

**ACCOUNTING TECHNICIANS SCHEME, WEST AFRICA
INFORMATION TECHNOLOGY PAPER FOR MARCH 2021 DIET
QUESTIONS AND MARKING SCHEME**

Time Allowed: 3 hours

SECTION A: PART I MULTIPLE-CHOICE QUESTIONS (30 Marks)

ATTEMPT ALL QUESTIONS IN THIS SECTION

Write ONLY the alphabet (A, B, C, D or E) that corresponds to the correct option in each of the following questions/statements

1. Which of the standard coding form has each of its character coded using 7 bits?
 - A. ABCD
 - B. ASCII
 - C. BCD
 - D. BCDE
 - E. EBCDIC

2. Convert the binary number 100111 to a decimal number
 - A. 39
 - B. 38
 - C. 37
 - D. 36
 - E. 35

3. Which of the following is **NOT** the key element in the definition of a Computer System?
 - A. Electronic Machine
 - B. Reject data
 - C. Stores data and information
 - D. Processes the data into information
 - E. Make information available to end users

4. Which of the following is **NOT** a feature of Mainframe Computers?
 - A. Can be moved around
 - B. Is a large system
 - C. Generates a lot of heat

- D. Is normally housed in air-conditioned room
 - E. Is very expensive
5. Which of the following is **NOT** a type of Microcomputers?
- A. Desktop
 - B. Workstation
 - C. Suite case
 - D. Laptop
 - E. Notebook
6. ALU can perform the following operations, **EXCEPT**
- A. Addition and Subtraction
 - B. Multiplication and Division
 - C. Exponentiation
 - D. Coordination
 - E. Logical Operations
7. Control unit can perform the following operation, **EXCEPT**
- A. Receives instruction in a program, one at a time from the memory
 - B. Comparison
 - C. Interprets the instructions
 - D. Send out control signals to the peripheral devices
 - E. Coordinate all the activities in the system
8. Which of the following is **NOT** an Optical Storage Media?
- A. CD-ROM
 - B. DVD-ROM
 - C. Video Tape Recorder
 - D. WORM
 - E. DVD-RAM
9. Which of the following is **NOT** a Magnetic Storage Media?
- A. CD-ROM
 - B. Magnetic disk
 - C. Winchester disk
 - D. Cartridge disk

- E. Magnetic tapes
10. SVGA is an acronym for
- A. Special Versatile Graphic Array
 - B. Super Versatile Graphic Adapter
 - C. Super Versatile Graphic Array
 - D. Super Video Graphic Adapter
 - E. Super Video Graphic Array
11. Which of the following is **NOT** a type of System Software?
- A. Operating System
 - B. Moduler
 - C. Loaders
 - D. Debuggers
 - E. Editors
12. A program which translates a user's code written in low level language into the machine code is called
- A. Assembler
 - B. Compiler
 - C. Interpreter
 - D. Moduler
 - E. File Manager
13. Utility programs perform the following operation, **EXCEPT**
- A. File copy
 - B. Housekeeping operations
 - C. Sorting
 - D. Disk formatting
 - E. Record Keeping
14. A Database Management System must ensure the following, **EXCEPT**
- A. Easy data storage
 - B. Consistency in data organisation
 - C. Data redundancy
 - D. Rapid access to data
 - E. Easy data retrieval

15. Application packages can be acquired from the following sources, **EXCEPT**
- A. Computer Bureaux and Information centre
 - B. Software Houses
 - C. Software Vendors
 - D. Softloading
 - E. In-house developers

Use the table below to answer Question 16 – 19

S/No	Products Code	Monday (N)	Tuesday (N)	Wednesday (N)	Thursday (N)	Friday (N)
1.	Ref10000010	25563	355625	255555	144333	35522
2.	Ref10000020	42256	35422	45556	41112	55521
3.	Ref10000030	55555	544233	355544	52223	44447
4.	Ref10000040	44456	44455	422554	522223	12345
5.	Ref10000050	33421	67778	355544	777714	45512

