1. (a) Outline **four** components of an *Expert System*. (4 marks)

_____

_____

_____

_____

_____

(b) Paul an architectural engineer intends to draw a floor plan of a house. State how he would use each of the following CAD command:

(i) mirror; (2 marks)

_____

_____

_____

(ii) Explode. (2 marks)

_____

_____

_____

_____

(c) Define the term *Geographical information System*. (1 mark)

_____

_____

_____

(d) Figure 1 shows an object drawn in an isometric view. On the grid provided, sketch the *front*, *end* and the *plan* elevation in the *first angle orthographic* projection. Take the front elevation to be the view indicated by arrow labelled A. (6 marks)
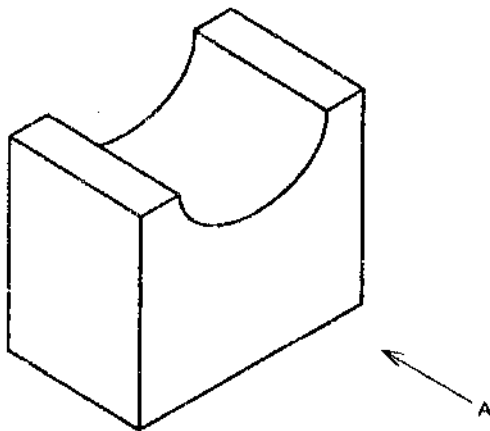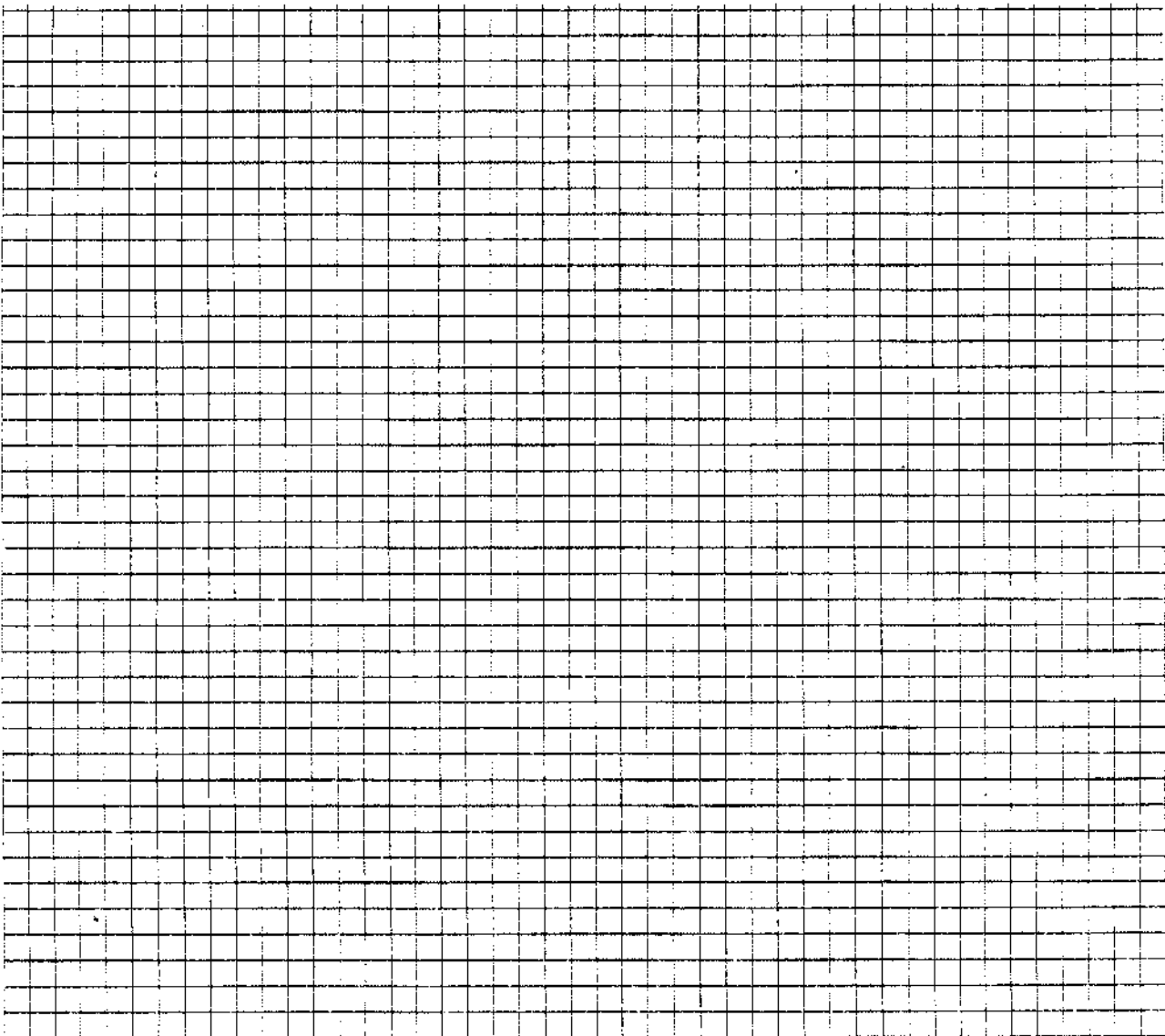

