
KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

BAHATI GIRLS HIGH SCHOOL
COMPUTER STUDIES
PAPER 1
MARKING SCHEME

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BAHATI GIRLS HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

COMPUTER STUDIES

451/1 / PAPER 1

MARKING SCHEME

1. Factors that you would consider before replacing or upgrading a computer memory (3 marks)
 - i) Memory capacity
 - ii) Type of memory package
 - iii) Compatibility with other installed modules
 - iv) Whether there is an empty slot
2. Characteristics of a well designed and developed software. (3 marks)
 - i) They can be easily installed and run
 - ii) Cheaper
 - iii) Modified
 - iv) Meet user' s needs
 - v) Readily available in the market
3. Two web programming languages. (2marks)
 - i) Hyper text Markup Languages
 - ii) Java Script
 - iii) VB Script
 - iv) Hypertext preprocessor
4. Three parts of a task bar. (3 marks)
 - i) Start button
 - ii) Task manager
 - iii) System Tray
5.
 - i) (l) Base band — It is a digital generated and applied to the transmission medium directlywithout modulation. (1 mark)
 - ii) Broad band -refers to sending analog signal over transmission medium using a particular frequency. (1 mark)
6. (a) Define the term artificial intelligence (1 mark)

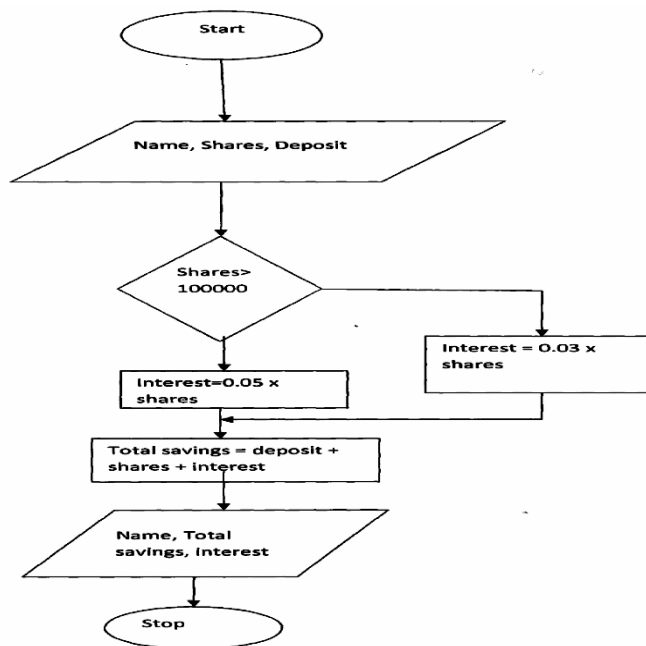
Artificial intelligence can be defined as a branch of a computer science that is concerned with the development of machines that emulate human like qualities such as learning, reasoning, seeing and hearing.

(b) List four areas where artificial intelligence is applicable. (2 marks)

 - (i) Expert system
 - (ii) Natural language processing
 - (iii) Artificial Neural networks
 - (iv) Robotics /Perception system
7. State three ways of moving round the page in a desktop publishing window (3 marks)
 - (i) Using the hard tool
 - (ii) Using the scroll bars
 - (iii) Using the zoom tool
8. Differentiate between the following
 - (i) Insert mode — when text is inserted between words or characters it pushes the existing text away without replacing it while in type over mode when the text is

typed between existing words or characters ,the new text automatically replaces the existing text by deleting it.

9. Ways in which horticultural farmers can benefit from the use of information and communication technology. (2 marks)
- i) They can advertise their products
 - ii) They can sell their products online
 - iii) Communication
10. Mouse clicking techniques (3 marks).
- i) Double clicking
 - ii) Right clicking
 - iii) Drag and drop
11. State two disadvantages of networking. (2 marks)
- i) Security issues
 - ii) High initial cost
 - iii) Moral and cultural effects
12. a) sum (B2:B5)
- b) least expenditure. (1 mark)
= minimum(B2:B5)
- c) Distinguish between filtering and sorting (1 mark)
Sorting refers to arranging the data in a worksheet in a particular order while filtering is a quick and efficient method of finding and working with a subset of data in a list.
13. Differentiate between bound and unbound control (2 marks)
A bound control is one whose source of data is a field in a table or query while unbound is a control that is not connected to any data source.
14. Identify the most appropriate data types for these fields (4 marks)
- (i) Name Text
 - (ii) Admission Number Number
 - (iii) Fees currency
 - (iv) Date Date / Time
15. What is program documentation (1 mark)
Program documentation is the writing of the formal support materials explaining how the program was developed.
16. a) Using a pseudocode
START
PRINT "Enter member name, share and deposit"
INPUT Name, Shares, Deposit



If shares > 100000 THEN
 Interest = 0.05 x shares
 ELSE
 Interest = 0.03 x shares
 ENDIF
 Total savings = Deposit + Shares + Interest
 PRINT Name, Total Saving, Interest
 STOP

b) Using a flowchart

17. (a) Four activities that are carried out during the system implementation phase (4 marks)

- (i) Training of the staff to use the system.
- (ii) System changeover ie from the old system to the new system.
- (iii) File creation and file conversion to be used in the support of the new system.
- (iv) Installation of the new system.

