UMTA UCE GUIDE 2018
COMPUTER STUDIES840/1

For examiner's use only

MCQ	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	TOTAL

Section A

- *Answer all questions in this section*

1. This computer component holds processed information before it is output.
   a) Ram
   b) Rom
   c) bus
   d) ports

   A

2. What is the technique in shared systems that avoid mixing printout from several programs called?
   a) Paging
   b) Slicing
   c) Queuing
   d) Spooling

   D

3. Software development life cycle is
   a) the life-time of software
   b) stages of software development
   c) when a software is removed
   d) ways of creating software

   B

4. In order to protect computer systems from viruses we use _____ software.
   a) antivirus
   b) anti worm
   c) application
   d) firewall

   A

5 . Which tag allows you to add a row in a table?
   a) <td> and </td>
   b) <cr> and </cr>
   c) <th> and </th>
   d) <tr> and </tr>

   D

6. A knowledge-based system that simulates human reasoning is known as:
   a) computer system
   b) database system
   c) expert system

   C

d) IntelSat system

7. Electrical interferences that can distort data during transmission are called:
   a) virus
   b) trojan
   c) noise
   d) modulation

C

8. Which printer prints by spraying ink at the paper?
   a) Laser printer
   b) Dot matrix printer
   c) Ink Jet printer
   d) Line printer

C

9. A _____ is a blank ROM that can be programmed once only.
   a) EPROM
   b) EEPROM
   c) Flash ROM
   d) PROM

D

10. A software responsible for controlling, integrating, and managing the individual hardware components so that other software and the users see it as a functional unit without having to be concerned with the low-level details
    a) System Software
    b) Application Software
    c) Utility Software
    d) Computer software

A

11. Control programs stored in ROM chip such as ROM BIOS is
    a) Firmware
    b) Live ware
    c) Hardware
    d) Human ware

A

12. What is the difference between Data Integrity and Data Security?
    a) Limiting physical access to computer systems; assigning passwords to users.
    b) Consistent, accurate and reliable data; protection of data from unauthorized access.
    c) Encryption; Audit trails
    d) Distributing work to preserve integrity; installing system passwords

B

13. A device driver is:
    a) The person who delivers hardware devices to a computer store,
    b) The connector that allows you to attach the device to a computer,
    c) A computer program that allows the operating system to communicate with the device,

C

d) The power supply for the device

14. A _____ enables you to view data from a table based on a specific criterion
    a) Form
    b) Query
    c) Macro
    d) Report

B

15. Which function will you use to enter current date and time in a worksheet cell?
    a) =today ()
    b)=now()
    c) =time()
    d) =current Time()

B

16. Chief component of first generation computer was
    a) Transistors
    b) Vacuum Tubes and Valves
    c) Integrated Circuits
    d) Microprocessors'

b

17. Before a disk is used tracks and sectors must be imprinted by
    a) Scanning
    b) Printing
    c) Formatting
    d) Defragmentation

C

18. A hyperlink can be defined as
    a) A text or picture that links one page to another on the internet.
    b) A text or picture that has some dynamic properties on the page.
    c) Scrolling text or pictures on the website.
    d) A joint in the page

A

19. Freezing panes accomplishes the following
    a) It makes the worksheet to resist any form of scrolling
    b) it makes the frozen rows and columns to remain visible as others scroll
    c) It hides some columns in the worksheet which the user does not need currently.
    d) it stops rows and columns from moving

B

20. In the text, cm^3, the character 3 raised above the rest is a
    a) Upperscript
    b) Subscript
    c) Superscript
    d) Lowerscript.

C

SECTION B

- *Answer all questions in this section. Answers Must be written in the spaces provided*

21. (a) Define the term evolution of computer? **(Any 1X1=1mark)**

- Refers to the gradual development /improvement/advancement /growth of computing devices and technology from simple to more complicated and advanced forms.
- Deny mark for stages and generations **(emphasis be on mechanical change of devices)**

(b) List any three situations that necessitate serving and repairing of a computer.

