

COMPUTER STUDIES

PAPER 1

MARKING SCHEME

1. What is a search engine as used in internet? (2mks)

It is a program that searches documents for specified keyword(s) and returns a list of the documents where the keyword(s) is found. (2mks)

2. Give two features of a user friendly operating system. (2mks)

1. Graphical user interface
2. Forgiveness – allowing the user to recover from an error made.
3. Speed – faster in running applications.
4. Multitasking –enable user to carry out various tasks at once. (2mks)

3. a) Define a computer laboratory (1mk)

It's a special room set aside and prepared specifically for safe installation and use of computers.

- b) State two functions of an UPS (2mks)

- i) provides power temporarily in the event of a blasts
- ii) it regulates power from an unstable source
- iii) allow the user to switch off the computer correctly and save the work
- iv) safeguards the computer against damage

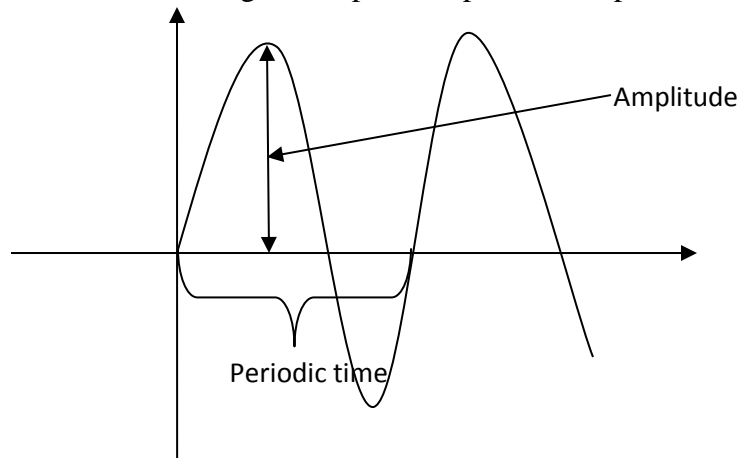
4. List the three areas that would be considered in the requirements specifications during system development. (3mks)

- a) Output of the system
- b) Input of the system
- c) File/data of the system
- d) Hardware and software of the system

5. Discuss two computational errors giving example in each case. (4mks)

- Overflow error – it occurs if the results from a calculation is too large to be stored in the allocated memory eg. If a byte represented using 8 bits, an overflow will occur if the results of the calculation gives an extra bit (1) 00111011.
- Truncation error -when a real number has a long fractional part which is cut off eg. 0.784968 read as 0.98 4.
- Rounding errors

- Is as a result of raising or lowering a digit in a real numbers to the required number of significant figures or decimal places. eg. 30.66 read as 30.7.
6. With the aid of a diagram, explain amplitude and periodic time. (3mks)



Amplitude is the maximum displacement that is formed by an electrical signal (wave)
(1/2 mks)

Periodic time – time taken by a signal to complete a cycle. (1/2mks)

7. State three improvements that were done on the 3rd generation computers. (3mks)
- Were smaller because of use of integrated circuits
 - Produced less heat
 - Higher processing speed
 - Higher storage capacity
 - More reliable
8. a) Explain industrial espionage. (1mk)
- It is spying on a competitor to get information that can be used to cripple the competitor. (2mks)

b) Describe the concept of data encryption
(2mks)

Reconstruction of the original message by mixing it up into a form that only the sender and receiver is able to understand.

9. E-mail users often get unsolicited mail in their inbox. Give the term used to refer to such mails.
Spam mails.

b) Other than congesting the inbox, state any other potential harm that such mail can bring about. (2mks)

a) virus

b) Time wasted reading them could be used to access other important mails.

c) Can be an avenue for online fraud.

10. Distinguish the following terms as used in disk management.

a) Formatting disk and scanning disk. (2mks)

Formatting disk is the process of preparing a new disk by imprinting new sectors and tracks on the surface of the disk so that the OS can recognize and access it while scanning disk is checking and repairing minor drive problems such as lost storage location or damaged surface.

b) Defragmenting a disk and compressing a disk. (2mks)

Defragmenting is arranging scattered files and folders for ease of access while compressing is squeezing files and folders to save on storage space.

