

**JOINT INTER-SCHOOLS EVALUATION TEST (JISSET)
MARKING SCHEME**

SECTION A (40MKS)

1. State four different parts that make up a computer. (2mks)
✓System unit
✓Monitor
✓Keyboard
✓Mouse
✓Printer
✓Speaker • ½mk for any correct answer
2. Briefly explain the emerging trends in micro computer technology in relation to size (1mk)
✓PC's are becoming smaller and portable e.g. personal digital assistant (PDA)
3. (a) What is meant by the term greyware? (1mk)
✓The professionals who develop computer programs (programmers and computer engineers)
- b) State two ways of acquiring software. (1mk)
✓Off the shelves
✓In house ½mk for each
4. a) Distinguish between impact and non impact printers (2mks)
✓Impact printers -print using striking mechanism.
-slower and noise.
-produce multiple copies
-cheaper technology ½mark for each
- ✓Non impact printers -use ink, thermal or laser mechanism
-faster and quiet
-costly technology ½ mark for each
- b) MICR and OMR (2mks)
MICR✓
Recognizes characters formed from magnetic ink.
OMR✓.
✓Is system of reading marks or lines which have been marked in exactly right position on a card or document? 1mk each
5. Describe the following terms
- (a) website
✓A group of related web pages or other resources located on a web server.
1mk for correct description
- (b) Blog. (1mk)
✓Website that contains personal information that can be updated easily
1mk for a correct answer
- (c) Hyper links (1mk)
✓Links used to navigate from one page to another 1mk for correct answer
- d) Web portal (1mk)

- ✓Offers specialized services such as email, searching, sports update, financial use and links to selected website.
1mk for a correct answer
6. List four stages of data collection (2mks)
- ✓Data creation
 - ✓Data preparation
 - ✓Data transmission
 - ✓Data conversion
 - ✓Input validation
 - ✓Sorting
- ½mk for a correct answer
7. Explain the role of the following ICT specialist (2mks)
- a) Computer technician.
- ✓Trouble shooting computer software / hardware related problem
 - ✓Assembling and upgrading computer components
 - ✓Servicing and maintaining of all computer related accessories
- 2mks for any two correct answers
- b) Information system manager (2mks)
- ✓Ensuring that all tasks in the ICT department are done correctly.
 - ✓Preparing budgets for the department
 - ✓Keeping department inventory record up to date
 - ✓Managing the human resource within the department
- 2mks for any two correct answers
8. Distinguish between defragmentation of a disk and disk partitioning with reference to operation systems (2mks)
- Defragmentation
- ✓Process of moving all the parts of files into continuous clusters to speed up access
- 1mk
- Partitioning
- ✓Process of dividing a large physical into two or more partition called logical drives 1mk
9. a) Give four advantages of a DTP over a word processor (2mks)
- ✓Items can be edited and formatted independently
 - ✓Stories can be contained in a single frame or threaded in several frames
 - ✓Frames need not to flow in logical sequence
 - ✓Master pages are not used to set the common layout which may repeated on several pages e.g. Logo, page numbers.
 - ✓Supports a wide range of templates.
 - ✓Publications can printed in commercial suitable form
- 2mks for the correct four
- b) Differentiate between the following:
- (i) Kerning and tracking (2mks)
- ✓Kerning refers to fixing particular pairs of letters that are too close or too far apart from each other (1mk)
 - ✓Tracking refers to changing visual denseness or openness of characters in a line 1mk
- (ii) Margins and column guides (2mks)
- ✓Margins marks text areas on the page along the edges 1mk
 - ✓Column guides divide the pages into several fields, used to define the printable areas 1mk
10. Headache, back and neck pain may result from the use of computers. State how each of them can be minimized. (2mks) **Headache**
- ✓Use of anti glare screens
 - ✓Need for short breaks from the computer

Back and neck pain

- ✓Use of standard furniture
 - ✓Proper adjustment of the screen
 - ✓Seat to have upright backrest and should be high enough to enable eyes of the user to be level with the top of screen ½mk for every correct answer
11. Explain the meaning of the following terms as used in computer programming (2mks)
- (i) Syntax (1mk)
- ✓Rules that govern the arrangement of commands in a particular language of programming
- (ii) Semantics (1mk)
- ✓Meaning attached to every command in a particular programming language.
12. a) State two methods /tools a system analyst uses (2mks)
- ✓System flowchart
 - ✓Data flow diagrams
 - ✓Entity relationship models
 - ✓Structured charts 2mks
- b) Give two reasons why maintenance phase in system development cycle is necessary. (2mks)
- ✓Allows adjustments and enhancement to the system.
 - ✓Allows for correction errors
 - ✓Enhances reliability of systems 2mks for any two
13. Explain the functions of the following network devices (2mks)
- Bridge 1mk
- ✓A network device that selectively determines the appropriate network segment for which a message is meant to be delivered
- Gateway 1mk
- ✓Provides access to wide area networks and internet
14. Differentiate between baseband and broadband signal in networking. (2mks)
- Baseband signal 1mk
- ✓Is a digital signal generated and applied to the transmission medium directly without modulation
- Broadband (1mk)
- ✓An analogue signal send over transmission medium using a particular frequency i.e. several data signals can simultaneously be sent through the same medium at different frequencies
15. Identify two areas where computers are used today (1mk)
- ✓Financial systems
 - ✓Education systems
 - ✓Scientific research
 - ✓Entertainment system
 - ✓Transport system .etc

