

**BURETI DISTRICT JOINT FORM FOUR EVALUATION TEST - 2010**

**COMPUTER STUDIES**

**PAPER 1**

**(THEORY)**

**MARKING SCHEME**

1. (a) BIOS – Basic input output system✓ 1mk  
(b) Purpose – BIOS controls the booting process of a computer✓ 1mk
  
2. - Press the sound alarm  
- Leave the room in an orderly way  
- If the fire is small, use fire extinguishers which should not be liquid  
- Assemble in a central point  
Any two points @ 1mk total = 2mks
  
3. Parts of a task bar:  
(i) Start button✓ ½ : Displays the start menu✓ ½  
(ii) Task manager✓ ½ : Displays buttons of currently running tasks✓ ½  
(iii) System tray✓ ½ : Has icons of tasks running in the background✓ ½  
@ 1mk total = 3mks
  
4. - Money fraud  
- Identify fraud  
- Dealing with fictitious suppliers  
Any two @ 1mk total = 2mks
  
5. Functions of a UPS  
- Regulate (cleans) power from unstable supply  
- Provides temporary power supply to the computer system incase of sudden power blackouts.  
@ 1mk total = 2mks
  
6. (a) Advantages of twos complements  
- There are no two ways of representing a zero  
- It provides for explicit representation of sign of a binary number.  
Any one 1mk  
(b) Bound control is a control whose data source is specified (linked to a data source while unbound control is one which is not linked to any data source✓ 2mks
  
7. Insert mode: This is the mode in which a character can be inserted in between other characters without deleting them, while type over mode is a mode in which an inserted character deletes existing characters.✓ 2mks
  
8. (a) NOISE these are random and unwanted electronic interfaces collected by a transmission channel✓ 1mk  
  
(b) Multiplexing is the process of sending multiple data signals through the same transmission channel simultaneously✓ 1mk  
  
(c) Attenuation is the loss of signal strength and magnitude as it progressively travel over a transmission channel✓ 1mk
  
9. Reasons:

- The printer may not have been set as the default printer (or correct printer not selected)
  - Wrong configuration of printer port
  - The picking mechanism of papers might be faulty  
Any two @ 1mk = 2mks
10. (a) Functions of network operator
- Set up computer network
  - Maintain and enforce security measures
  - Monitor the use of network resources
  - maintain and trouble shoot network related problems.  
Any two @ 1mk total = 2mks
- (b) Flaming: This is use of abusive, obscene and derogative over the internet✓ 2mks
11. Meaning of file extensions:
- (a) EXE – executable file✓ 1mk
  - (b) BAT – A batch file✓ 1mk
  - (c) SYS – A system file✓ 1mk
12. (a) Firmware: This is the wired logic i.e it is a combination of both hardware and software✓ 1mk
- (b) GPS: Used to direct aircrafts to follow the shortest path between two locations.✓ 1mk
- (c) Storage in optical media:  
It consists of holes and lands when light is reflected from a land, it is interpreted as 1 and light is not reflected from a hole which is interpreted as '0' photoelectric detector transforms the patters into digital form✓ 2mks
14. Computer dictionaries:
- Main /standard dictionary which is in-built
  - custom dictionaries which is user defined  
@ 1mk – 2mks
15. (a) Disk partitioning: Dividing large disk into two or more drives called logical that can be used to install different operating systems✓ 1mk
- (b) Formatting: This is preparation (initialization) of disk for storage of data by creating sectors and tracks✓ 1mk
- (c) Defragmentation:  
Rearranging of files in the storage media to enable faster access.✓ 1mk
16. (a) Dry running: This is going through the program logic using pen and paper to correct obvious errors✓ 2mks
- (b) Printed values:
- A = -1✓ 1mk  
B = 16✓ 1mk  
C = 33✓ 1mk
- (c) Start ✓½
- A = 6  
B = 2  
C = A \* B✓ 1  
While A<0 do✓ 1  
C = C + A

B = B + 2 ✓ 1  
A = A - 1  
End while  
Print A, B, C ✓ 1  
END ✓ ½  
Or repeat loop

(d) Examples of language translators

1. Assembler
2. Interpreter
3. Compiler

Any two @ 1mk = 2mks

(e) Stages:

- (i) User guide: Documentation stage ✓ 1mk
- (ii) System charts: Design stage ✓ 1mk
- (iii) Staff training: Implementation stage ✓ 1mk

17. (a) (i) Parallel running is where both the old system and the new system are simultaneously for sometime until the users have gained confidence in the new system.  
Direct changeover is a complete replacement of the old system with the new system in one bold move ✓ 2mks

(ii) – It may be very inconveniencing in case the new system fails or faces problems  
- The users may not have gained enough confidence to run the system ✓ @ ½ mk = 1mk

(iii) – The risks in terms of system failure.