11. List four stages involved in the data processing cycle. (2mks)

- i) Data collection
- ii) Data input
- iii) Processing
- iv) Output

12. State two advantages of using biometric devices in voting. (2mks)

- i) Able to capture the voters attributes eg. Finger print and facial recognition.
- ii) Prevent impersonation – one cannot vote using other person's voting card.
- iii) Speed up the search of record
- iv) Entrance data integrity
- v) Security of information (any 2 points)

13. State the extensions used by the operating system for the following types of files. (2mks)

- i) System file - Sys
- ii) Executable file – Exe

14. Convert 110011.0110_2 to decimal notation

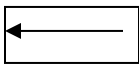
(3mks)

P.V	2^5	2^4	2^3	2^2	2^1	2^0	.	2^{-1}	2^{-2}	2^{-3}	2^{-4}
B.D	1	1	0	0	1	1	.	0	1	1	0
D.V	32	16	0	0	2	1	.	0	0.125	0.0625	0

$$32+16+2+1+0.125+0.0625$$

$$51+0.1875 = 51.1875_{10}$$

15. Name and state the use of the following key on the keyboard. (1mk)



Backspace – used for erasing characters from right to left when typing.

SECTION B

Answer question 16 compulsory and any other three question of this section.

16. a) State two types of selection controls used in high level programming language.
(2mks)

IF.....THEN

IF.....THENELSE

NESTED IF SELECTION

b) A program is required that can be used to input marks of 40 students. The program is supposed to get the sum after every input and compute the average once all the marks have been entered and then display the average.

i) Write a pseudo code for the program.

(5mks)

```
Start      ½ mk

Count= 0   } 1 mk
Sum=0      }

Print “enter marks” M

Read M

Repeat
Sum =Sum+M   } 1 mk
Count = Count + 1 }
Until

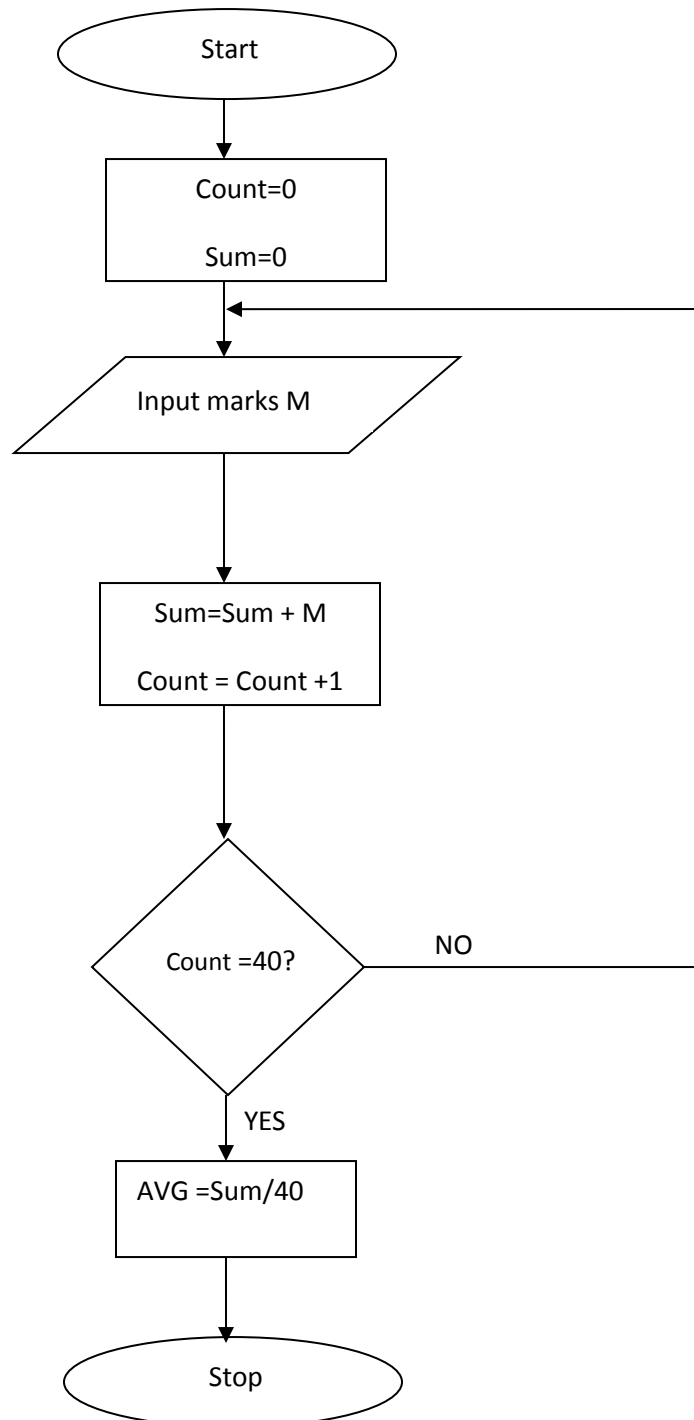
Count = 40

Average = Sum/40   1 mk

Print average

Stop      ½ mkk
```

ii) Design a flow chart



17. a) State and explain two challenges that will come about if a network was to be installed in your school. (4mks)