(Any 3x1=3marks)

- When the computer slows down.
- When the hard disk is full
- When there is need to upgrade the software.
- When there is need to blow dust out of the computer
- In case there is need to upgrade the any hardware part in the computer e.g. Ram
- When installing an updated antivirus software.
- When re-installing a new operating system.

(c) What is a computer system?

(combination / interrelated/ collection/ interconnected) any of these terms must appear in the definition to be correct. (1 Mark)

- A computer system is a basic, complete and functional computer, including all the hardware and software required to make it functional for a user.
- Is a collection of entities (hardware, software and live ware) that are designed to receive process, manage and present information in a meaningful format.
- A computer system refers to the combination of hardware, software, user and data/system of interrelated components these includes hardware, software, human ware and data/instructions.

(d) The most secure input devices are biometric devices. As a student of Computer studies define Biometric devices and give an example. (1 Mark)

- is a security identification and authentication device, which uses automated methods of verifying or recognizing the identity of a living person based on a physiological or biological characteristic. Include fingerprints scanner, facial images scanner, iris scanner and voice recognition**.**
- ***These are devices which can capture human body/ biological features and translate them into digital/electronic form which can be entered in the computer.***

(e) Distinguish between optical storage devices and solid state storage devices giving an example for each. (4 Marks)

- **Optical storage device**s are storage devices that can hold information as a pattern of dots that can be read using a laser beam of light normally with a circular shape e.g. CD,CDR,CDROM,CDRW,DVD,Blue-ray while
- **Solid state devices** are nonvolatile devices without moving parts and can store data electronically.e.g Flash memory, memory card, SS hard drive.

Or

- ***It's a storage media which use laser beams of light to read and write data.***

While,

- ***Solid-state storage media is a storage device made from silicon microchips/ integrated circuits. Solid state storage media stores data electronically. Example Memory cards, Flash disks, smartcards.***

22. (a) what is meant by the term system software? (01 Mark)

- System software is a type of computer program that is designed to run a computer's hardware and application programs.
- System software is software on a computer that is designed to control and work with computer hardware.

(b) Explain these terms in relation to primary memory (02 Marks)

(i) Volatile memory

- Volatile memory is a memory that retains its content only when the device is powered.

(ii) Non-volatile memory

- is a type of computer memory that has the capability to hold saved data even when the power is turned off.

(c) List any two advantages of bespoke software
(it's the same as tailor-made, customized) (02 Marks)

- It provides greater efficiency and better customer service as it addresses the specific needs of an organization.
- It will give competitive advantage over other companies dealing in the same business.
- It can't easily be pirated due to limited access to the outsiders.
- It has higher user satisfaction.

(d) Define the following word processing terminologies (03 Marks

(i) Text alignment

- Refers to the way lines of text are arranged relative to the edges of a block of text. There are four types of alignment: left, centre, right, and justify.

(ii) Clipboard

- The Clipboard is an area of memory in which you can store copied or cut text, graphics or any other items temporarily before being pasted into other locations**.**

(iii) Line spacing

- Refers to the amount of vertical white space between two lines of text, from baseline to baseline. Line spacing is measured in points.

(e) As a new secretary at your place of work, mention any two advantages of using word processing software than manual typewriters (02 Marks)

- Most people can type faster than they can write.
- word-processed documents are always legible documents can easily be send electronically.
- Can use certain features like hyperlinks spell /grammar check.
- Easy to erase and fix mistakes and edit text.
- It is easier to make changes to your document. You can move, change, delete, save, and format all your ideas in one handy file.
- It frees you to express ideas more clearly and to let your thoughts flow because anything can be changed or deleted later.
- It allows you to organize all your work or ideas together in a file.

23. (a) Which is the best view to use when setting transition effects for all slides in a Presentation (01 Mark)

- Normal view

(b) List any three importance of using presentations during communication. (03 Marks)

- Help to address large audience
- Attract the attention of the audience
- To cater for all categories of people using both audio and video
- To make the presentation more meaningful and to attract their attention
- To make the presentation precise and concise

(c) Distinguish between hard boot and soft boot (04 Marks)

- **Hard boot (cold booting)** is the starting of a computer where the power source is physically turned off and later turned on whereas **soft boot (warm booting)** is the re starting of a computer without the need to interrupt the power source.