- The system requires training of personnel due to introduction of new program
- The system testing must be done to greater accuracy
- The system may be expensive to run due to hardware and software costs.  
✓ @ 1mk = 2mks

(iv) – If the output from the two systems are similar, confidence in the ICT system is promoted

- Users have time to familiarize themselves with the ICT system
- It is reliable because it enables thorough testing ✓ @ 1mk = 2mks

(b) Line of straight principle

Means receiving and sending station must be in same line i.e no obstacle in between. ✓ 2mks

(c) (i) Website

- A collection /group of related web pages belonging to an organisation or individual ✓ 2mks

(ii) Three facilities needed to connect internet

- Computer internet software
- Telecommunication facilities
- Modems
- Internet service provider(ISP)
- TCP/IP protocols

Any three @ 1mk = 3mks

18. (a) (i) Advantages of networking

- Resource sharing
- Distributed processing

- Faster communication ✓ 1ny 2 = 2mks

(ii) Two disadvantages of networking

- Overreliance on network means that all functions will be paralysed
- Promote terrorism
- Drug trafficking
- Pornography
- Easy spread of viruses

✓ any 2 = 2mks

(b) Three functions of network operating system

- Coordinates network protocols
- Controls use of network resources
- Provides network administrator tools for managing the network

✓ any 3 @ 1mk = 3mks

(c) Logical topology refers to the way data is transmitted from one point to another while physical topology refers to the way the network devices are arranged ✓ 2mks

(d) (i) Two advantages of star topology

- Easy to install
- Easy to add and remove devices
- Cheap to install

✓ any 2 1mk = 2mks

(ii) Two disadvantages of BUS topology

- If backbone cable fails the entire network fails
- Difficult to troubleshoot

✓ 1ny 2 @ 1mk = 2mks

19. (i) Hand tool: Used to navigate the screens working area ✓ 1mk

(ii) Constrained line

Used to draw a vertical line ✓ 1mk

(iii) Cropping: Used for trimming images ✓ 1mk

(b) Non – printing guides

i) Ruler guides ✓ 1mk

ii) margin guides ✓ 1mk

iii) Column guides ✓ 1mk

(c) Buffer: Fast process memories that holds data awaiting process ✓ 2mks

Cache: Special type of RAM memory ✓ 2mks

(d) Advantages

- Interviewee answers at his /her own time
- Can be used to obtain information that would be difficult to obtain in a face to face interview
- Not costly
- Faster way of collecting information

Any two @ 1mk = 2mks

(e) Conversion

$$5_{10} = 000101_2$$

$$9_{10} = 001001_2 \checkmark 1mk$$

$$\begin{array}{r}
 -9_{10}: \text{ones complement} = 110110 \\
 \text{Adding } 000101 \quad \checkmark 1\text{mk} \\
 \hline
 \underline{110110} + \\
 111011_2 \quad \checkmark 1\text{mk}
 \end{array}$$

20. (a) Input devices are:

- Card reader
- Key pad

Output devices are:

- A speaker
- Receipt printer
- Display screen
- Safe and cash dispenser

✓ @ 1mk = 6mks

(b) (i) Piracy: Making illegal copies of softwares/data ✓ 1mk

(ii) Industrial espionage

Spying on ones competitor with the aim of finishing them ✓ 1mk

(c) Private data is data which belongs to an individual while confidential data is information about people held by an organization ✓ 2mks

(d) (i) Data encryption: This is changing of data into a form that only the sender and receiver can understand ✓ 1mk

(ii) Program patch: This is a small corrective program used to correct an error in a given software

(e) A = 10 = 1010

B = 11 = 1011

C = 12 = 1100

D = 13 = 1101 ✓ 1mk

$$\begin{array}{|c|c|c|c|c|c|}
 \hline
 001 & 010 & 101 & 110 & 001 & 101 \\
 \hline
 1 & 2 & 5 & 7 & 1 & 5 \\
 \hline
 \end{array} \quad \checkmark 1\text{mk}$$

Therefore  $ABCD_{16} = 125715_8$  ✓ 1mk