16. How many data fields can exist in the table above?
- A. 1
 - B. 4
 - C. 5
 - D. 6
 - E. 7
17. How many data records can exist in the table above?
- A. 1
 - B. 4
 - C. 5
 - D. 6
 - E. 7
18. How many data files exist in the table above?
- A. 1
 - B. 4
 - C. 5
 - D. 6
 - E. 7

19. Which of the following is **NOT** an example of primary key?
- A. Customer number in a customer ledger record
 - B. Stock code number in a stock record
 - C. Employee PIN in a payroll record
 - D. Student name in a student record
 - E. BVN in a bank
20. Which of the following is **NOT** a characteristic of a file?
- A. Hit rate
 - B. Volatility
 - C. Size
 - D. Access time
 - E. Level rate
21. A set of rules/procedures that governs the way information is exchanged between Computers over the network is called
- A. Protocol
 - B. Command
 - C. Syntax
 - D. Algorithm
 - E. Program
22. Which of the following is **NOT** a benefit of network?
- A. Duplication of data on files of different Computers on the network
 - B. Sharing of programs and data
 - C. Better communications
 - D. Security of Information
 - E. Access to databases
23. OSI means
- A. Open System Interconnection
 - B. Open System Internet
 - C. Open Source Internet
 - D. Open Source Interconnection
 - E. Open Source Input

24. Which of the following is **NOT** an Internet Security issues?
- A. Sharing of peripheral devices
 - B. Communication link may break down or distort data
 - C. Information transmitted from one part of the organisation to another may be intercepted
 - D. Employees may download inaccurate information, or imperfect or virus-ridden software from external networks
 - E. A virus on a single Computer can easily spread through the network to all the organisation's Computers
25. Forensic investigation process does not involve theof digital evidence
- A. Identification
 - B. Presentation
 - C. Analysis
 - D. Design
 - E. Preservation
26. Which of the following does **NOT** include the running cost of a system?
- A. Staff salaries
 - B. Training
 - C. Maintenance
 - D. Cost of installing the system
 - E. Utilities and consumables
27. The steps involved in system investigation are
- A. Fact-finding and Evaluation
 - B. Fact recording and Evaluation
 - C. Fact-finding, Fact recording and Evaluation
 - D. Fact finding and Fact recording
 - E. Fact finding
28. The application of investigation and analysis techniques to gather and preserve evidence from a particular computing device in a way that is suitable for presentation in a court of law is
- A. Telecommuting
 - B. Cloud Computing

- C. Forensic Computing
 - D. Grid Computing
 - E. Detective Computing
29. Which of the following does **NOT** include Repetitive Strain Injuries?
- A. Eye
 - B. Neck
 - C. Arm
 - D. Hand
 - E. Wrist
30. A Computer crime that uses psychological manipulations to trick users into making security mistakes or divulging confidential information is
- A. Social engineering
 - B. Salami Technique
 - C. Hacking
 - D. Denial of service attack
 - E. Masquerading

SECTION A: PART II SHORT-ANSWER QUESTIONS (20 Marks)

ATTEMPT ALL QUESTIONS

Write the correct answer that best completes each of the following questions/statements

1. The logical components of a system are Input, Output and.....
2. A system which interacts with their environment for the collection of Information is known as
3. A system that contains built-in control mechanism for self-regulating is known as
4. A printer that work by banging a head or needle against an ink ribbon to make a mark on the paper is called
5. A program that converts the user's code into machine language code is known as

6. A finite sequence of instructions to solve a given problem is called
7. In a program flowchart symbol, the circle shaped box depicts
8. A collection of related data files is known as
9. Another name for machine code is
10. The way data are stored on the physical storage media is known as
11. The amount of time taken to complete a process or fulfil a request is known as
12. A procedure that a computer's CPU follows to change from one task to another while ensuring that the tasks do not conflict is called
13. A technique that enables many people, located at various terminals, to use a particular Computer system at the same time on time slice basis is called
14. A network in which all the PCs on the network communicate directly with each other and there is no server is called
15. The technique of transforming information to make it unreadable for unauthorised users in order to preserve its confidentiality during transmission and when stored is called
16. The Seventh layer of OSI model is known as
17. A communication equipment that performs the conversion of computer's digital signals to analog signals as well as analog signals to digital signals is called
18. The process through which users or organisations send files and documents to the internet for authorised users to access is called
19. A protocol used by the World Wide Web that defines how messages are formatted and transmitted, and what actions web servers and browsers should take in response to various commands is called