- i) High initial cost – cost of buying both hardware and SW is high
- ii) Security issues – Data on the network is prone to illegal access threats.
(Access threats.
(Any relevant point)

b) Discuss two disadvantages of wireless networks

- i) Discuss two disadvantages of wireless Networks
- ii) Discuss to establish or configure
- iii) Initial cost is very high
- iv) Highly prone to crime eg. Taping, spy, cracking etc.

c) Write the following abbreviations in full. (2mks)

- i) F.T.P – file transfer protocol
- ii) H.T.T.P – Hyper text transfer protocol

d) With the aid of a diagram discuss Hybrid topology.

- A well labeled diagram of a tree topology (3mks)
- Discuss one advantage of a client/server network
- Easier to access file and other resources easily because they are all available on the server computer. (2mks)
- Easy to troubleshoot

18. a) Explain open learning. (1mk)

This is where learning materials and lectures are made available online over the internet.

iii) Computers are used to enhance marketing in a variety of ways, one of which is e-business. Explain how computers are used in e-business. (2mks)

- i) Advertisement.
- ii) Buying of goods and services
- iii) Accessing variety of goods

b) Explain two benefits which an organization may enjoy after automating their production system. (4mks)

- i) High quality services to the customers
- ii) High quality products because machines are more efficient
- iii) Cost effectiveness as automated system offer efficient use of resources.

c) Discuss one way computers can be used in science and research. (2mks)

- i) Weather forecasting – making weather predictions more accurate and reliable.
- ii) Medical research for diagnosis, keeping patients' record. Inventory control.
- iii) Military and space exploration science – computers are used to make research design, development and control of unmanned space ships

d) State three roles of

i) computer engineer

ii) Design, develop and test computer components

- Examines computer components and determines the power requirement of the components.
- Refurbishing existing computer components to enhance their performance.
- Design and develop computerized machines such as robots
- Computer trainer
- Trains people on different computer aspects.
- Prepares learners for examinations
- Advises learners on the available career opportunity

19. A) In relation to computer memory capacity, distinguish between a bit and a byte. (2mks)

- A bit is a binary digit which can be a "0" or "1" that forms the basic unit of a data or information in a digital computer while a byte is a group of 8 bits used to represent a single character.

iii) Discuss two types of special memories found in a computer system. (4mks)

- a) Register – holds one piece of data at a time and are found in the C.P.U.
- b) Buffers – special memories found in the input/output devices.
- c) Cache – fast type of special memories found in the processor that helps to speed up the processing.

b) List any four factors that a buyer should consider before buying computer hardware. (4mks)

- i) processor speed and type
- ii) portability
- iii) warranty given and its scope

iv) user needs

v) multimedia capability

d) State and explain any two examples of system soft wares. (4mks)

i) Operating

ii) Networking (explain any two @ 2 mks)

iii) Utility software

iv) Firmware

d) State one reason why a DVD is preferred for storage over a CD. (1mk)

i) Higher memory capacity

ii) Quality output

20. A) Name and explain four text alignment distributed on the left margin and unevenly distributed on the right margin.

Right alignment – lines of text are evenly distributed on the right margin and unevenly distributed on the left margin.

Center alignment – lines of text are unevenly distributed on both right and left margin

Justification – lines of text are arranged evenly along the left and right margin.

b) Name and explain two paper orientation in word processor. (2mks)

Portrait

Landscape

c) List three arithmetic operations that can be performed on a row of numeric data in a word processing table. (3mks)

- Sum

- Average

- Minimum

- Maximum

d) Name four types of action queries (2mks)

- make table query

Append query

Delete query

Update query

e) State and explain two categories of data base controls. (4mks)

- Bound control – a type of control whose source data is a field from a table or query.

Unbound – a type of control that is not connected to any data source.

Calculated control – a type of control used to create a calculated field. Its source can either be a bound or an unbound control.