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**KENYA NATIONAL EXAMINATION COUNCIL**  
**REVISION MOCK EXAMS 2016**  
**TOP NATIONAL SCHOOLS**

**PRECIOUS BLOOD SCHOOL**  
**COMPUTER STUDIES**  
**PAPER 1**  
**MARKING SCHEME**

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## **PRECIOUS BLOOD SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016**

### **COMPUTER**

### **451/1 PAPER 1**

### **MARKING SCHEME**

1. a) Multiplexing - It is the process of sending multiple data signal over the same medium. ( Give mark if diagram exist.)  
b) Baseband signal - It is a digital signal that is generated and applied to the transmission medium directly without modulation. ( 2mks.)
2. a) Analog signal is made up of continuous varying waveform while digital signal is made up of non continuous discrete waveform.
3. a) - Boot sector viruses  
- File virus  
- Hoax virus  
- Trojan virus  
- Worms  
- Backdoors ( Any 4: @ ½ mk Total = 2 mks.)
4. i) Partitioning - Creating volumes by subdividing a large physical disk.  
- Refers to the process of deviating a large physical disk into two or more partitions called logical drives.  
ii) Defragmenting – Consolidating fragments files into one area if the disk or so that file occupies a single, contiguous space on the above.
5. i) Sign in/ Log in- when you want to access a website, type the full address of the website in the address box.  
ii) Surf in/ Log in – The process of accessing the website.  
iii) Downloading- The process of transferring information from a remote computer to a local storage.
6. To access records of books faster.  
For faster updating of books records.  
To search title of books for someone to borrow.  
For research if there is connection to the internet. Any three @ 1mk: Total = 3mks
7. Simulation refers to the science of representing the behavior of real – life situation by using computerized models, while virtual reality refers to a condition in which a person becomes psychologically immersed in an artificial environment generated by a computer system.  
( Award 1 x 2 = 2mks.
8. Convert  $11011011111.1111_2$  to:  
i) Octal (2mks)  

Group the bits in the threes  
011 011 011 111  
3 3 3 7 -1mks
9. a) Logical access is the ability to interact with data and software in the computer through access control procedures such as identification, authentication and authorization while physical access refers to the ability of people to physically gain access to a computer system of computer room.  
Award 2 x1 = 2mks  
b) **Logical access:**  
Use of passwords for computer systems and files / folders.  
Use of audit trail and access logs.  
Use of data encryption.  
Use of firewalls.  

***Any one mark@1mk***

**Physical access control:**

Burglar proofing

Setting up security guards to guard computer room.

Installing surveillance cameras.

( 2mks)

10. Give two possible ways of fitting the document in in one page:

- Reduce the line spacing.
- Adjust the left and right margins.
- Reduce the font size.

( 2mks)

11. Real time – data is received and processed so fast and the results returned so quickly that the process is instantaneous to the user.

Batch – data is accumulated and processed at a predetermined time. Once processing begins no amendments.

12. It's faster, accurate and efficient in accomplishing task.

- It offers larger virtual sheet for data entry and manipulation.
- Electronic spreadsheets have better documents formatting capabilities.
- It has in built formulae ( functions) that enables the user to manipulate mathematical data quickly.
- Automatically adjusts the results the results of a formula if the values of worksheet are changed.
- It enables the user to produce neat work.
- It utilizes large storage space on computer storage devices to save and retrieve documents.

13. It performs the following actions on message:

- Receive
- Stores
- Display
- Reply
- Compose new. Any 4 @ ½ mk Total = 2mks.

14. Provides the learner with clear illustration about a certain concept or skill.

Safer for illustration of dangerous experiments.

Cuts down the cost of performing dangerous experiments or training.

15. Power failure – Under voltage or voltage in a computer computer viruses and worms – unwanted programs written to cause damage to programs and data.

