

**THE MOMBASA POLYTECHNIC UNIVERSITY  
COLLEGE**

**FACULTY OF ENGINEERING &TEHNOLOGY**

**Department of Computer Science & Information  
Technology**

**BACHELOR OF TECHNOLOGY IN INFORMATION &  
COMMUNICATION**

**BTECH.ICT2K MAY 11(Yr1 Sem2)**

**First Year Semester Two Exam**

**Nov/Nov 2011**

**Computer Aided & Design & Art**

**CODE: BIT 2111**

**Time 2 Hours**

**Instructions**

**This paper contains 5 questions:**

**Answer Question ONE & any other TWO questions**

**QUESTION ONE [COMPULSORY, 30 MARKS]**

- a) Describe the top down development approach as used in cad design and development [4 marks]
- b) Differentiate between atomic data types and structured data types [4 marks]
- c) Describe any Five operations that can be done on an abstract data type [5 marks]
- d) Differentiate between that array based implementation and pointer based implementation of an abstract data type [8 marks]
- e) A stack is a popular data structure that is used by CAD programs. Briefly explain [9 marks]
  - i. Two real life applications of a stack:
  - ii. Common stack operations
  - iii. How An array can be used to implement a stack

**QUESTION TWO [20 marks]**

Fig 1 below shows the pictorial view of a wooden component.

- b) Draw a 3D model of the component [10 marks]
- c) Use four viewports to display the front elevation, end elevation and plan view [10 marks]

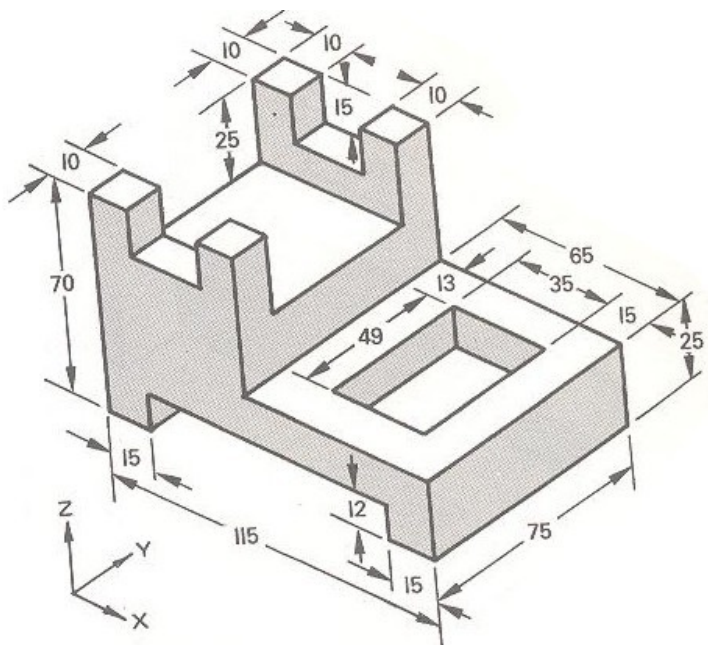


Figure1

**QUESTION THREE [20 marks]**

Figure 2 below shows the elevation of an adjustable sector.

- a) Draw the elevation using a scale of 1:1
- b) Show at least 5 dimensions

[15 marks]  
[5 marks]

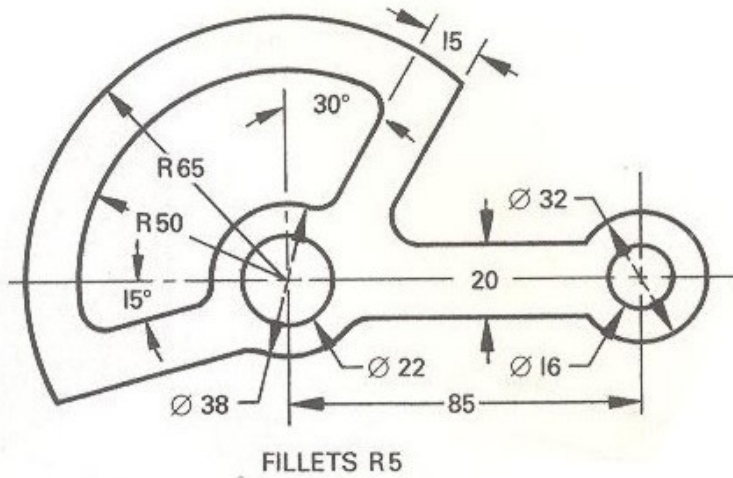


Figure 2

**QUESTION FOUR [20 marks]**

Figure 3 shows the elevation of a chisel.

Draw the elevation using a scale of 1:1

[14 marks]

Show all the dimensions

[6 marks]

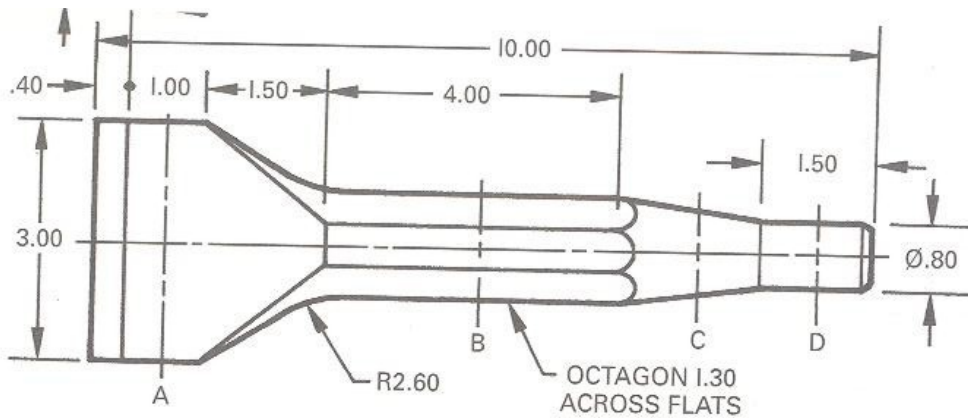


Figure 3

**QUESTION FIVE [20 marks]**

Figure 4 shows the pictorial view of a machine spindle.

- a) Model the component to a scale of 1:1
- b) Show all the dimensions

[14 marks]

[6 marks]

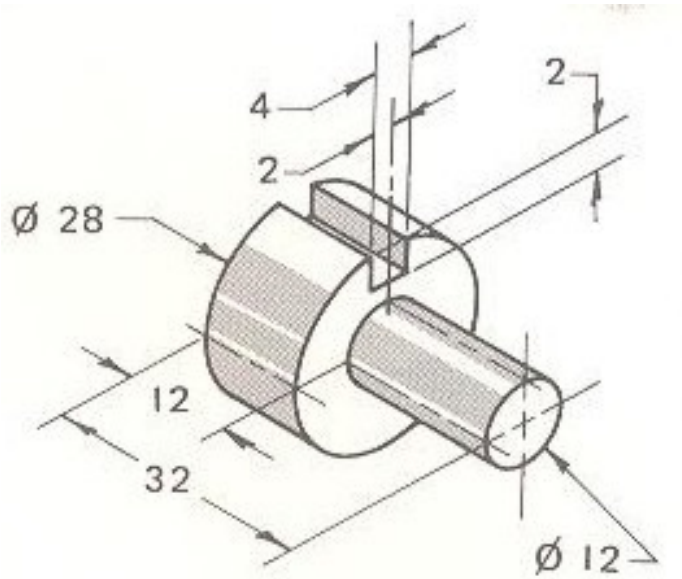


Figure 5