

**COMPUTER STUDIES (THEORY)**

1. a) Data can be read (retrieved) and written (stored) in it ✓ 1 \*NDI\*
- RAM is temporary (volatile) storage because its contents disappear when the computer is switched off ✓ 1 \*NDI\*
  - Its content is user defined i.e. the user dictates what is to be contained in the RAM ✓ 1 \*NDI\*
- b) Static RAM is very fast, holds its contents as long as there is power whereas dynamic RAM is slower and holds its content for a short while even when power is on hence it requires refreshing (automatic rewriting) severally per second ✓ 1 \*NDI\*
2. A plotter ✓ 1 \*NDI\*
- Because plotters specializes in producing big charts such as maps, pictures and drawings and mostly for printing geographical, architectural and engineering drawings such as maps which the company needs to produce
3. Multi User \*NDI\*
- UNIX, LINUX, NOVEL, WINDOWS 9X/NT/2000/XP, MAC OS, OS/2 (any 2) ✓ 2
- Single user MS DOS ✓ 1 \*NDI\*
4. a) Because they allow the user to record data on them once but read the data as often as necessary ✓ 1
- b) Back space - Used to erase character from right to left or use to erase a character that has just been typed ✓ 1
- c) Delete:-Used to erase character from left to right OR used to delete the text or any part thereof ✓ 1
- d) Space bar:- used to create space between words or character ✓ 1 \*NDI\*
- 5 (a) A Spreadsheet is essentially ledger sheet that lets one enter, edit and manipulate numeric data ✓ 1
- (b) Uses of spread sheets \*NDI\*
- Statistical analysis e.g average, mean, median e.t.c
  - Accounting – calculate profits, prepare budgets calculate depreciation and appreciation e.t.c
  - Data management e.g. sorting, filtering, print e.t.c
  - Forecasting (“what if” analysis) (any 3 logical answer) \*NDI\*
- 6 a) Hardware
- Processor type and speed
  - Memory capacity
  - Secondary storage
  - Warranty
  - Expansion and upgrades
  - User needs
  - Cost
  - Compatibility
  - Service and support
  - Clones
- } any two stated, ½ mark each  
} good explanation ½ mark each
- b) Software \*NDI\*
- Authenticity
  - Reability
  - User needs
  - User friendliness
  - System requirements
  - Cost
  - Compatibility
  - Portability
  - Documentation
  - Training
  - upgrades
- } Any two stated ✓ ½ mark each  
} Good explanation ✓ ½ mark each

7. a) Used in data representation especially ✓ 1 in ASCII code representation of data \*NDI\*  
 b)  $94 B_{16} = 2379_{10}$  ✓ 1 must show the base if not –  $\frac{1}{2}$  \*NDI\*
8. Eaves dropping is intercepting of conversation by unauthorized recipient, deletion or insertion OR integrity violation through wire tapping ✓ any 1mk\*NDI\*

Fire walls are computer hardware and /or software that help to filter the information that is being communicated ✓ 1

9. An information systems is a set of people, \*NDI\*  
 a) procedures and resources that collect transforms and disseminates information in an organization ✓ 1

- b) - When and organization has ✓ 1 several branches \*NDI\*
- When an organization has many employees
  - When the system analyst/system development committee is too busy to carry out interviews

10. (i) when the person inputting the data is ✓ 1 handicapped e.g. has impaired hands \*NDI\*  
 (ii) When the person inputting the data has no data input skills using other devices such as keyboard and mouse

11. Administrative \*NDI\*

- Job rotation
- Forced vacation
- Accessed information should be granted on need to know basis and not on rank basis
- Enhance accountability within the organization
- Have division of labour and segregation of duties
- Select your personnel competitively i.e. know your employees (any two 2)

- Logical Access Control \*NDI\*

- Use of password ✓ 2
- Use of user name ✓

12. - Consult with managerial, Administrative and technical staff to determine information needs data flows and system definitions \*NDI\*
- Monitor systems to optimize performance perform back up and initiate recovery action in the case of system failure
  - Co-ordinate system updates
  - Provide assistance in testing new equipment and systems
  - Co-ordinates support work and training in system use and access (any two 2)