(d) Briefly describe what you understand by the term Hardware configuration (02 Marks)

- The way different physical components are set up to come up with a functioning system.

24. (a) What is meant by the term communication software? (01 Mark)

(Sending and receiving, transmition,exchange)

- Communication software is an application or program designed to pass information from one system/device to another.

(b) (i) Define the term telecommuting (01 Mark)

- Is a work arrangement in which the employee works outside the office, often working from home or a location close to home.

(ii) List any two advantages and two disadvantages of telecommuting in the world today. (04 Marks)

Advantages

- Increased productivity – While it might seem out-of-sight employees will take advantage of opportunities to slack off, studies indicate the opposite.
- Increased comfort
- Reduction in transport costs
- Its environmental friendly

Disdvantages

- Lack of social interaction
- Lack of motivation
- Work –family conflict
- Hard to monitor productivity hence poor quality
- Laziness due to lack of supervision
- Tasks my be not accomplished on time
- Network problems

(c) A deputy head teacher in a school keeps a spreadsheet of pupil data on his laptop showing progress of pupils in three main subjects

	A	B	C	D	E	F	G	H
1	SECOND NAME	FIRST NAME	GENDER	ENGLISH	MATHS	SCIENCE	AVERAGE	
2	ALI	JEFFREY	M	72	71	52	65	
3	BINT	SABINA	F	53	80	53	62	
4	JOHN	MUYINGO	M	72	61	68	67	
5	KALUNGI	MUSTAPHA	F	54	81	78	71	
6	McDonald	Calum	M	59	67	63	63	
7	Mohammed	Ali	M	71	60	82	71	
8	Odong	Michelle	F	50	49	45	48	
9	Rashid	Jean	F	89	91	96	92	
10								
11								

(i) Name the column for which this spreadsheet has been sorted (1 Mark)

Column A

(ii) Write down the formulae which is in cell G3 (1 Mark)

=Average(D3:F3)
=Average(D3,E3,F3)
=Average(D3:E3:F3)
=(D3+E3+F3)/3

(iii) If all the data were sorted in column G, in ascending order, write down the name of the student who would be at the top of the list.(1 Mark)

- ***Odong***

(iv) If you were to rank the students basing on their average mark, write down the formulae you would enter in cell H2 (1 Mark)

=Rank(G2,$G$2:$G$9)
=Rank(G2,$G$2:$G$9,0)

25. (a) Distinguish between a web page and a website (2 Marks)

- A web page or webpage is a document commonly written in Hypertext Markup Language (HTML) that is accessible through the Internet or other network using an Internet browser while as A website is a collection of related web pages.

(b) Explain the functions of the following:- (3 Marks)

(i) Domain name
Is used to find and identify a computer or a web resource on internet.

(ii) Web browser

- ***allows a user to access, and display web pages.***

(iii) Search engine

- ***Allows Internet users to locate or find a particular resource on the World Wide Web (WWW).***

(c) What is a flat file database? (01 Mark)

- A flat file database is a type of database that stores data in a single table.

(d) Mention any two advantages of using electronic database system (02 Marks)

- Reduced data redundancy
- Reduced updating errors and increased consistency
- Greater data integrity and independence from applications programs

- Improved data access to users through use of host and query languages
- Improved data security.
- Reduced data entry, storage, and retrieval costs.
- Facilitated development of new applications program.

(e) State two characteristics of a good database design (02 Marks)

- It is easy to modify and maintain without affecting other fields or tables in the database
- Information is easy to retrieve, and user applications are easy to develop and build.
- The database is scalable, meaning that it can be expanded to meet the changing needs of an organization

26. (a) Define the term programming (01 Mark)

- The process of writing computer programs.
- Programming is the art and science of translating a set of ideas into a program

(b) List any two factors you would consider when designing a good pseudo code.

