

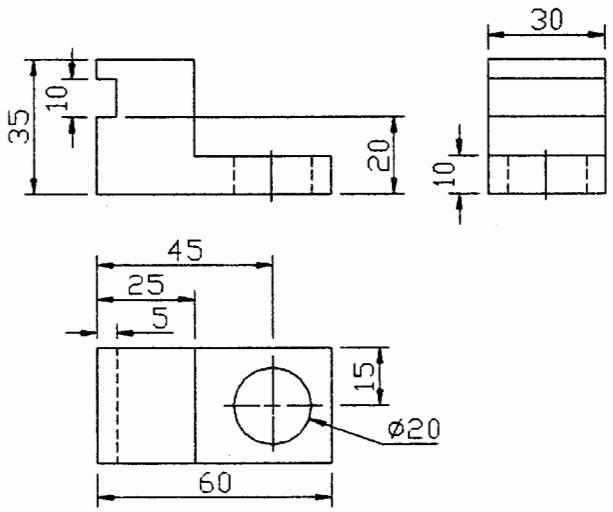


Figure 1a an incorrectly dimensioned multi-view of a bracket

b) What advantages does Computer Aided Drafting, CAD have over traditional mechanical drafting in engineering drawing?

[10 marks]

c) Figure 2 shows a pictorial view of an end block.

i. Draw the orthographic views of the end block on the attached sheet (Page 7). Submit the drawn views with your answer script.

[12 marks]

ii. Draw an auxiliary view to show the true shape and size of face A.

[6 marks]

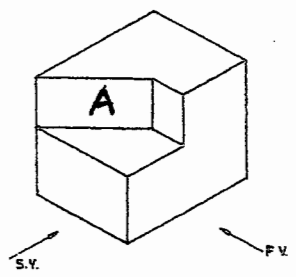


Figure 2 Isometric view of an end block.

**SECTION II ANSWER ANY TWO QUESTIONS**

**QUESTION 2**

a) Using sketches of a cube, distinguish between perspective, oblique, isometric and orthographic projections of objects. [12 marks]

b) Give one example of where each projection is applied [8 marks]

c) The bracket shown in Figure 3 is to be drawn on an A3 paper (420 x 297 mm). Determine the scale one would use to draw the orthographic projections of the bracket.

Hint:

1 Allow 10 mm border line around the paper edge.
2 Allow 40 mm between the views for dimensioning purposes.

[10 marks]

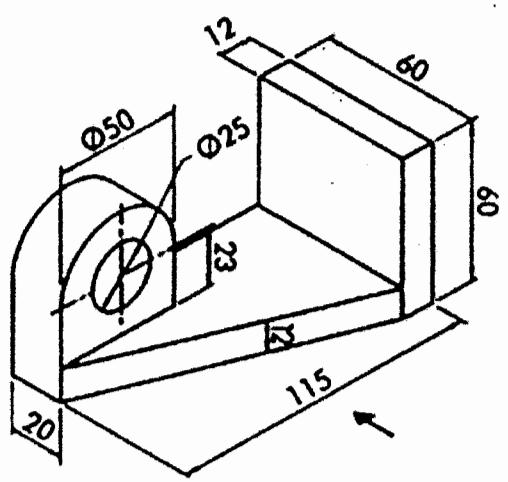


Figure 3 an anchor bracket.

**QUESTION 3**

a) What are the key objectives of sectioning? [4 marks]

b) Name any five types of sectioning. [10 marks]

c) Figure 4a shows a sectioned view of a flange in three dimensions. The six possible ways of showing the front view of the sectioned flange are shown in Figure 4b.

i. What type of sectioning was performed? [3 marks]
ii. What is the correct front view of the sectioned flange? [3 marks]
iii. What is wrong in each of the other views you have left? [10 marks]