20. An approach of changeover where the old system is discarded and replaced with the new system is known as

SECTION B: ATTEMPT ANY FOUR QUESTIONS (50 Marks)

QUESTION 1

- a. Define
 - i. Quantitative Information (1½ Marks)
 - ii. Qualitative Information (1½ Marks)
 - b. State **THREE** examples of Quantitative Information (1½ Marks)
 - c. State **FOUR** benefits of Information Systems (4 Marks)
 - d. State **FOUR** challenges of Information Systems (4 Marks)
- (Total 12½ Marks)**

QUESTION 2

- a. What is an Output device? (2 Mark)
 - b. Describe **THREE** features of Impact printers as an output device (3 Marks)
 - c. Identify and describe **FIVE** output devices (7½ Marks)
- (Total 12½ Marks)**

QUESTION 3

- a. What is an application package? (2½ Marks)
 - b. Enumerate **FIVE** advantages of off-the-shelf application package over in-house packages (5 Marks)
 - c. Enumerate **FIVE** disadvantages of off-the-shelf application package over in-house packages (5 Marks)
- (Total 12½ Marks)**

QUESTION 4

- a. Describe Real time processing (2½ Marks)
 - b. State **FIVE** benefits of Real time processing (5 Marks)
 - c. State **FIVE** challenges of Real time processing (5 Marks)
- (Total 12½ Marks)**

QUESTION 5

- a. What is Cloud computing? (2 Marks)
 - b. List and describe the **THREE** technologies used in Cloud computing (10½ Marks)
- (Total 12½ Marks)**

QUESTION 6

- a. What is safety and security in a workplace? (1 Mark)
 - b. List and describe **THREE** health issues that can happen to a user of computer in a work place. (9 Marks)
 - c. State **FIVE** basic steps/techniques involved in Forensics Processes (2½ Marks)
- (Total 12½ Marks)**

SOLUTION TO QUESTIONS

SECTION A: PART 1 MULTIPLE-CHOICE

1. B
2. A
3. B
4. A
5. C
6. D
7. B
8. C
9. A
10. D
11. B
12. A
13. E
14. C
15. D
16. E
17. C
18. A
19. D
- 20 E
21. A
22. A
23. A
24. A
25. D
26. D
27. C
28. C
29. A
30. A

(1 Mark for each question Total: 30 Marks)

SECTION A: PART II SHORT-ANSWER QUESTIONS (SAQ)

1. Process/processing
2. Open system
3. Closed-loop control system
4. Impact printer/line printer
5. Language Processor/language translator
6. Algorithm
7. Connector
8. Database
9. Object code
10. File organisation
11. Turnaround time
12. Multi-tasking
13. Time-sharing
14. Peer-to-Peer
15. Data encryption/cryptography
16. Application
17. Modem (Modulator/Demodulator)
18. Uploading
19. HTTP (Hypertext Transfer Protocol)
20. Direct changeover

(1 Mark for each question Total: 20 Marks)

SECTION B

QUESTION 1

ai. Quantitative Information

This is an information that deals with the magnitudes of variables, their variability or absolute value. It can also be defined as the value of data in the form of counts or numbers where each data-set has a unique numerical value associated with it. It is usually collected for statistical analysis using surveys, polls or questionnaires sent across to a specific section of a population.

It is any quantifiable information that can be used for mathematical calculations and statistical analysis, such that real-life decisions can be made based on these mathematical derivations. It is used to answer questions such as “How many?”, “How often?”, “How much?” This information can be verified and can also be conveniently evaluated using mathematical techniques.

(1½ marks for correct definition)

(½ x 3 points = 1½ Marks)

ii. Qualitative Information

This is an information that is related to the attributes of an entity in respect of quality factors. This type of information is not exact in nature but it is very useful for comparative measurement.

Qualitative information describes qualities or characteristics. It is collected using questionnaires, interviews, or observation, and frequently appears in narrative form.