(02 Marks)

- The statements must be short, clear and readable
- The statements must not have more than one meaning ie.should be unambiguous
- The pseudo code lines should be clearly outlined and indented clearly.
- A pseudo code should show clearly that start and stop executable statements and control structures
- The input, output and processing statements should be clearly stated, using keywords such as PRINT,READ,INPUT

(c) Write the following in full (02 Marks)

(i) OOP

Object oriented programming

(ii) HTML

Hypertext Markup language.

(d) Basing on the use of computers define the term computer ethics. (01 Mark)

- Is a set of moral principles that regulate the use of computers. Some common issues of computer ethics include intellectual property rights (such as copyrighted electronic content), privacy concerns, and how computers affect society.

(e) Give any two career opportunities in information and communication technology and explain one function for each (04 Marks)

- A system administrator, or sysadmin, is a person who is responsible for the upkeep, configuration, and reliable operation of computer systems; especially single-user computers, such as servers

- Software developer. Similar to: software engineer, software architect, web developer, mobile developer, systems developer, test automation developer. Function-Software developers implement software solutions by building programs, applications and websites.
- Systems analyst. Similar to: systems developer, systems engineer. Function-Systems analysts examine existing IT systems and write requirement for new ones.
- Business analyst. Similar to: business architect, information specialist. Function/job- Business analysts are equally happy talking with technology people, business managers and end users.
- IT support analyst. Similar to: helpdesk support analyst, technical support analyst.
  Function/ job - IT support analysts provide technical set-up, support and advice to IT
  users via email, phone, social media and in person.

- Network engineer. Similar to: hardware engineer, network designer. Job/function: Network engineering is one of the more technically demanding IT jobs. Broadly speaking the role involves setting up, administering, maintaining and upgrading communication systems, local area networks and wide area networks for an organization.

- IT consultant. Similar to: technical consultant. Function/job in brief: The term 'consultant' can be a tagline for many IT jobs, but typically technical consultants provide technical expertise to, and develop and implement IT systems for, external clients.
- Web designer.Similar to: multimedia programmer, video games designer, web developer. Function/ job: Web designers create the design and layout of a website or web pages, working with colleagues or clients to meet their requirements.
- Computer forensic investigator. Computer crime detectives – Function/job. Computer forensic investigators search for, identify and evaluate information from computer systems, often for trial evidence.

SECTION C

- ***Answer only ONE question in this section***

27. (a) Giving examples distinguish between high level languages and low level languages (02 Marks)

Low level language	High level language
They are faster than high level language in execution.	They are comparatively slower in execution.

Low level languages are memory efficient.	High level languages are not memory efficient.
Low level languages are difficult to learn.	High level languages are easy to learn.
Programming in low level requires additional knowledge of the computer architecture.	Programming in high level do not require any additional knowledge of the computer architecture.
They are machine dependent	They are machine independent
They provide less or no abstraction from the hardware.	They provide high abstraction from the hardware.
They are more error prone.	They are less error prone.
Debugging and maintenance is difficult.	Debugging and maintenance is comparatively easier.
They are generally used for developing system software's (Operating systems) and embedded applications.	They are used to develop a variety of applications such as – desktop applications, websites, mobile software's etc.
Portable	Not portable

(b) Write a pseudo code to calculate and display the area of a circle (08 Marks)

```
start
print "Enter a radius:"
input radius
area = radius x radius x 3.1416
output area
Stop
```

(c) Explain five (4) areas of application of information and communication technology (10 Marks)

- **Education and training.** Many Universities, Colleges, school and public libraries are on line with websites for purposes of making easy access to educational information. Education references soft ware e.g. the Infopedia, Encarta, etc
  CAL,CAA
- **Health & Medicine.**ITs are now being used for;

- Medical tests for instance blood, cancer, Brain damage etc
- Carrying out sensitive operations on sensitive body parts like the brain, heart, kidney, etc.
- Drug mixing and prescriptions.