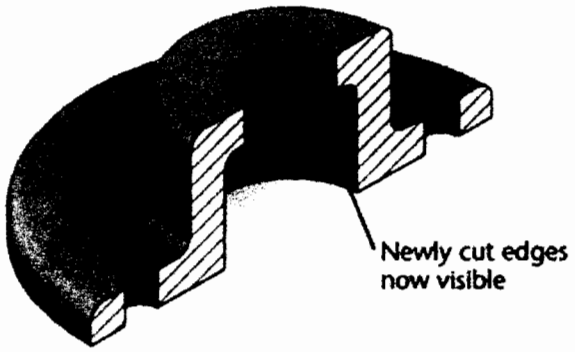


Figure 4a A perspective view of a sectioned flange

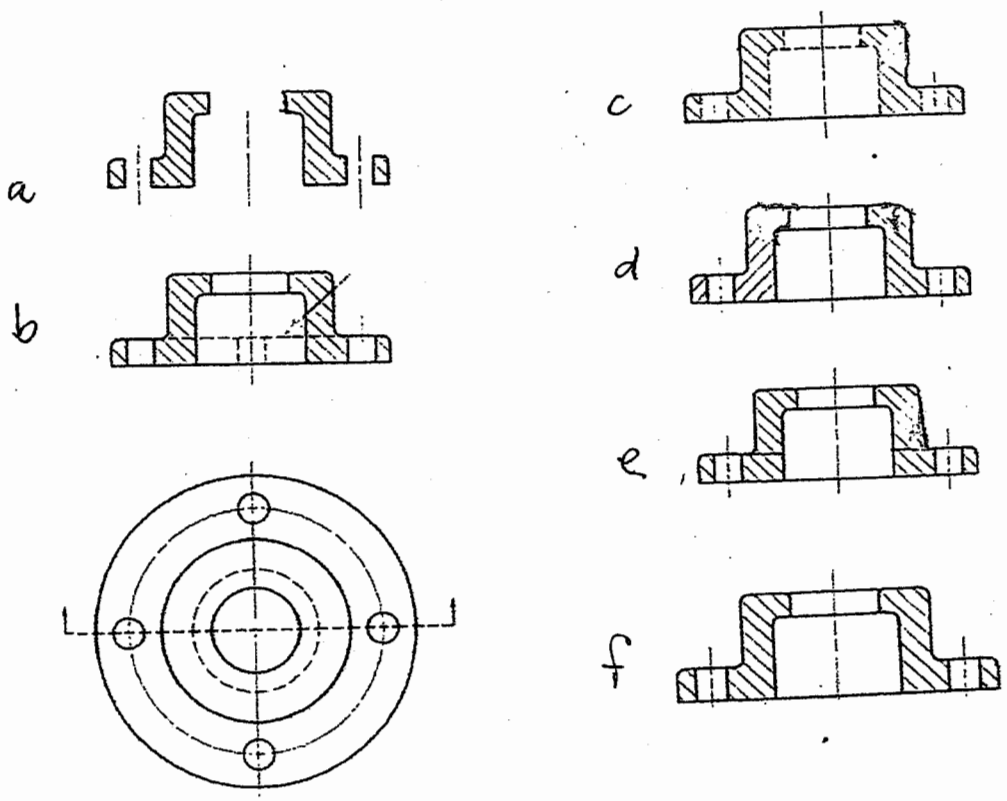


Figure 4b Possible sectional views of the flange

## QUESTION 4

a) Compare and contrast the following output components of a computer hardware that is used for Computer Aided Drafting, CAD.

i. Printer [4 marks]
ii. Monitor [4 marks]
iii. plotter [4 marks]

b) Distinguish between

i. Absolute and Relative Cartesian Coordinates systems [4 marks]
ii. Absolute and Relative Polar Coordinate systems [4 marks]

c) Name the sections labelled 1, 3, 11,15 and 21, in the AutoCAD 2007 graphics screen shown in Figure 5

[10 marks]

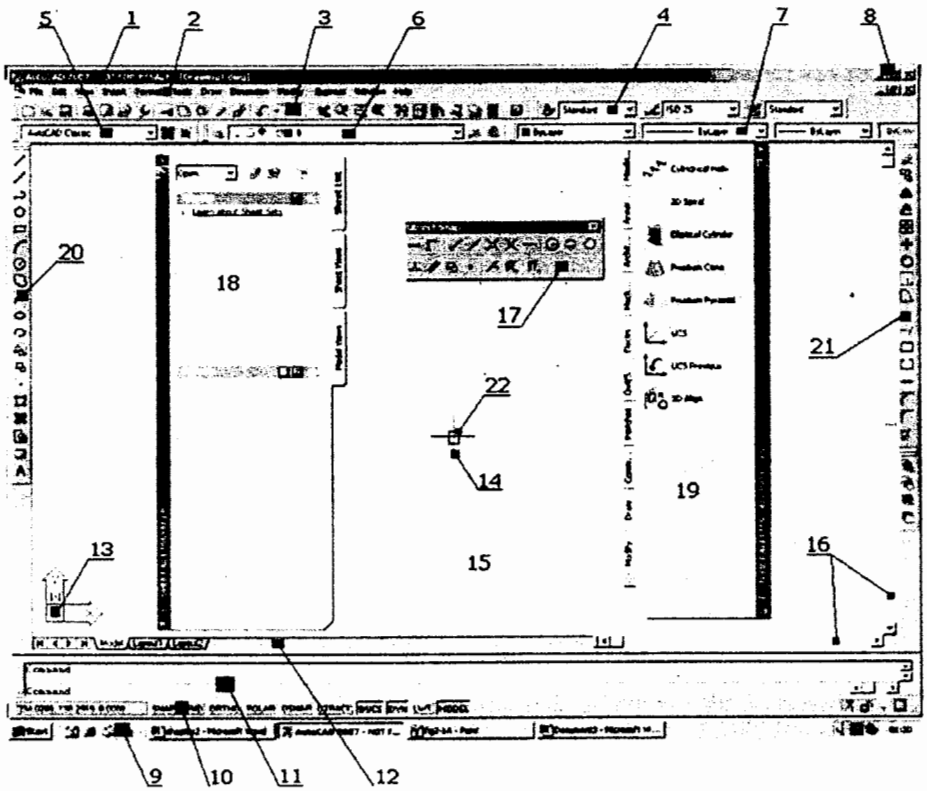


Figure 5 Workspace of an AutoCAD 2007 programme.

