

1. **Areas of application for internet \*Nrk\***
  - Aviation industry
  - Research institutions
  - Learning institutions like universities
  - Banking industry
2. **Difference between RAM and ROM\*Nrk\***
  - RAM stores application software while the computer program is running, while ROM stores both application and system software
  - RAM is temporary storage while ROM is permanent storage
3. **Formatting a diskette\*Nrk\***

This is the process of preparing a diskette for use
4. **Benefits of structured programming\*Nrk\***

Reusability of code/ modules  
Extensibility
5. i)  $101010 + 1001 = 110011$   
ii)  $10111000 + 111011 = 11110011$   
iii)  $100111 + 100111 = 001110$  overflow 1
6. a) **Reasons why wide area network are operated on broadband mode\*Nrk\***
  - Wide area network are expensive to install
  - They are expensive to maintain
  - Can allow multiple data streams to keep down costs
  - Many channels needed to cope with high volume of trafficb) **Relationship between bit rate and bandwidth\*Nrk\***
  - The greater the bandwidth the greater the rate at which data can be sent
  - Bit rate increases as bandwidth increases
  - Bit rate is directly proportional to bandwidth.
7.  $96 = 01100000_2$ \*Nrk\*  
 $56 = 00111000_2$   
1<sup>st</sup> complement for 56 = 11000111  
2<sup>nd</sup> complement for 56 = 11001000  
 $01100000 + 11001000 = 40_{10}$
8. **Difference between absolute cell referencing and relative cell referencing**

Absolute cell referencing is fixed while relative cell referencing changes as the formulae is dragged. \*Nrk\*
9. 17\*Nrk\*
10. **Data security is ensuring that data is held with confidentiality without access by unauthorized users**

Measures\*Nrk\*

  - Use passwords
  - Physical locks on drives
  - Security guards
  - Physical locks on entrance
11. a) **Type of scanners\*Nrk\***
  - Handheld scanners
  - Flatbed scanners
  - Drum scanners

- Transparency scanners
- b) Advantages of impact printers over non- impact printers\*Nrk\***
- Impact printers are cheaper than non- impact
  - Impact printer do not require special paper as some non- impact printers do
  - Impact printers have multiple copy facilities but some non- impact printers
12. **a) Definition of a key\*Nrk\***
- The primary key of a relational table uniquely identifies each record in the table. It can either be a normal attribute that is guaranteed to be unique(such as Social Security Number in a table with no more than one record per person) or it can be generated by the DBMS (such as a globally unique identifier , or GUID, in Microsoft SQL Server
- b) Examples of data types used in database\*Nrk\***
- Text
  - Number
  - Date/ Time
  - Memo
  - Currency
  - Logical
13. **Computer data processing method\*Nrk\***
- Online processing : a type of processing where the result of data processing is available immediately. Used in electronic money transfer in banks
  - Batch processing : transaction are accumulated over a period of time and then processed at a specified time to produce a batch output. Used in telephone bills and payroll preparations.
  - Time sharing processing in which the central processor serves two or more users with different processing tasks i.e. central computer is available to a variety of users, connected to the central computer via communication links . Used in ATMs
  - Real time processing: Data processing system in which the time interval required to process and respond to inputs is so small that the response itself for controlling the physical activity of a process .Used in ATMs.
14. **a) Variable and constant\*Nrk\***  
A variable is a memory location for holding data which changes while a constant is a memory location holding data which does not change
- b) An array and a record \*Nrk\***  
An array item is a collection of data type of the same type while a record has data items of either same type or of different data type
15. **a) Stages involved in data processing cycle**
- Data collection
  - Data entry / inputting
  - Data processing
  - Outputting and storing
- b) Difference between source program and object program\*Nrk\***  
Source program (source code) is a written program using an editor which has not been transformed into machine language through compiling , while an object program is a program that has been compiled and has been transformed into a machine language
- SECTION B\*Nrk\***
16. a)i) Object – oriented programming language is the programming language which uses objects in the program development

ii) **Benefits of OOP\*Nrk\***

- It is easy to implement
- It supports expandability through inheritance
- It is easy to maintain
- Enhanced data security through data abstraction

b) **Definition of an algorithm\*Nrk\***

- It is a set of sequence of instructions / code showing how the program tasks will executed
- Or is a procedure that is used to process the data contained in the containers . (Modules)

16. c. i) **Low level and High level language\*Nrk\***

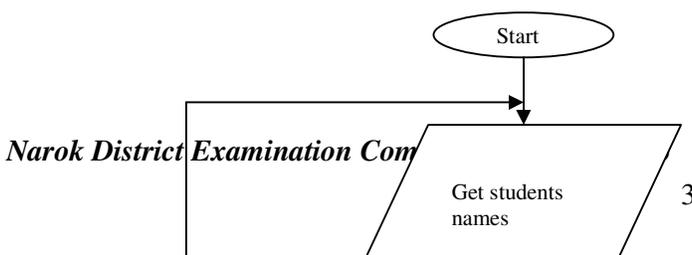
**Differentiate;**

Low level programming language and high level programming language.