For example, it could be notes taken during a focus group on the quality of the food at restaurant or responses from an open-ended questionnaire. Qualitative information may be difficult to precisely measure and analyses. It could be in the form of descriptive words that can be examined for patterns or meaning, sometimes through the use of coding.

Qualitative information could also be standard of finished product in respect of paintwork, variation of tolerances of manufactured parts such as deviation from standard dimensions –

(1½ marks for correct definition)

(½ x 3 points = 1½ Marks)

b. Examples of Quantitative Information include:

- i. Annual sales of Production company
- ii. Variation in the wages of low-level staff in an organisation
- iii. Number of people who log-in within a specified period by checking the system log
- iv. Number of employees who report for work through the use of clocking machine
- v. Prices of goods
- vi. Number of hours worked on a production line
- vii. Number of people who download a particular application from the App Store.

½ mark for each correct answer up to maximum of THREE = 1½ Marks

(½ x 3 points = 1½ Marks)

c. Benefits of information system include:

- i. Operational efficiency
- ii. Functional effectiveness
- iii. Provision of improved services
- iv. Better products selection
- v. Competitive advantage
- vi. Reduction in the rate of error
- vii. It enhances faster processing
- viii. It enhances paperless office
- ix. Increase in productivity
- x. Savings in labour
- xi. It reduces storage space of files since files can be stored in electronic form rather than hard copies in cabinets.
- xii. Better customer services
- xiii. Complete and recent information

(½ mark for each correct answer up to maximum of THREE = 1½ Marks)

(1 x 4 points = 4 Marks)

d. **Challenges of information system include:**

- i. Loss of valuable data due to virus infection, and end users mistakes or deliberate action by the user
- ii. Users activities will be system dependent, therefore if the system breaks down, activities of the user will be affected
- iii. Unauthorized access due to hacking or eavesdropping to enhance the fraudulent activities of fraudsters
- iv. GIGO phenomenon (Garbage-in Garbage-out) which means whatever you feed into a system will be processed by the system. Therefore, if wrong data is fed into the system wrong information will be produced
- v. Users may be prone to some health hazard such as eye strain, finger strain, wrist pain and general tiredness
- vi. Information produced and not well understood or explained can lead to wrong use
- vii. It can lead to staff redundancy
- viii. Ease of fraud
- ix. The use of information system requires some level of computer literacy
- x. High cost of acquisition
- xi. High cost of maintenance

1 mark for each correct answer up to maximum of FOUR = 4 Marks

(1 x 4 points = 4 Marks)

(Total Mark = 12½ Marks)

QUESTION 2:

- a. *Output devices are devices that bring out computer output or information from the central processing unit to the outside world such as monitor, printer, speaker.*

OR: It is any piece of computer hardware equipment that gives information out from a computer system. **(2 Marks for correct definition)**

b. Features of impact printers as an output device are:

- i. It is old technology
- ii. It makes noise when printing
- iii. It cannot print a page at a time

- iv. It does not have good quality print out
- v. It is very slow
- vi. It uses ink ribbon
- vii. It is relevant for printing multiple copies (i.e carbon copies)
- viii. It is useful for bulk copies because of its low cost of operation

1 mark for each correct answer up to maximum of THREE = 3 Marks

(1 x 3 points = 3 Marks)

c. Examples of output devices are:

- i. Monitor or Visual Display Unit (VDU)
- ii. Printer
- iii. Speaker
- iv. Projector
- v. Graph plotter
- vi. Computer output on Microform (COM)
- vii. Headphone
- viii. Voice Response (Audio Response Unit)

Explanations:

i. Monitor:

This is a device that displays computer output on its screen (sometimes in colours) in the form of text, graph, diagram or picture. The Visual Display Unit output is called softcopy output and is only suitable for data of temporary use.

Types of Monitor:

- Monochrome Monitor: It displays information in black and white colour
- Colour Monitor: It displays information in different colours
- Liquid Crystal Display Monitor

ii. Printer:

A printer is an output device that produces computer output on paper known as hardcopy output. The output produced on paper is the most usual form of output.

