

KASNEB

CICT PART I SECTION 1

INTRODUCTION TO COMPUTING

PILOT PAPER

September 2015.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

- (a) Explain the functions of the following devices as applied in information communication technology (ICT):
- (i) Bridge. (2 marks)
 - (ii) Gateways. (2 marks)
 - (iii) Routers. (2 marks)
- (b) List three reasons why a graphical user interface (GUI) is considered easier to use than a command driven interface. (3 marks)
- (c) For each of the two scenarios described below, explain the precautions that management should have taken to minimise damage to the business.
- (i) An accountant who is a sole practitioner kept all clients records on a desktop computer hard-drive. A burglar stole the desktop computer at night. (4 marks)
 - (ii) An insurance company uses a centralised client-server database that is accessed by all its nation-wide branches. All customers' records are stored on the database. There are no local copies in branches. The building that holds this database and all the equipment therein was destroyed by a natural disaster. (4 marks)
- (d) Suggest any three application areas in which you would expect a bank manager to use the internet. (3 marks)
- (Total: 20 marks)**

QUESTION TWO

- (a) The owner of a small business asks for your advice about installing a microcomputer with suitable packages.
- (i) Explain how he should choose a suitable printer. (3 marks)
 - (ii) Explain why he should sign a contract to cater for maintenance and repair for hardware and software. (3 marks)
- (b) Data capture involves collecting and transferring into a digital format data required for subsequent storage transmission and processing. The most common method is via the computer keyboard.
- Identify three other methods of data capture specifying the application area of each method. (6 marks)
- (c) Outline four tasks which are performed by utility programs. (8 marks)
- (Total: 20 marks)**

QUESTION THREE

- (a) Explain four positive impacts and four negative impacts of ICT in society. (8 marks)
- (b) All computers need an operating system.
- Identify five functions performed by an operating system. (5 marks)
- (c) Differentiate between "cold booting" and "warm booting". (4 marks)
- (d) Identify three qualities that makes a microcomputer a suitable device for personal use. (3 marks)
- (Total: 20 marks)**

QUESTION FOUR

- (a) Write the decimal number 4137 in four bit BCD. (2 marks)
 - (b) (i) Convert 5378 base 8 to hexadecimal. (3 marks)
 - (ii) Perform the following hexadecimal arithmetic:
ABCD + 145 (3 marks)
 - (c) List three advantages of batch processing. (3 marks)
 - (d) Explain the meaning of the following terms as used in computer files:
 - (i) Volatility. (2 marks)
 - (ii) Growth. (2 marks)
 - (iii) Hit rate. (2 marks)
 - (e) Identify three characteristics of first generation computers. (3 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) Identify five reasons behind the trends in many organisations to move from centralised computing to distributed processing. (5 marks)
- (b) Identify three advantages of digital transmission over analog transmission. (3 marks)
- (c) In a computer science class there are:

19 students studying C++.
14 students studying Java.
22 students studying Visual Basic.
10 students studying both Visual Basic and C++.
7 students studying both Visual Basic and Java.
8 students studying Java and C++.

Required:

- (i) Draw a venn diagram to represent the above information. (4 marks)
 - (ii) The number of students studying the three programming languages. (2 marks)
 - (iii) The number of students studying only C++. (2 marks)
- (d) With the aid of a diagram, describe:
- (i) A star network topology. (2 marks)
 - (ii) A ring network topology. (2 marks)
- (Total: 20 marks)**