Figure 1

2

2.   (a)   (i)   Define the term *accounting*.   (1 mark)

        (ii)   Outline **four** objectives of accounting in an organization.   (4 marks)

(b) (i) With the aid of a diagram describe *spatial data layer* as used in GIS. (4 marks)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(ii) Outline **two** parameters that determine the position of a geographic object in a spatial space. (2 marks)

_____

_____

_____

_____

_____

_____

_____

(c) Tumaini Youth Group started their business on 1st May 2014. On the same day, they bought a van for Ksh. 450,000, bought a business stall for Ksh. 200,000 and purchased a stock worth Ksh. 1,500,000. They did not pay in full for the stock and still owe Ksh. 104,000. They had borrowed Ksh. 150,000 from BKB bank on the same day. After all these transaction, the company was left with Ksh. 40,000 cash in hand and Ksh. 11,000 cash at bank. Calculate the amount of capital for the group as at 1st May 2014. (4 marks)

_____

_____

_____

_____

3. (a) The management of Malimoto Manufacturing firm has decided to introduce an Expert System in its production plant. Explain **three** benefits that the firm would gain from this approach.   (6 marks)

_____

(b) Outline the function of each of the following commands as used in CAD program. (4 marks)

(i)

_____

(ii)

_____

(c) Figure 2 shows a geometry drawn using CAD program. Explain the role of *Offset command* in its construction. (2 marks)

Figure 2

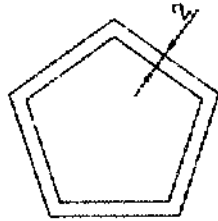_____

_____

_____

_____

_____

(d) With the aid of an example, distinguish between *fixed assets* and *current assets* as used in accounting. (3 marks)

_____

_____

_____

_____

_____

_____

4. (a) (i) Explain the term *bookkeeping* as used in accounting. (2 marks)

_____

_____

_____

_____

(ii) Describe the importance of computing the *net income* of a business. (2 marks)

_____

_____

_____

_____

_____

(b) Assume that a mobile phone dealer employs you as a bookkeeper. State how you will use each of the following accounting documents.

    (i)   Sales Invoice;   (2 marks)

    (ii)   A petty cash voucher.   (2 marks)

(c) Table 1 is an extract of transactions that took place at Malimato Electronics Company for the month of January 2013.

Date	Transactions
1 January 2013	Deposited Ksh. 7,200,000 into a bank account.
3 January 2013	Bought premises for Ksh. 3,840,000, paying by cheque
6 January 2013	Bought goods for Ksh. 720,000 from D Katoo on credit
10 January 2013	Sold goods worth Ksh. 272,000 to B Meta on credit
13 January 2013	Sold goods worth Ksh. 48,000 by cash
15 January 2013	Paid Ksh. 360,000 to D Katoo by cheque
31 January 2013	Received Ksh. 240,000 by cheque from B Meta by cheque

Table 1

Prepare the company's trial balance as at 31st January 2013.   (7 marks)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

5. (a) Outline the steps that would be followed when setting up an expert system.   (3 marks)

_____

_____

_____

_____

_____

_____

_____

(b) Explain each of the following views of a three dimensional models

 (i) parallel;   (2 marks)

_____

_____

 (ii) perspective.   (2 marks)

_____

_____

(c)   Outline **four** differences between *artificial intelligence* and *natural intelligence* in respect to their capabilities.   (8 marks)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

6.   (a)   State a circumstance where each of the following documents may be used by business

(i)   credit note;   (1 mark)

_____

_____

_____

_____

(ii)   debit note.   (1 mark)

_____

_____

_____

_____

(b)   Explain each of the following terms as used in artificial intelligent:

    (i).   fuzzy logic;   (2 marks)

_____

_____

_____

_____

_____

    (ii)   neural networks.   (2 marks)

_____

_____

_____

_____

(c)   Assume that you are a geospatial engineer. Explain how you would use GIS in the following areas:

    (i)   forest management;   (2 marks)

_____

_____

_____

_____

_____

    (ii)   mining.   (2 marks)

_____

_____

_____

_____

_____

_____

_____

_____

_____

(d) Figure 3 shows a dimensioned geometry. State the variation that can be done on the section of the dimension labelled (i) (ii), (iii), (iv) and (v) in a CAD program.   (5 marks)

Figure 3