**QUESTION 1 a)** CANDIDATE NUMBER _____

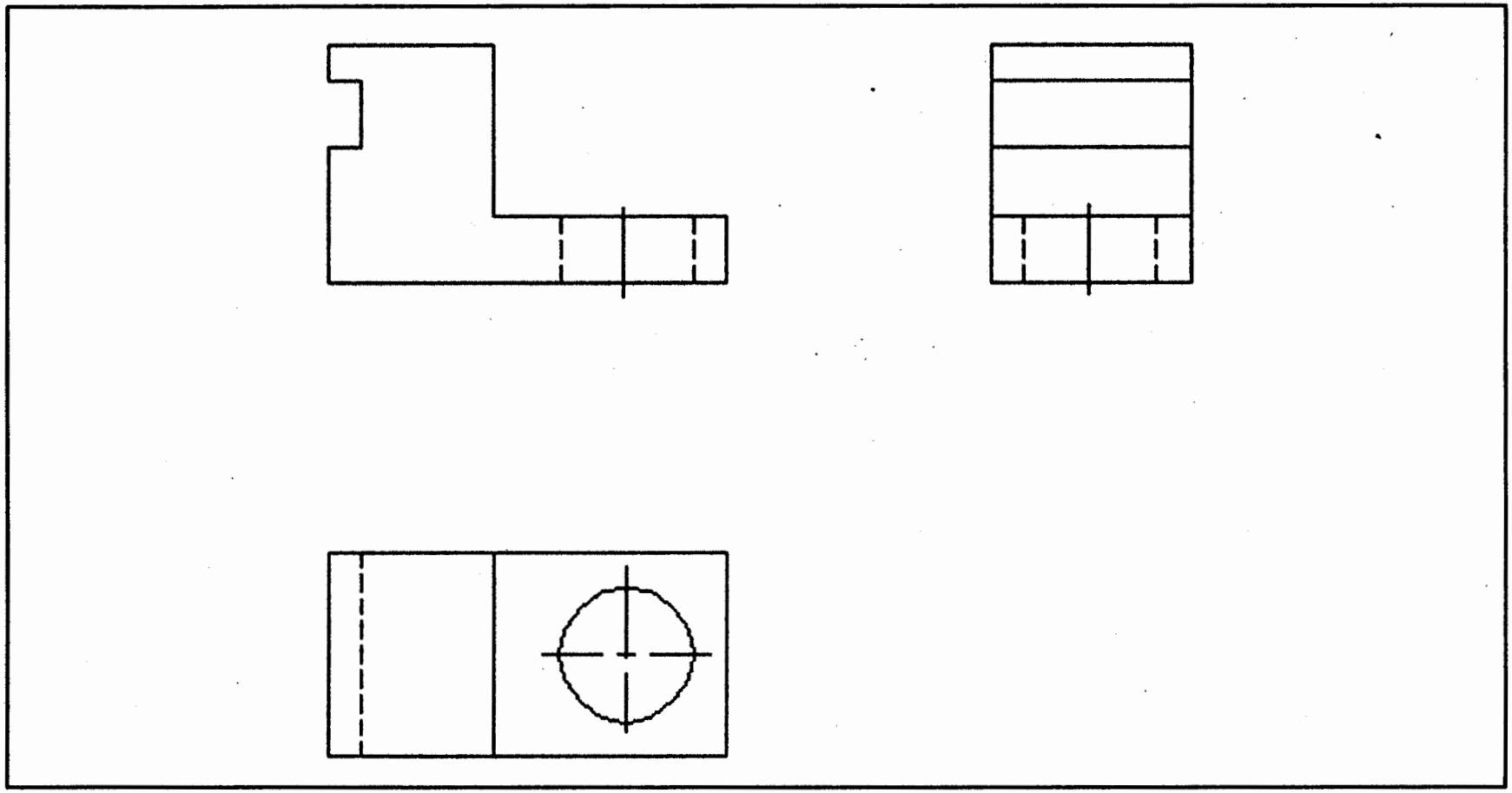

Figure 1b correctly dimensioned multi-view of a bracket

**QUESTION 1 c)** CANDIDATE NUMBER _____