

**KISUMU DISTRICT JOINT EVALUATION TEST**  
**Kenya certificate of secondary education (KCSE)**

451/1

**COMPUTER**  
**PAPER1**

**MARKING SCHEME**

1.
  - Baking halls, hotel airports – touch screens
  - Engineering architectural designs – digitizers
  - Banks – MICR
  - Speech recognition devices – handicapped especially those with impaired hands , toys, inventory taking in warehouses, blind paralyzed people can give command to a PC
2. Thesaurus – used to find synonyms, autonyms or related word
  
- Spelling –checking for such common typing mistake as repeated words, irregular capitalization, sentence structure such as very long sentence.
3. Organizes the memory into blocks of sizes called partitions. Assigns memory partition to data & instruction
4. Curser movement keys
  - Arrow keys, page up & page down home &endEditing
  - insert, delete (Del) key
5.
  - Monitor traffic in a busy town
  - Aircraft navigation
  - Make reservation in airline
6.
  - a) Piracy – making illegal copies or copyright of software , information or data
  - b) Eavesdropping – tapping into communication channel to get information
7. Responsibilities of computer engineer
  - Design and develop component such as storage devices motherboards
  - Determine electrical power requirements of each computer components
  - Re-engineer computer components to enhance functionality and efficiency
  - Design &manufacture computer controlled device such as robots
8. Looping
  - designed to execute the same block of code again and again until a certain condition is fulfilledSelection
  - Execution of staments depends on a condition that returns true or false
9. AI- branch of computer science that is concerned with the development of machines that emulate human like qualities such as learning reasoning, communicating seeing and hearing
10. meant to help designers to come up with quality layered protocol
11. Connect digital signal to analog and vice versa for the purpose of transmission over analog media
12. Distributed systems  
A computer network that is physically dispersed (geographically dispersed)  
Computer network  
An interconnected set of two or more computers
13. Difference between main frame, mini and microcomputer  
Microcomputer – smallest cheapest &relatively least powerful, designed to be used  
Mainframe-big in size, solve problems while scientific of commercial  
Mini – slightly smaller than mainframe
  - Not as power as mainframe
  - Cheaper than main frame
  - For small organizations

14. Logical errors – Errors in the program logic  
 - Not detectable by the translator  
 Syntax errors – emanate from improper use of language rules e.g. punctuation, grammar
15. Role of communication hardware, facilitates data transmission from source to destination. Provide interface or junctions between the terminal devices.

16. (i) looping while DO 2 marks  
 (ii) Value of P<N

P	2, 4, 6, 10	½ mark for each
L	4, 6, 10, 16	6 marks
N	6, 10, 16, 26	

- (iii) Printout 6, 10, 16 ½ marks each line  
 (iii) Start

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P = 2
L = 4
N = P + L
While N < 20 DO
BEGIN
Print N
P = L
L = N
N = P + L
END WHILE
```

17. (a) ASCII
- American standard code for information Interchange
  - 7 Bit code
  - Only 128 characters can be represented 27
  - However there 8- bit ASCII EBCDIC
  - Extended Binary coded Decimal Interchange code
  - 8 –bit character coded scheme used primary on IBM computers
  - A total 256 characters (28) can be coded using this scheme
- (b)  $11001_2 - 1101_2 = 0010_2$
- (c) (i) Data creation  
 The process of putting together facts in an organized format example manually prepared document or captured from the source using bar code reader
- (ii) Data transmission  
 Moving data from source to destination either via transmission media or physically to a central office
- (iii) Data preparation  
 Transcription (conversion) of data source document to machine readable form data collected through device does not used preparation
- (d) Wireless communication  
 Type of media used to transmit data from one point to another without using physical connections transmitting antenna

Advantage

- Flexible in operation as compared toward devices can be moved around without losing access to the network
- Can span large geographical area easily
- can occur even in remote areas

Disadvantage

- Difficult to establish & configure
- Initial cost is very high

18. Three health concerns
- Repetitive strain injuries (RSI)
  - Eye strain and headaches
  - Electromagnetic emissions

RSI- result from wrist , hand, arm, and muscle strain, tendonitis and neck strains , tendonitis and neck strains due to force repetitive movement e.g. when entering data using the keyboard

- Give is by resting taking frequent breaks change typing technique

Eye strain

- improper use of monitors cause eye stain headaches double vision use monitors win good resolution fitted in antiglare screen that fitters excess light the screens brightness should be adjusted to the intensily that is comfortable with the eyes

Electromagnetic emission

- field emissions are waves of electrical and magnetic energy that are emitted by current carrying conductors

- use low emission devices in order to avoid exposing themselves to excess emissions

19. (a) Computational errors
- Overflow errors  
Calculation is too large to be stored in the allocated memory space
  - Truncation errors  
Occurs when we have real noss that have along fractional part which cannot fit in the allocated memory space
  - Rounding errors  
Results from lowering a digit in a real number to the required rounded number
- (b) Data processing cycle
- (c) Logical files – viewed in terms of what data items it contains and details it what processing operations may be performed on line data items
- Physical files – views in terms of how data is stored on storage media and processing operation are made possible

Multiprogramming

Where more than one program is executed apparently at the same time by a single processing unit

➤ In multiprocessing a computer has more than one processor and processing more than one task at the same time on different processors of the same computer

- (d) 12A .2<sub>16</sub>
- (e) Functions of Nos
- Provides access to networking resources
  - Implementing network security
  - Supporting network services like network card drive and protocols
  - Respond to requests from application programs running on the network
  - Supports process communication i.e. enable the various processes on the network to communicate with one another

20. (a) start
- Input a, b, q
- $x = a + 3$
- $y = b - 2$
- $z = q * (x/y)$
- Stop (4 marks)
- (b) The process of diagnosing and trying to fix (resolve) hardware or software related (2 marks)
- (c) (i) =IF (<2>2000 ,15% \* C2,7.5% \*C2 ) (2 marks)
- (ii) = if (A2= “AFRICA” , “AFR” , IF (A2= “USA” , “US” IF (A2 = “EUROPE” , “EUR”))) (2 marks)
- (d) New opportunities – chance to improve quality of internal processes and service delivery in the organization

Problems – undesirable circumstances that prevent the organization from meeting its goals

Directives – new requirement imposed by government or external influence

(d)

- Games
- Training of pilots
- Therapy for paraplegic
- e- learning
- training drivers