13. These are moral principles and values that govern the action and decisions of an individual or group ✓ 1  
 \*NDI\*

14. Base band signal \*NDI\*

Is a digital signal that is generated and applied to the transmission medium directly without modulation ✓ 1

Broad band transmission

Is transmission where an analogue signal is sent over the transmission medium using a particular frequency ✓ 1

15. a) Is the process of generating personalised letters or documents by combining a main document with existing data source ✓ 1

- b) This is the feature that automatically moves a word or cursor to the beginning of the next line if it does not fit at the end of the current line

16. a) It enables programmers to design packaged and manipulative programs which are able to run on many different types of computer ✓ 1

b) Using pseudo code \*NDI\*

START

REPEAT

PRINT " Enter name and subject marks"

✓ 1 INPUT Name, Mathematics, English, Kiswahili, Biology, Chemistry, Business studies, Computer studies History

✓ 1 SUM = Mathematics + English + Kiswahili + Biology + Chemistry + Business Studies + History

AVG =  $\frac{\text{sum}}{8}$

If (AVG  $\geq$  80) And (AVG  $\leq$  100) THEN Grade = 'A'

✓ 1 ELSE

If (AVG  $\geq$  70) and (AVG  $\leq$  79) THEN Grades = 'B'

✓ 1 ELSE

If (AVG  $\geq$  60) and (AVG  $\leq$  69) THEN Grade = 'C'

✓ 1 ELSE

if (AVG  $\geq$  50) and (AVG  $\leq$  59) THEN Grade = 'D'

✓ 1 ELSE

Grade = 'E'

Total (7 mks)