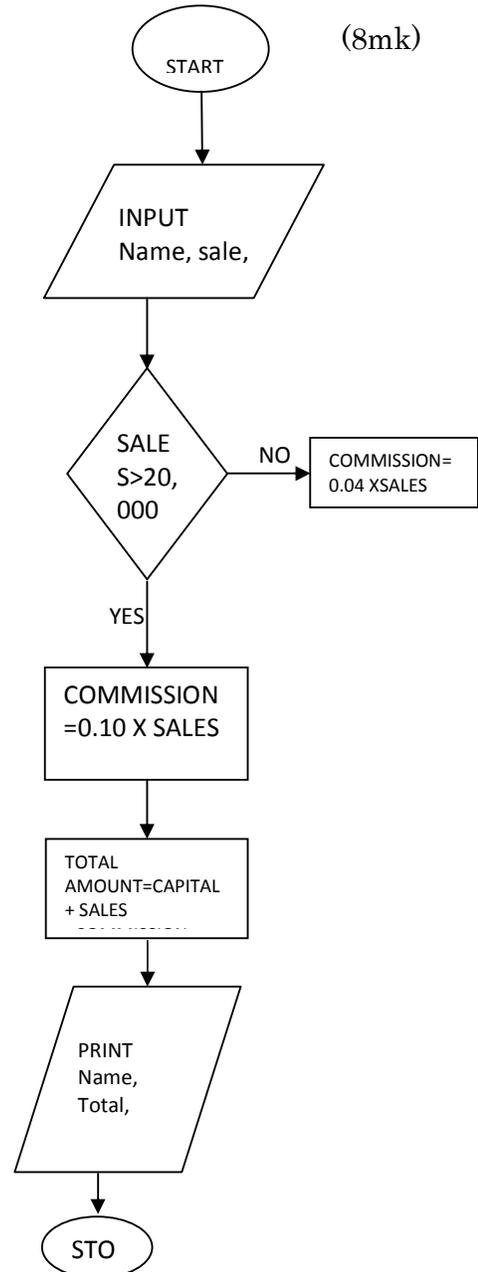
½mk for each answer

SECTION B (60MKS)

16. Khetia supermarket pays 10% commission on sales that are above ksh 20,000, and 4% on any sales that are less than this target. However, no commission is paid on the capital of the salesman.
- (a) Design a pseudo code for a program that would: (7mks)
- (i) Prompt a user for sale and capital of a particular salesman
 - (ii) Calculate the commission and total amount.
 - (iii) Display the commission and total amount on the screen for a particular salesman.

✓START
 ✓PRINT "Enter salesman Name, sale and capital"
 ✓INPUT Name, sales and capital
 ✓IF capital >20,000 THEN commission=0.10 *sales
 ✓ELSE commission = 0.04 *sales
 ✓END IF
 Total Amount= capital+ sales + commission
 PRINT Name, Total amount, commission
 ✓STOP

b) Draw a flow chart for the above pseudo code



17. a) What is the hexadecimal equivalent of 767_8

✓Step1 convert 767_8 to decimal

✓ $7 \times 8^2 + 6 \times 8^1 + 7 \times 8^0$

✓ $448 + 48 + 7 = 503_{10}$

Step2

Convert 503_{10} to hexadecimal

16	503	Rem
16	31	7
16	1	15
	1	1

$767_8 = 1F7_{16}$

Correct method/ step and answer give a mark

b) Use one's complement to solve the following sum: -5_{10}

(2mks)

2	5	Rem
2	2	1
2	1	0
	1	1

$$-5_{10} = 101_2$$

c) State two reasons for using binary in digital technology.

- ✓It is easier to develop devices that understand binary language
- ✓Devices designed using binary logic are simple
- ✓Digital devices are more reliable and consume less energy.

1mark for any two
(2mks)

d) Explain the role of a modem in data communication

✓A modem converts (modulates) data signal from digital to analogue to be transmitted over the telephone line. At the destination (receiving end) the modem attached to receiving computer converts (demodulate) the analogue signal back to the original digital form

e) Describe each of following computer terminologies as used in data representation. (4mks)

(i) Word

- ✓Total number of bits that a single register of a particular machine can hold

(ii) Bit

- ✓The smallest binary unit of either a '0' or '1'.