**SECTIONS B**

**Answer questions 16 and any other three questions in this section.**

Start

Start/stop – ½ mk

Total pay = 0

Total discount = 0 } ✓ 1mk

Tenant = 1

Rent = 2500

While tenant <= 10 DO ✓ 1mk

Enter months of pay.

If months > 6 Then ✓ 1mk

Discount = 5% of rent x months

Discount = rent x Months – Discount } ✓ 1 mk

ELSE

Discount = 0

Payment = Rent x Months } ✓ 1mk

END IF

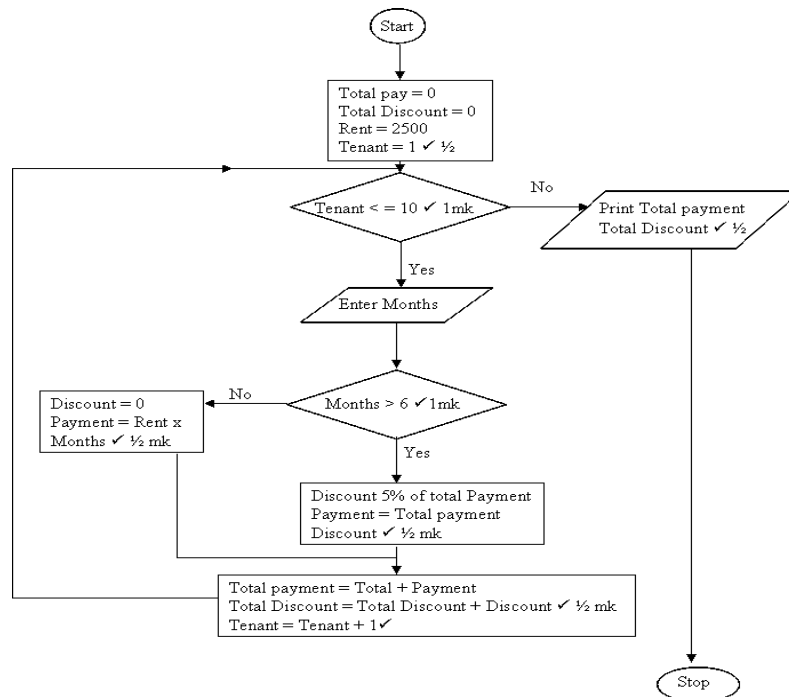
Total pay = Total pay + payment

Total Discount = Total discount + Discount Tenant = Tenant + 1 ✓ 1mk  
 END WHILE  
 Print Total pay. } ✓ ½  
 Print Total Discount }  
 STOP

Total = 7mks

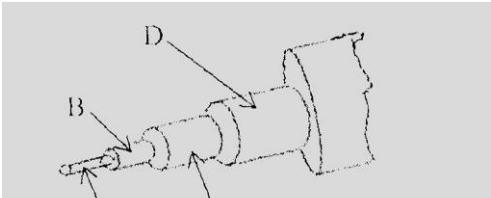
b)

Total = 7 mks



Start/Stop – ½ mk

- c) i) The computer processes the incoming data as soon as it occurs, updates the translation files and gives the immediate response that would effect the even assist happens.
- The main purpose of a real – time processing is to provide accurate up – to – date information hence better services based on a true (real) situation eg. Making reservation for airline seats ie. Booking through remote terminal the information is given immediately by the reservation.
- ii) Refers to dividing processing tasks to two or more computers that are located on physically separate sites but connected by data transmission media. The distributes of processing eg. In banking industry where customers accounts are opened on servers in the branches but all the branch accounts can be administered centrally from the main server as if they reside on it.
17. a) Refers to the accuracy and completeness of data entered in computer or received from information system.
- b)
- Back up, especially on external storage media.
  - Control access to data be enforcing securing measures.
  - Design user interfaces that minimize chances if invalid data entry.
  - Using error detection and correct software when transmitting data.
  - Using devices that directly capture data from the sources such as for code reader,
  - digital cameras optional character readers etc.
- c) i) The computer process the incoming data as soon as it occurs, updates the translation.