- **Low level programming language:** This is a programming language where instructions are written in machine language and assembly language
  - High level programming language is a programming language where instructions are written in English like words. Examples of high level programming languages is like cobol, Basic e.t.c.
- ii) **Assembler:** This is a program that takes basic computer instructions and converts them into a form a computer can understand.

**Compiler:** Is a special program that processes statements written in a particular language and turns them into machine language.

16. d) **Flow chart**



**17. Modular**

- A method in which long programs are divided into smaller programmes or modules that can be designed, coded and debugged separately with a minimum amount of interaction.

**Top – down design**

- Here the overall task is first designed in terms of generalized subtasks that in turn are subsequently further defined . The process continues downward until the subtasks are defined in a form suitable for execution by the computer.
- ii) Benefits of using binary numbers complementation
  - Everything that can be done with a base 10 can be done in binary.
  - Computer only identifies signals in the form of digital pulses, which represents either high voltage or hot state “ (ON”) or low voltage of cold state a”OFF” (0)
  - Computer circuits have to handle only 2 binary digits or bits rather than 10 used decimal numbering system. This implies that the design of the circuits, reduces the cost and improves reliability
  - Because a computer digital circuits can only understand translations of two state of signals i.e 0 (OFF) and 1 (ON)

**iii) Advantages of computers**

- Speed
- Accuracy
- Reliability
- Storage
- Versatile
- Automatic

**iv) Application of CAM in our society today**

- Used in designing in the manufacturing industries
- Used in estimation of the cost
- The designs are used to determine a component’s shape

**c. i) Cell.**

- It is an intersection between a row and column

ii) Work book

- A work book is a file which holds together a collection of worksheets. It is usually has several worksheets linked together and often convenient to summarize the data on these worksheets in the form of associated charts or graphs

iii) Work sheet

- Worksheet is Excel’s name for a spread sheet. Worksheets are arrays of cells used to store data. This often involves simple arithmetical calculations linking the cells together in tables, usually for some kind of analysis

**18. ai) Shortcoming of the parallel change over**

- It is costly method because of the amount of duplication involved employment of extra staff or overworking for existing staff.

**ii) Gains of parallel system change over.**

- It’s use does management the facility of fully testing the new system whilst still retaining the existing system
- The outputs from old and new systems are easy to reconcile where the system are similar

**b). Advantages of using database files over convectional file**

- Data redundancy is minimized
- Data can be stored in a manner that is useful for a wide variety of applications
- Updating involves only one copy of the data
- The systems can handle requests that previously may have spanned several departments

**c) Ms- Access data types**

- Text
- Number
- Currency
- Memo
- Logical
- Date / Time

**d) Types of networks**

- LAN (Local Area Network) it is a communication network that provide interconnection of a variety of data communication devices within a small area. Or is a type of network where interconnection of computer cover a limited geographical distance usually located in a site or a single building

**Characteristics**

- Covers limited geographical area
  - Involves low cost of transmission
  - Have high data transmission rates
  - Computers are linked through special cables
  - There is often a server computer
- WAN (Wide area network) is where computer interconnection is spread over larger geographical areas. Or is used for communication of computers over remote areas.

**Characteristics**

- Covers a large or wide geographical area
- Involves high transmission cost
- Requires a modem

**19. a.i) Fatal effects of virus attacks**

- Hanging of the computer
- Rebooting of the computer
- Overwriting the disk
- Corrupting the files in the disks
- Formatting the disks

**b) Source of computer virus**

- Pirate software
- Fake computers games
- Use of computer network
- Freeware and share ware from one computer to another
- An employee of an organization introducing such bugs knowingly

**c) Area changed for better by growth in IT**

- Business areas: Fast sending and receiving information  
Employment of many people
- Education : Research has improved through the use of electronics books
- Finance : Banks are able to transact their accounts throughout the country  
Record keeping

**d) a). Causes of data and program loss in a computer**

- Computer virus
- Human error
- Poor storage and handling of storage media

**20. a) Operating system**

It is a software that controls and coordinates the actions of the different parts of a computer

**b) Difference between Single user and multi- user system**

The single user operating system can only support one users at a time e.g. Ms- Dos.

Multi – user operating system can be able to support more than one user and program at the same time e.g Windows 95

**c) Function of operating system**

- Resources control. The operating system allocate the use of computer resources such as CPU, Input and Output devices
- Job scheduling . It controls programs schedule, controls and monitors the programs submitted for execution
- Provision of error correction routines
- Passing of control from one job to another under system priority when more than one application program occupies main storage

- Calling into main memory stored programs and subroutines when required
- d) Examples of an operating system
  - Windows 95 / 98 / 2000 / NT / XP
  - UNIX**
  - NOVELL**
- e) **Types of computer buses and their function**

A computer bus consists of wires connecting a processor to another device .It is a communication medium within the computer that allows different elements of a computer to communicates with one another

**Address bus:** These are unidirectional buses from the processor to external devices

**Data bus:** These are bi- directional buses that carry information and data from the processor

**Control Bus:** are unidirectional buses that carry command signals from the processor .