(iii) Byte

- ✓A group / collection of 8 bit used to represent a character.

Nibble

- ✓A group of four binary digital usually representing a numeric value.

1mark for correct description

f) Convert 7.125_{10} to binary

2	7	Rem
2	3	1
2	1	1
	1	1

$$\begin{array}{r}
 111_2 \quad .125 \times 2 = .250 \quad 0 \\
 \quad .250 \times 2 = .500 \quad 0 \\
 \quad .500 \times 2 = 1.000 \quad 1 \\
 \hline
 = 111.001_2
 \end{array}$$

18. (i) Name four data types used in spreadsheets

(2mks)

- ✓Formulae
 - ✓Functions
 - ✓Values
 - ✓Labels
- ½mk each correct answer

(ii) Outline five advantages of an electronic spreadsheet over the traditional ledger (5mks)

- ✓Can easily be modified, while manual spreadsheet is difficult to amend.
- ✓Has better document formatting and editing features than traditional ledger
- ✓Has inbuilt document functions that are non existent in a traditional ledger
- ✓Utilizes the large storage space available on computer storage devices to save documents
- ✓Offers graphical representation of data leading to comprehensive decisions.
- ✓Enables the user to produce neat work
- ✓Has large worksheet for data entry & manipulation

1mk for each correct

(iii) What is a chart wizard in spreadsheets?

(1mk)

- ✓Is a step by step procedure of designing a spreadsheet charts?

(iv) Name and explain the use of the following buttons found in spell-check dialog in reference to word processing (6mks)

- (a) Change
 ✓ Accepts the current selection in the suggestion box
- (b) Ignore once
 ✓ Leaves the highlighted error unchanged (if the highlighted word is valid word) it finds the next spelling / grammar error
- (c) Add
 ✓ Adds the highlighted word in the suggestion box to the custom dictionary (2mks for each explanation)
- (v) What is a template in word processing?
 ✓ A document that act as a blueprint for other documents of the same type. It contains the standard text, graphics and formatting for use in all documents of this type
19. (i) Describe three ways in computers have positively impacted on education (3mks)
 ✓ Enabled distance learning hence education is made available to the mass
 ✓ Standardized learning through sharing of materials on the internet as well as research.
 ✓ Has ensured quality output
 ✓ Brought the need for retaining staff in aspects of computing
- (ii) Simulation is one of the application areas of computers. What is meant by the term simulation? (1mk)
 ✓ Is the designing of models of either an actual or theoretical physical item or analyzing / testing the execution output using a computer? (6mks)
- (b) State three advantages of computer based simulation. (6mks)
 ✓ Save cost- cheap way of testing models before actually building them
 ✓ Reduce risks- it allows some activities that would otherwise be expensive & dangerous in real life situation to be put under test.
 ✓ It is faster
 ✓ It enables the manufacturer identify weakness of the real situation hence put correct reinforcement to their designs.
 ✓ It is convenient
- (iii) Differentiate between a software engineer and a computer engineer
 - Software engineer develops software programs as per requirements; computer engineer designs computer hardware and improves on existing ones. *1 mk every correct answer\
- (v) Name three responsibilities that are carried out by a web administrator
 - develop and test websites
 - Down load information needed by the firm from the internet
 - Monitor access and use of the internet by enforcing security
 - Modify, update, and maintain information on the website to meet new demands
 * 1 Mk for any three correct
20. (i) List and briefly describe the components of a database system (3mks)
 ✓ - Hardware: Consists of secondary storage devices on which database reside together with the associated devices
 ✓ Software : The application programs that allow users to store information in an ordered manner for timely and quick retrieved DBMS
 ✓ Data: refers to values physically recorded in the database
- (ii) Define the following terms as used in database (3mks)
- a). Attribute –
 ✓ Is any detail that qualifies, identifies, classifies and quantifies state of an entity
- b). database model –
 ✓ Is a specific method fop describing the structure and processing within a database
- c). Macro –

- ✓ Automated database objects based on commands and events
- (iii) Explain three types of database models (6mks)
- ✓ Flat file database – it holds only one set of data
 - ✓ Relational database – related data items are stored or organized together in structures Called relations/tables
 - ✓ Hierarchical database – data items are organized in hierarchical (Tree-like) structure. Records are stored in multiple levels hence subordinates to the ones above
 - ✓ Network database: It allows data elements to be related to more than one another
- 2 mks for every correct listing explanation
- (iv) State three objectives of normalization 3 mks
- ✓ Relate different tables in a database
 - ✓ To ease the retrieval of data from a relational database
 - ✓ Breaking up multi them tables into smaller workable tables