

451/1
COMPUTER STUDIES
THEORY PAPER
JULY/AUGUST 2008

KERICHO/KIPKELION DISTRICTS MOCK EXAMINATION
Kenya Certificate of Secondary Education (KCSE) 2008

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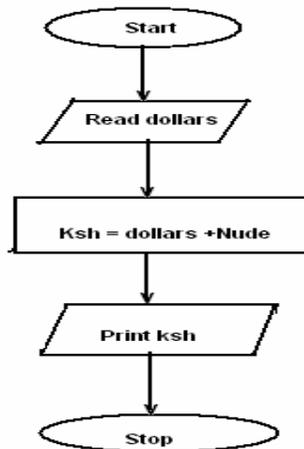
MARKING SCHEME

1. (a) It's data that is in continuous version (1mk)
(b) Signal that is in discrete version (1mk)
2. - Distributed processing facilities
- Cost effectiveness and reliability
- Resource sharing
- Remote communication
(1x3)=3mks)
3. Real data type has a fraction integer data type is a whole number (1mk)
4. - Provide power in case of power failure
- Regulates power from an unstable power source
- Prevents electrical surges
- Alerts the user when power goes off (each ½ mk)
5. (i) Protocol – set of rules that govern how two or more computers can send and receive data in a network (1mk)
(ii) Gateway – Any device that can be configured to provide access to wide area networks or Internet.
(ii) Bandwidth – Maximum amount of data that a transmission medium can carry at any one time (1mk)
6. – offers help to the user
- doesn't keep the user for long without explanation
- Meet all user's requirements
- Free from bugs (each ½ mks)
7. – Storing data base in criminal investigation center
- In government ministries
- Keeping town plans
- Banks
8. Input device
- Key board
- Card
- Document reader (each ½ mks)
Output devices
- Screen / monitor
- Printer
- Light emitting diode (LED)
- Voice output e.g. speaker (each ½ mks)
9. – Compiler translates the entire source program into object
- Interpreter translates the source program line –by-line allowing CPU to execute one line before translating the next (2mks)
10. – Easy to develop devices that can understand it than natural language
- Simplifies technology needed to develop both hardware and software
- Digital devices are reliable
- Digital devices are small in size
- They are less energy (any two of above 2 marks)
11. – Bachelor of science in computer Engineering
- Bachelor of science in Computer science

- Bachelor of ICT /system
 - Degree in software engineer
 - Degree in programming
12. - Training people how to use computers and various programs
- Advising learners the best career opportunities
 - Preparing learners for ICT examination
 - Developing training reference materials
 - Guide learners how to acquire knowledge through research. (4x1=4mks)
13. - Sorting – Arrangement of data in descending or ascending order. (2mks)
- Filtering is Hiding of column and in worksheet
14. (i) $ICD_{16} = 000111001101_2$
- (ii) $150_{10} = 10010110_2$ (2x2=4mks)
- 15.
- a) i) RISC – Reduces instruction set computer Type of microprocessor that recognizes limited number of instruction (1mk)
- ii) POST – Power – on self test
- The system used to check all components connected to computer weather they are function (1mk)
- b) – Cold booting occurs when computer originally is off and switched on by pressing the power button. (1mk)
- Warm booting happens when originally computer was on i.e. forced to restart by pressing the restart button, use of restart command or by pressing combination of keys on a keyboard. (1mk)

SECTION B 60 MARKS

16. Advantages
- Easy to be understood by the computer
 - Require little effort translate into computer under stable from. (2x1= 2mks)
- Disadvantages
- They are hand wave oriented
 - They are not portable (1x1=1mk)
- b) Flow chart



Each symbol (5x1=5mks)

Programs

Program conversion dollars into Ksh;

Constant & = 20 Ksh

VAR

Errors = (1mk)

Dollars: Real

Shillings: Real

Write in (conversion of dollars into Kshs)

Read in (Dollars)