Printers can be classified into two categories:

- i. Impact printer
- ii. Non-impact printers

Examples of printer are:

- Line printer
- Daisy wheel printer
- Dot matrix printer
- Thermal printer
- Electrostatic printer
- Inkjet printer
- Xerographers
- Lasers printers etc.

iii. **Speakers**

These are hardware devices that transform the signal from the computer's sound card into audio. Speakers create sound using internal amplifiers that vibrate at different frequencies according to data from the computer. This produces sound.

iv. **Projector**

As its name suggests, this output device projects computer images or video onto a wall or screen. The computer transmits the image data to its video card, which then sends the video image to the projector. It is most often used for presentations or for viewing videos.

v. **Graph Plotter**

This is a device used for the output of graphical information on large and small computers. The most common type is the drum plotter. Continuous paper lies over the surface of the drum with the pen in a cradle that will move auxiliary with respect to the drum.

vi. **Computer Output on Microform (COM)**

Computer Output on Microform is a form of computer output whereby, the output is projected on to a cathode ray tube and photographed into a very much reduced form i.e, into a microform. Microform is readable but it requires a magnifying reading device or photographic development before it can be viewed.

There are two types of a Microform:

- **Microfilm:** This is an ordinary roll of film i.e, a continuous strip with images formed in frames one at a time, along the strip of the film.
- **Microfiche:** It is a separate sheet of film containing a rectangular pattern of pages. Special viewers are available to magnify a page at a time up to readable size. Normal printout can simply be photographed on the microfilm or microfiche but there are special COM units using cathode – ray tubes or light-emitting diodes and providing film or fiche output direct, requiring only photographic development.

vii. **Headphone**

It allows the users to listen to audio without disrupting other people in the vicinity

viii. **Voice Response (Audio Response Unit)**

A voice response system is also known as an audit response unit or a voice answer back machine and is one of the least familiar peripheral. It has a restricted vocabulary of fixed words that are produced as audio output to sound like a human voice.

(7½ Marks)

(Total 12½ Marks)

QUESTION 3:

a. **Application packages**

An application package is a software that consists of programs which are written to solve specific user's problems. It consists of programs which direct the computer system to solve specific data processing activities

required for the solution of business and other problems of the computer user. It is designed for user's immediate use and supports users. It can also be defined as a pre-written computer program that are widely used for specific applications in order to avoid unnecessary duplication of similar programs by many users. **(2½ Marks for correct definition)**

b. Advantages of off-the-shelf application packages over in-house packages:

- i. It enables faster implementation of the computer system compared to in-house packages.
- ii. It reduces errors in design since the packages would have been properly tested by various users before sales as against in-house packages that can only be tested by the user alone.
- iii. It provides software expertise not normally available to common users.
- iv. It reduces cost since the cost of developing the package would have been spread across many buyers as against in-house packages that the cost will be incurred by the users alone.
- v. The user does not have the potential burden of computer staff to contend with; as packages are suited to be operated by non-computer personnel.
- vi. It is less expensive compared to in-house packages.
- vii. It is usually error free and well suited to the general public.
- viii. It is constantly updated by the developer.
- ix. It is written by software specialists and has a very high quality.
- x. It can be used immediately by the user after purchase because it must have been properly tested by the developer.
- xi. It is long in the market
- xii. It is well documented with ease to follow users' manual.

(1 Mark for each correct answer up to the maximum of 5 = 5 Marks)

c. Disadvantages of Application Packages

- i. The user will have less control over the quality of works and services than they would have over programs produced by their own employees.
- ii. The user is dependent on the supplier of the package for maintenance of the system as against the in-house packages that easily be maintained by the user or developer who is resident in the organisation.
- iii. There is the likelihood of inefficiency resulting from the inclusion of features not relevant to every application but the features in in-house packages will be limited to user's needs.

- iv. Off-the-shelf application packages cannot be customized unlike in-house developed packages that can easily be customised because it is 'tailor-made'.
- v. It produces standardized solution which may be well suited to individual user.
- vi. It may not have some special features required by the end user.
- vii. Sometimes, the off-the-shelf packages may not be compatible with the hardware or data structure of the organisation.
- viii. The developer will be more attached to the software therefore the user will depend on the manufacturer for maintenance and update.
- ix. The source code of off-the-shelf packages is not with the user therefore it can only be upgraded by the developer
- x. Customization of off-the-shelf may be problematic.
- xi. The off-the-shelf may demand for high memory capacity which may be very expensive to an Organisation.
- xii. It may not have some special features requires by the end-user.