- The main purpose of a real – time processing is to provide accurate up – to – date information hence better services based on a true ( real) situation eg. Making reservation for airline seats ie. Booking through remote terminal the information is given immediately by the reservations.
  - ii) Refers to dividing processing task to tasks to two or more computers that are located on physically separate sites but connected by data transmission media. The distributes of processing increases efficiency and the speed of processing e.g in banking industry where customers accounts are operated on services in the branches but all branch account can be administers centrally from the main server as if they reside on it.
  - d) Input - Hardware  
Processing – Software  
Memory – data / information  
Output – procedures  
Storage – communication.  
Communication.
  - e)
    - Input
    - Processing
    - Memory
    - output
    - storage
    - Communication
18. a) i) Coaxial cable  
ii) A – Copper core  
B – Core insulation  
C – Aluminium foil.  
D – Braided shielding
- 
- iii) - Has large band width – can carry voice data and voice simultaneously.
  - b) i) - UPS – a device that protects the computer from being damaged due to power instabilities
  - ii) - It regulates power from unstable power source to the required stable voltage by eliminating surges and brownouts.
  - It temporary provides power to the computer incase of sudden power failure hence allowing the user to store / save his work and shut down the computer
  - c) i) Enables reception of output even when a few meters away from the computer.
    - Enables reception of output even when a few meters away from the computer
    - Make computing interesting and entertaining.
  - ii) - Write once read many ( WORM)
  - Decorded once but can be accessed many times without changing content.
19. a) Effects of ICT (information and Communication technology)
- Job creation - it has introduced new job opportunities
  - Job displacement – employee is moved to another place or department where computer skills are not required.
  - Job replacement – computer illiterate people have been replaced with those who have the desired computer skills.
  - ii) Repetitive strain injury -(RSI) – They are injuries resulting from wrist, hand, arm and muscle strain tendons and neck stain due force force repetitive movements e.g entering data using keyboard.

- b)
    - i) Artificial neural is the use of electronic devices and software to stimulate the neurological structure of human brain. The idea is to try and emulate the cognitive learning process of the human brain and how it recognizes patterns. Human brain works by receiving signals from special sensory cells called neurons. When neurons receive information. They exit the cell to send a signal to the brain or not.
    - ii) The neurodes can be trained to distinguish between what constitutes a signal and what does not.
      - They are capable of recognizing patterns in large amount of data that are too complex for human brain. Therefore they can make predications and font abnomalities.
    - c)
      - i) Holistic thinking: It's a characteristic of a system where a system is considered as a whole. The various components that make up a system may be simple in nature and sophisticated than those of individual components.
      - ii) A system Entropy:- Its decay of the systems. systems decay naturally overtime i.e a system management polices or change policies or change in user requirements.
- 20.
  - a)
    - i) A system analyst is mostly responsible for analyzing the weakness of the system based on the system requirements.
    - ii) Computer repair and maintenance
  - b) Cost
    - Job opportunities.
    - Whether the examination offered are recognized.
  - c) Need to be onsite consumers a lot of time.
 

The person to be observed might alter behavior leading to wrong requirements being observed confidence in the new system then the old system is phased out.
  - d)
    - i) Froth old and the new system are run parallel to each other for sometimes until users have confidence in the new system then the old system is phased out.
    - ii) A new system is implemented in phases or stages e.g education system is changed from old to the new curriculum. Sometimes one phase may run a new system for fasting before it is implemented into all the other phases.
  - e)
    - i) Firewalls: It is a device or software that filters the data and information exchanged between different networks by enforcing the host network access control policy. 1 mk.
    - ii) Data encryptions: - Data on transit over a network faces danger of being tapped. Listened to or copied to unauthorized destinations, such data can be protected by mixing it into a form that only the sender and receiver can be able to understand by reconstructing the original message from mix.
    - iii) Substances:- This is illegal destruction of data and information with an aim of erupting services delivery or causing great loses to an organization.