

2920/202A
COMPUTER APPLICATIONS II (THEORY)
July 2017
Time: 2 hours



21 AUG 2017

THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
MODULE II
COMPUTER APPLICATIONS II (THEORY)
2 hours

INSTRUCTIONS TO CANDIDATES

*This paper consists of SIX questions.
Answer any FOUR questions in the answer booklet provided.
All questions carry equal marks.
Candidate should answer the questions in English.*

This paper consists of 5 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. (a) State a command that an architect would use to perform each of the following tasks in a CAD program:
- Separate the line segments of a square object;
 - Connect two straight edges with an arc that is tangent to the objects which has a specified radius;
 - Group selected lines as one entity;
 - Measure the distance between two points;
 - Draw a regular pentagon. (5 marks)
- (b) The government has been advised to install a virtual reality system for training her citizens on disaster preparedness.
- Outline **two** output devices that the system should have, giving an example in each case. (4 marks)
 - Outline **two** examples of software development tools, which could be used to develop the system. (2 marks)
- (c) Explain **two** disadvantages of *first in first out* pricing method of an inventory control system. (4 marks)

2.

- (a) Figure 1 shows a toolbar in a CAD program. Use it to answer the question that follows.

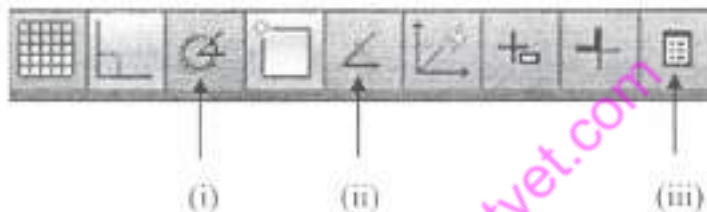
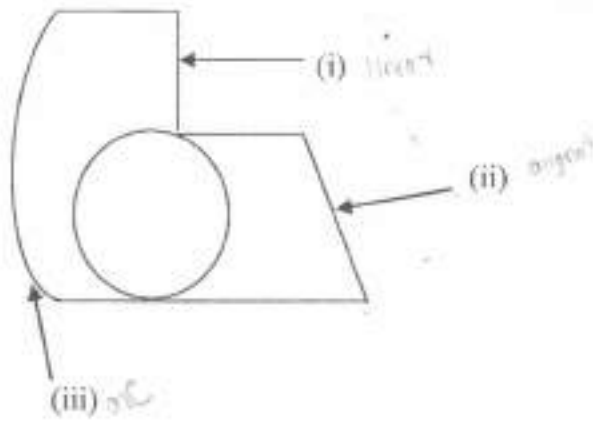


Figure 1

Explain the function of each of the tools labeled (i), (ii) and (iii). (6 marks)

- (b) Explain each of the following stages of knowledge engineering of an expert system:
- Knowledge acquisition;
 - Knowledge representation;
 - Knowledge validation. (6 marks)

- (c) Figure 2 is an object drawn using a CAD program. Use it to answer the question that follows.



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Figure 2

State the type of dimension that would be used on the segments labeled (i), (ii) and (iii). (3 marks)

3. (a) Outline **three** examples of each of the following components of a CAD system.
- (i) input devices; (6 marks)
 - (ii) output devices. (3 marks)
- (b) Paper maps may contain current or historic information of a location that may not be found in digital format. Explain **two** methods that could be used to digitize the information. (3 marks)
- (c) Heavy rainfall recently experienced in Kenya resulted in flooding along the riverbanks in various parts of the country. Explain **three** ways that the government could use GIS to manage the disaster. (6 marks)

4. (a) A business has the following balances in its books of accounts:
 Loan Kshs. 500,000; Land Kshs. 1,500,000; Cash Kshs 20,000; Owners equity Kshs. 900,000; Machinery Kshs. 80,000 and creditors.
 Determine the balance of creditors from the information provided. (3 marks)
- (b) Information Technology has made it convenient for bank customers to access services. Explain **three** ways that IT has made this possible. (6 marks)

Handwritten calculations for question 4(a):

$$1000 = 500,000 \quad * L$$

$$1000 = 1500,000 \quad A$$

$$Cash = 20,000 \quad A$$

$$Machinery = 80,000 \quad C$$

$$Total = 20,000 \quad A$$

$$500,000 + L = 700,000$$

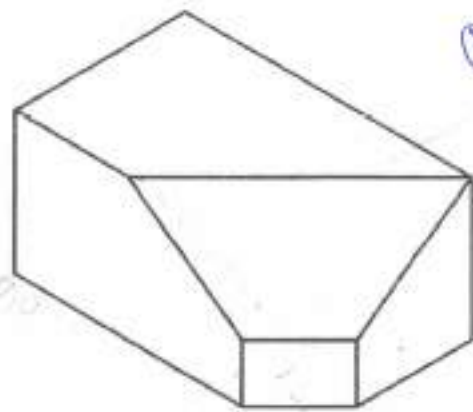
$$1500,000 + 20,000 + 80,000 = 900,000 + 500,000 + L$$

$$1600,000 = 1400,000 + L$$

$$L = 200,000$$

Turn over

- (c) Figure 3 shows an isometric view of an object. Use it to answer the question that follows.



ARC



Figure 3

Sketch the *plan*, *side* and *front* elevations of the object in 1st angle projection. (6 marks)

5. (a) Outline **six** properties that could be set on a line in a CAD program. (3 marks)
- (b) Explain **three** reasons for the increased use of robots in manufacturing plants. (6 marks)
- (c) Table 1 shows the usage of stock items A and B. use it to answer the questions that follows.

Usage	Stock A	Stock B
Ordering quantities	500 units	900 units
Delivery period	4 to 6 weeks	2 to 6 weeks
Maximum reorder period for emergency purchases	2 weeks	2 weeks
Minimum usage	40 units per week	40 units per week
Maximum usage	120 units per week	120 units per week
Normal usage	90 units per week	90 units per week

Table 1

Calculate the *Minimum stock level* for each stock item. (6 marks)

6. (a) Explain each of the following terms as used in expert systems:
- (i) forward chaining;
- (ii) priori knowledge. (4 marks)
- (b) Distinguish between *spatial* and *attribute* data as used in GIS, giving an example in each case. (5 marks)

Handwritten calculations for minimum stock level:
 $40 \times 2 = 80$
 $500 + 80 = 580$
 $900 + 80 = 980$

500

400

Handwritten calculations for GIS data types:
 500
 $180 - 2$
 $90 - 2$

(c) Explain each of the following terms as used in financial accounting, giving an example in each case:

- (i) personal account;
- (ii) real account;
- (iii) expense.

(6 marks)

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