(1 mark for each correct answer up to maximum of FIVE = 5 Marks)

(1 x 5 points = 5 Marks)

(Total 12½ Marks)

QUESTION 4

a. Real time Processing:

Realtime processing is a processing method whereby data can be entered into a system, all the data will be accepted, processed and all relevant files updated and the result will be produced immediately because the result will be needed to take further action.

In realtime processing, data are captures electronically, edits for accuracy and completeness, process it instantly and produces result. Output from realtime processing is generated immediately so that it can be used to influence the current activities. (2½ Marks)

b. Benefits of Real-time processing are:

- i. Result is made available immediately
- ii. It enhances paperless transaction
- iii. In realtime processing, several databases can be updated and updated concurrently.

- iv. It enables users to see the cumulative effect of all transactions for decision making.
- v. It avoid costly and time consuming data preparation and control
- vi. It is interactive
- vii. It enhances quick decision making due to immediate result from the system.

(1 mark for each correct answer up to maximum of FIVE=5 Marks)

c. Challenges of Real-time processing are:

- i. It is very complex to design and implement
- ii. Processing activities will be network dependent
- iii. It is prone to security challenges such as hacking, eavesdropping
- iv. There is no enough time to adequately check input data for error
- v. Organisations with critical realtime applications have to pay a high cost premium for the security of fault tolerant computer system
- vi. It is expensive to implement.
- vii. Users may be prone to some ergonomic risk factors such as eye strain
- viii. Implementation of realtime processing requires a lot of expertise.

(1 mark for each correct answer up to maximum of 5=5 Marks)

(Total 12½ Marks)

QUESTION 5:

a. Cloud Computing

Cloud computing can be defined as internet-based computing whereby shared resources, software and information are provided to computers and other devices on demand like the electricity grid.

It describes a new supplement, consumption and delivery model for information technology services based on the web-based tools or applications that users can access and use through a web browser as if it were a program installed on their own computer.

Cloud computing is a system in which applications and services run on a distributed network using virtualized resources and accessed by common internet protocols and networking standard.

It can also be described as a trend in information technology that moves computing resources and data away from the user's desktop and personal computers into a large data center.

It is a web-based technology where quality services are provided to users including data and software, on remote servers.

(2 Marks for correct definition)

b.

Technologies used in Cloud Computing are:

- i. Infrastructure-as-a-service (IaaS)
- ii. Platform-as-a-service (PaaS)
- iii. Software-as-a-service (SaaS)

Infrastructure-as-a-Service (IaaS): The backbone of the entire concept; the vendors provide the physical storage space and processing capabilities that allow for all the services described above. Major infrastructure vendors are:

- **Google** - managed hosting, development environment
- **International Business Machine (IBM)** - managed hosting
- **Terremark** - managed hosting
- **Amazon.com** - cloud storage
- **Backspace Hosting** - managed hosting and cloud computing.

Platform-as-a-Service (PaaS): The platform segment of cloud computing refers to products that are used to deploy applications. Platforms servers as an interface for users to access applications provided by partners or in some cases the customers. Examples of platforms are salesforce.com platform, Netsuite, Amazon, Google, Sun Oracle, Microsoft etc.

Software-as-a-Service (SaaS): In the past, the end-user would generally purchase a license from the software provider and then install and run the software directly from on-premise servers. Using on-demand service, the end-user pays the software a subscription fee for the service. The software is hosted directly from the software provider servers and is accessed by the end-user over the internet. Some of the companies that offers SaaS business include: Sales force.com, Google, Netsuite, Info Technologies, Canada software.net.

(10½ Marks)

(Total 12½ Marks)

QUESTION 6

a. Safety and security in workplace

This is a set of measures put in place to protect an employee from work related illness and injury and to make the workplace safe, secure and conducive for employees.