Shillings = Dollars Const &

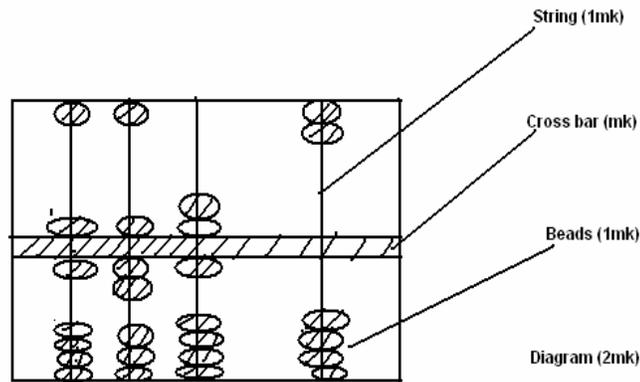
Write in (Kenyan shillings is; shillings);

END (Each step ½ mks)

17. – offers faster access and retrieval of data.
- Information takes up less space than manual filing
 - Enhances data integrity and reduces duplication
 - Easier to update and modify information (4x1=4mks)
- b) (i) Characters
- The smallest element in computer file can be a letter number or symbol
 - Made up of a set of seven or eight bits depending on character coding system used. (1x2 =2mks)
- (ii) Fields
- Single character or collection of character
 - Represent single piece of data e.g. in students records, students admission no is a field. (1x2=2mks)
- (iii) Records
- Collection of related fields
 - Represents single entity (1x2mks)
- c) i) Master file
- Main file contains permanent records of particular Items or entries (1x1=1mk)
- ii) Reference file
- Store relatively permanent records read from the master file or generate after processing. (1x1=1mk)
- iii) Backup file
- Used for holding copies of data or information. (1x1=1mk)
- d) Sequential file
- Records are stored and accessed in particular order sorted using a key field.
 - Retrieval requires searching through the entire file by record received from the start to the end. (1x1=1mk)
- Serial file
- Records are stored and accessed one after another.
 - Records are not sorted in any way on storage devices.
 - Mostly used in magnetic tapes(1x1 =1mark)
18. a) Condition in which a person becomes psychologically immersed in an artificial environment generated by a computer system (2 mks)
- b) Entertainment
- Simulation and assembly of sequences
 - Three dimensional objects or ideals
 - Training
 - Assistance to the handicapped. (1x5=5mks)
- c) – Difficult areas to be handle by human
- Avoid boredom to human in repetitive jobs
 - increase production
 - Dangerous areas to human
 - Satisfy their customer
- d) Head gear /Head mounted display
- Gloves
 - Body suite
 - Virtual reality software. (½ x4 =2mks)

e) Use of device that imitates human being in carrying out tasks that would be dangerous and difficult to human (1mk)

19.



Explanation

- String represent place values of numbers (1mk)
- Upper beads are two each representing five (1mk)
- Lower beads have five each representing unitary (1mk)
- Each string represented place value of number (1mk)
- Sliding of beads on a frame (1mk)

NB (Consider student's explanation)

b) Characteristics of 3rd generation

- Generated less heat compared to 2nd generation
- Consumed a lot of power compared to 2nd generation
- Used integrated circuit technology (1x5=5mks)

20.

- Data and information should be kept secure against loss or exposure.
- Data should not be transferred to other countries without the owner's permission.
- Data and information should not be kept longer than necessary.
- Data and information should be accurate and up to date.
- Data and information be collected used and kept for specified lawful purposes

b) i) Viruses

- Destructive programs that attaches itself to other files and installs itself without permission on the computer when files are opened (1x2=2mks)

ii) Unauthorized access

- Gaining access to data /information without permission (1x2=2mks)

iii) Computer error and accidental access

- Caused by people making mistakes like printing sensitive report an unsuspectingly giving then to unauthorized person's (1x2=2mks)

(iv) Theft

- Stealing of data and information to gain a fortune from it (1x2=2mks)

c) – checking mails

- compose message
- send mail
- Saving messages
- Printing mails
- Forwarded messages (1x2=2mks)