- **Communication.**ITs are also being used for;
  - Units of carriage surveyarance in logistics management.
  - Sending and receiving of messages like sms (E-mail = sms over the internet), and interactive websites.
  - Reservations for units of carriage and hotels.
  - Etc
- **Transport .**
  Computers are used in cars to monitor fluid levels, temperatures and electrical systems. computers are used to control the flow of traffic between airplanes which needs a lot of precision and accuracy to be dealt with.

- **Security and military.** IT Laser guided cameras and satellites are now used for national and domestic security.
  - Information technologies are also used in the military to fly and direct combat planes, locate enemy positions and hit/shell them with minimal civilian and property losses.
- **Manufacturing:** In many large manufacturing and production processes robots are being used to handle tasks, which cannot be efficiently handled by humans. Computer Aided Design (CAD) and CAM (Computer Aided Manufacture)
- **Information plus data storage**. It's has got immense internal and external storage devices for storage of huge volumes Data. Hence the common paperless society e,g cloud storage.

- **Business,E-Business** and **E-commerce** facilitate the buying and selling of goods, services and works on line. Businesses have got websites

- **Entertainment and Leisure.**ITs offers lots of leisure and entertainment activities in form of;
  - Computer games
  - Computer audio music and video players

- **Accounting and Finance.** Software/programs are now available for producing financial reports like income statements, Balance sheets, and cash flow statements. Such application/programs include Pastel, Tally, Sand systems, Excels, etc

28. (a) Explain four reasons why information on an externally linked network is not said to be secure.

(consider all network threats) (08 Marks)

- Malicious threat.Malicious threats include Computer viruses, Trojan, worm and spyware. It is code or software that is particularly intended to damage, steal, disrupt, or as a rule inflict some other "terrible" or illegitimate activity on information, hosts, or network.

- DOS attack.A Denial-of-Service (DOS) attack is an attack intended to close down a machine or network, making it unavailable to its intended users.

- Eavesdropping.Eavesdropping refers to the unauthorized monitoring of other people's communications.

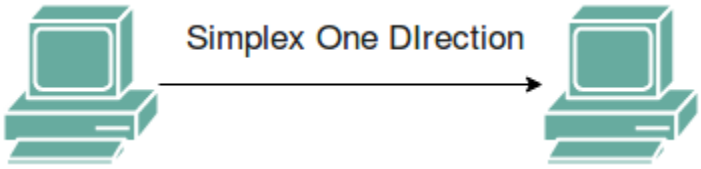
- Data breaches. A data breach is an occurrence in which sensitive, secured or confidential data has potentially been seen, stolen or utilized by an individual unapproved to do as such.

- Phishing. Phishing is the process to gain sensitive information like usernames, passwords and credit card information, frequently for malicious reasons.

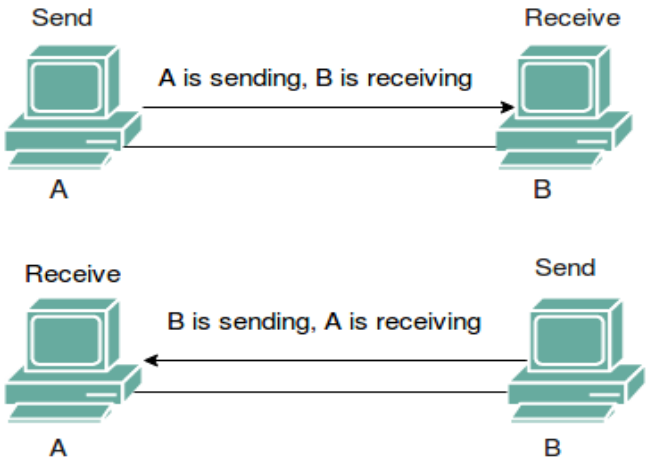
- D-DOS attack. A distributed Denial of Service (DDOS) attack is a challenge to make an online service inaccessible by overpowering it with traffic from numerous sources. Also a student can mention
  Hacking
  Cracking in contest with the question

(b) With illustration explain the three modes of data communication (12 Marks)