(b) Three reasons why system maintenance phase is necessary in SDLC (3 marks)

- (i) To ensure that the system is operating correctly
 - (ii) To adapt the system to meet the changing requirements of the end user.
 - (iii) To update the system in response to the changing's of organization.
 - (iv) To resolve any malfunction in the system.
 - (c) State two instances where observation is not viable method of gathering information during system analysis stage (2 marks)
 - (i) When the analyst wants to collect confidential information.
 - (ii) When there is a large group of people involved in the system.
 - (iii) When the people you want to gather information from are vastly dispersed.
 - (d) Various considerations should be made during input design and output design. State three considerations for each case (6 marks)
 - (i) Input design
 - The type of data needed to be input.
 - The volume and frequency of data capture.
 - The mode and devices of input.
 - Layout and sequence of input.
 - (ii) Output design.
 - The target audience
 - Frequency and report generation.
 - Quality and format of information.
18. (a) Explain what is meant by job scheduling. (2 marks)
- The scheduler decides which of the jobs is to be allocated to the CPU for processing.
 - Allocating CPU time to jobs.
 - Sequencing of jobs in a queue.
- (b) List and explain three types of user interfaces. (6 marks)
- (i) Command prompt/line interface is a form of interface between the operating system and the user in which the user types commands by using a special command language.
 - (ii) Menu driven interface operating system is a program that uses menus to present / list choices of commands and available options.
 - (iii) GUI operating system display format to enable the user to choose commands, start programs and see lists of files and other options by pointing to pictorial representations (icons, WIMPS)
- (c) Firmware are -language translators resident in ROM and is used for immediate access by the user of the system. (2 marks)
- Software on ROM or embedded permanently or semi - permanently.
 - Software buried on a microchip.
- ii) Proprietary software is privately owned software and Can only be used under conditions. Needs a licence to be used.
- d) Three computer hardware specification features to consider as a measure of enhancing performance. (3 marks)
- High processor speed
 - High primary memory capacity
 - High / enough secondary memory capacity.
 - High resolution output devices
 - Data bus band width.
19. (a) Convert the decimal number 0.5625 into its binary equivalent. (5 marks)
- Solution
- Fractional part
- $$0.5625 \times 2 = 1.125$$
- $$0.125 \times 2 = 0.250$$

$$0.250 \times 2 = 0.500$$

$$0.500 \times 1 = 1.000$$

$$= 0.1001_2$$

(b) Find the sum of

00110_2

+

01101_2

10011

| | | | | | |
|------------------------|---|---|---|---|---|
| 1 st number | 0 | 0 | 1 | 1 | 0 |
| 2 nd digit | 0 | 1 | 1 | 0 | 1 |
| Carry digit | 0 | 1 | 1 | - | - |
| Sum | 1 | 0 | 0 | 1 | 1 |

(c) Using the ones complement, calculate $31_{10} - 17_{10}$ in binary form.

(5 marks)

| | | |
|---|----|----|
| 2 | 17 | |
| 2 | 8 | R1 |
| 2 | 4 | R0 |
| 2 | 2 | R0 |
| 2 | 1 | R0 |
| | | R1 |

17 in binary 000100012

1's complement 111011110

| | | |
|---|----|----|
| 2 | 31 | |
| 2 | 15 | R1 |
| 2 | 7 | R1 |
| 2 | 3 | R1 |
| 2 | 1 | R1 |
| | | R1 |

$$= 00011111_2$$

$$00011111 + 111011110 = (1) 0001101 + 1 = 0001110_2 \text{ OR } 1110_2$$

20. (a) The term network topology refers to the way in which computers and other devices have been arranged or how data is passed from one computer to another in the network.

(2 marks)

(b) Ring topology Advantages (2 marks)

i) They use a short length cable

ii) Ring is simple to install

Disadvantages (2 marks)

i) Modification may be difficult

ii) Trouble shooting can be difficult

iii) One device or media breakdown may affect the entire network.

(c) Five components of the fibre optic cable. (5 marks)

(i) Core

(ii) Cladding

(iii) Buffer

- (iv) Strength member
- (v) Jacket
- (d) Other than the ring topology name other 4 types of topologies. (4 marks)
 - (i) Bus topology
 - (ii) Star topology
 - (iii) Mesh topology
 - (iv) Tree / hierarchial topology