Safe and secure working environment can be provided by using thorough security system including access control systems, CCTVs (Closed Circuit Television), keycards, clean environment, emergency exits, training the employees about security procedures, constant improvement of the system as well as using security guards to physically guarding the entire work place.
(1 Mark for correct definition)

b. Health issues that can happen to a user of computer in a work place are:

- i. Eye strain
- ii. Back pain
- iii. Finger strain and wrist pain
- iv. Repetitive Stress Injury (RSI)
- v. Obesity
- vi. Photosensitive epileptic seizures (caused by flashing or rapidly changing lights).

EXPLANATIONS:

i. Eye strain:

Focusing eyes at the same distance point for long periods of time causes eye problem. The human eye structurally prefers to look at objects more than six metres away, so any work performed close up puts extra demands on your eye muscles.

The illuminated computer screen can also cause eye fatigue therefore, computer users may get symptoms such as blurred vision, temporary inability to focus on faraway objects and headaches.

ii. Back pain:

Improper use of furniture and use of chair without back rest can cause back pain which may result to miscarriage in pregnant women. User must constitute the habit of using proper furniture with back rest.

iii. **Finger strain and wrist pain:**

Improper positioning of keyboard and using inability to rest the wrist on the table when using the keyboard may lead to finger strain as well as wrist pain.

iv. **Repetitive Stress Injury (RSI):**

This consists of wrist, hand, arm and neck injury resulting when muscles are forced through fast and repetitive motion. Repetitive stress injury can as well lead to damage to the nerves and tendons in the hands.

v. **Obesity:**

This is a state of being grossly fat or overweight due to prolong sitting when using the computer system. Prolong use of the system will prevent the user from doing regular exercise which may lead to obesity. To prevent this, regular exercise is required to burn the excess fat.

(1 Mark for each correct technology listed and 2 marks for detailed explanation of each point up to the maximum of 3 = 9 Marks)

c. **The following are basic steps involved in forensic processes:**

- i. Preparation of investigation
- ii. Collection of the data
- iii. Examination of data
- iv. Analysis of data
- v. Reporting

(1/2 Mark for each correct answer up to maximum of 5 = 2½ Marks)

(Total 12½ Marks)

QUESTION ONE		Section mark	No. mark	Total mark
ai.	1½ marks for definition	1½		
aii.	1½ marks for definition	1½	3	
b.	½ mark for each of three examples $\frac{1}{2} \times 3 = 1\frac{1}{2}$		1½	
c.	1 mark for each of four benefits $1 \times 4 = 4$		4	
d.	1 mark each of four challenges $1 \times 4 = 4$		4	
Total:				12½
QUESTION TWO				
a.	2 marks for definition		2	
b.	1 mark each for three features $1 \times 3 = 3$		3	
c.	½ mark each for listing five devices $\frac{1}{2} \times 5 = 2\frac{1}{2}$	2½		
	1 mark each for explaining the five devices $1 \times 5 = 5$	5	7½	
Total:				12½

QUESTION THREE				
a.	2½ marks for definition		2½	
b.	1 mark each for five advantages 1 x 5 = 5		5	
c.	1 mark each for five disadvantages 1 x 5 = 5		5	
Total:				12½
QUESTION FOUR				
a.	2½ marks for definition		2½	
b.	1 mark each for five benefits 1 x 5 = 5		5	
c.	1 mark each for five challenges 1 x 5 = 5		5	
Total:				12½
QUESTION FIVE				
a.	2 marks for definition		2	
b.	1 mark each for listing three technologies	3		
	1 x 3 = 3			
	½ mark each for PROPER listing (hyphen inclusion) ½ x 3 = 1½	1½		
	2 marks each for explaining the three technologies 2 x 3 = 6	6	10½	
Total:				12½

QUESTION SIX				
a.	1 mark for definition		1	
b.	1 mark each for listing three health issues	3		
	$1 \times 3 = 3$			
	2 marks each for explaining three health issues $2 \times 3 = 6$	6	9	
c.	$\frac{1}{2}$ mark each for listing five steps $\frac{1}{2} \times 5 = 2\frac{1}{2}$		$2\frac{1}{2}$	
	Total:			$12\frac{1}{2}$