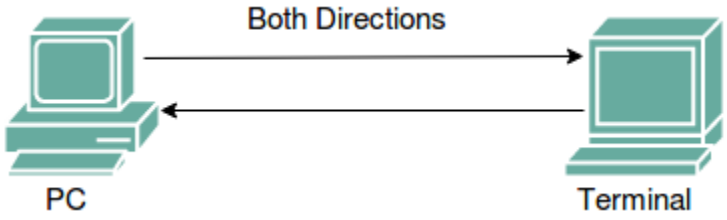
- Simplex Mode
  In Simplex mode, the communication is unidirectional, as on a one-way street. Only one of the two devices on a link can transmit, the other can only receive. Example: Keyboard and traditional monitors. The keyboard can only introduce input, the monitor can only give the output.



- Half-Duplex Mode
  In half-duplex mode, each station can both transmit and receive, but not at the same time. Example: Walkie- talkie in which message is sent one at a time and messages are sent in both the directions.



- Full-Duplex Mode.In full-duplex mode, both stations can transmit and receive simultaneously. Example: Telephone Network in which there is communication between two persons by a telephone line, through which both can talk and listen at the same time.



29 (a) Explain how the following scanning hardware devices operate

(i) Optical character recognition (OCR) (02 Marks)

- *Optical character recognition (OCR) is* a technology that involves reading typewritten, computer-printed, or handwritten characters from ordinary documents and translating the images into a form that the computer can understand.

(ii) Magnetic ink character recognition (MICR) (02 Marks)

- Magnetic-ink character recognition (MICR) reader is used to read text printed with magnetized ink. MICR readers are mainly used by the banking industry for processing checks.

(b) State four safety precautions that should be observed when handling or working with hard disk. (04 Marks)

(Any 4x1=4 Marks)

- Don't expose to magnetic fields
- Avoid shaking it
- Don't expose to extreme temperatures
- Don't drop on hard surfaces
- Opening should be done be qualified persons
- Always back-up! Don't overlook your duty to backup critical data when you are working on a big project or a tight deadline.

- Keep current copies of important data offsite. Store copies of your data in a fireproof safe or in a bank safety deposit box.
- If you must disconnect USB or FireWire peripheral devices while the computer is on, use extreme care.
- Never reformat a hard drive without checking your backup.
- Never move or jar a drive or computer while it is operating. Doing so could cause media damage.
- Allow adequate space around external drives' cooling vents; remove books, papers, etc., which might block airflow.
- Avoid rapid temperature changes.
- All computer equipment should be protected with high-quality surge protectors or line conditioners

(c) List any two factors that should be considered when purchasing an optical storage media (02 Marks)

(Any 2x1=2Marks)

- Storage capacity . The amount of storage space the device has and amount of data to be kept on the device determines the type of optical device to buy.
- Durability of the optical storage device. The duration for which you can use the optical storage device also determines its buying
- The price of the storage device. The price also determines its purchase as those optical storage devices which are expensive may not be bought.
- Access time /Speed of the storage device. The access speeds of the storage device in writing can determine its purchase.
- Compatibility with the system

(d) Explain how you would uninstall any application software from the computer? (10 Marks)

(Any 5x2=10 Marks)

- Open the Control Panel or press the Windows key, type Control Panel, and then press Enter.
- Double-click Add or Remove Programs, Uninstall a program, or Programs and Features depending on your version of Windows.
- Within the new window, select the program you want to uninstall and click the Change, Remove, or Uninstall button.
- Click finish
- Restart your computer.

Or

- Start by clicking on the Windows icon.
- In the right pane, click on Control Panel.
- Under Programs click on the item Uninstall a program.
- Windows then lists all programs that were installed using Windows Installer.
- Select the program you want to uninstall by clicking on it.
- Click at the top on Uninstall/Change.

- In the next message box, confirm the uninstall process by clicking on Yes.
- Windows now starts the uninstall process. After completion you'll receive a status message, which you confirm by selecting OK.
- Restart the computer.

END