END IF

END IF

END IF

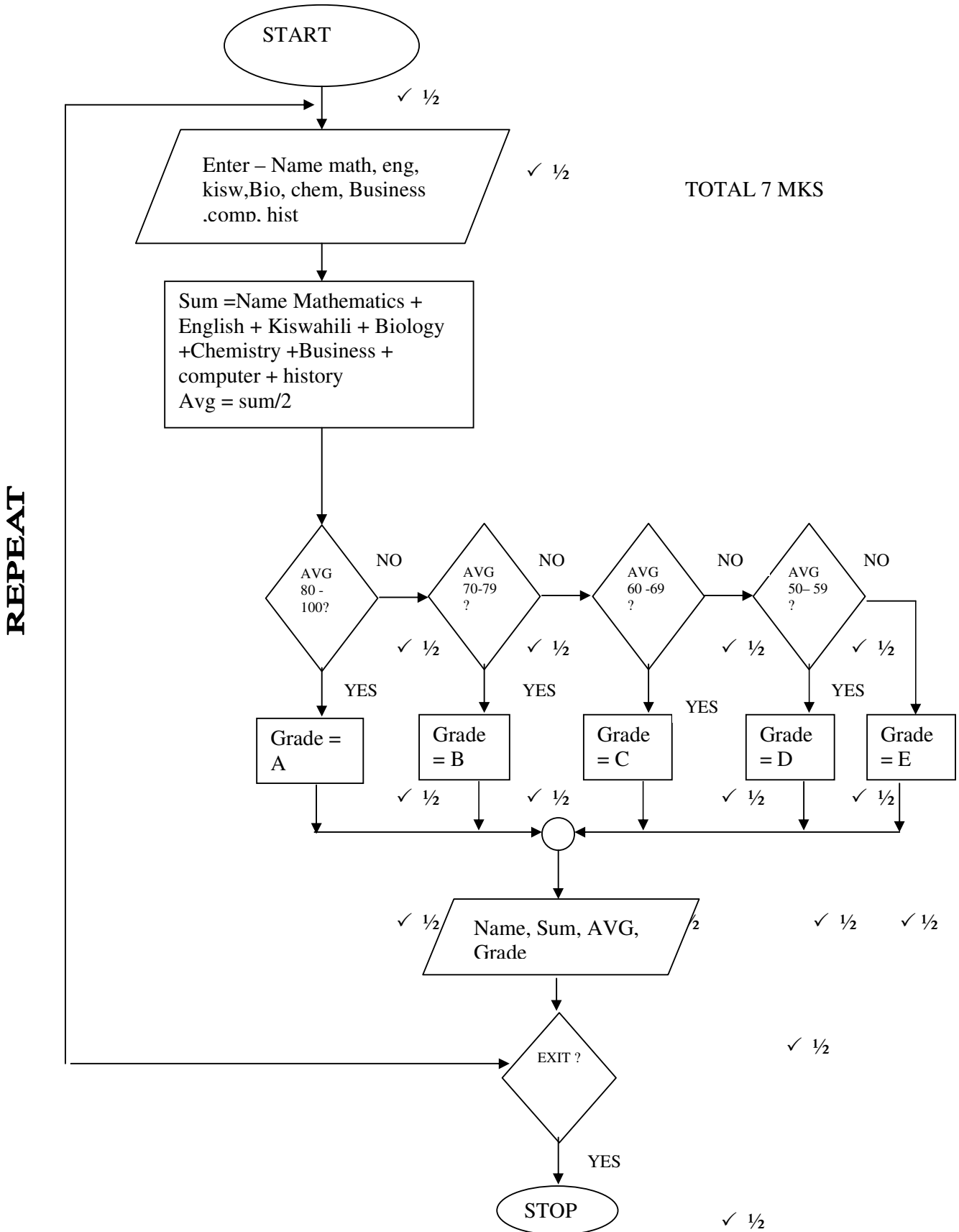
END IF ✓ ½

PRINT name, sum, AVG, ✓ ½

Grade UNTIL Count = Number of students

Stop

Using a flow chart \*NDI\*



17. A) These are receive/transmit terminals installed at dispersed sites connecting to a central hub via satellite using small diameter antenna dishes (0.6 to 3.8 meter) ✓ 1

OR

It is a telecommunications technology that uses geosynchronous satellites as relays for point to point, point to multipoint or broadcast communications

- b) - It is cheaper than other methods since it is distant independent  
- They are able to track information from anywhere by picking a signal and transmitting it or receiving it (suitable for remote places)  
- They have low maintenance costs and management costs  
- are not affected by outages, construction projects, falling trees e.t.c. which are a major problem with other media any 3
- c) A Collection of independent ✓1 Entities that are arranged in such a manner as to exchange data, information or resources

OR

It is connecting two or more computers and other communication devices for purposes of communication

- d) **Advantages**
- Resources sharing
  - Remote communication
  - Distributed processing capability
  - Cost effective
  - Reliable
- ✓ 3 any three

- Disadvantages**
- Security issues
  - High initial costs
  - Moral and cultural effects
  - Spread of terrorism and drug trafficking
  - Over reliance on network
- any 2

- e). Is the simulation of visualization of a real life situation using computer modeling techniques ✓ 2

- f) - Window on world system (WoW)  
- Video mapping  
- Immersive systems  
- Telepresence
- ✓ 2 any two

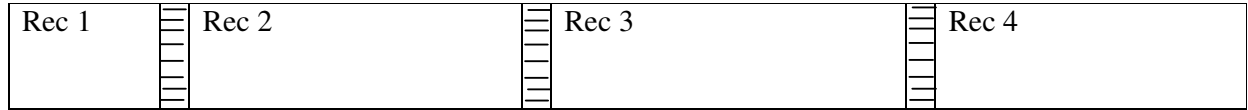
18. a) a logical file is a type of file viewed in terms of what data items it contains and of what processing operation may be performed on the data items while a physical file is one that is viewed in terms of how data items while a physical file is one that is viewed in terms of how data is stored on a storage media and how processing operations are made possible ✓ 2 \*NDI\*

- b) (i) For easier updating of the master file (removes back – tracking) \*NDI\*  
(ii) For faster retrieval of relevant information \*NDI\*  
(ii) For easier comparison of the two file \*NDI\*
- any two (2)

- c) (i) Serial \*NDI\*

This is a mode of data organization where records are put into the backing store e.g. magnetic tape as they arrive, following one another i.e. first come first stored basis. It does not have regard of sequence \*NDI\* ✓ 1 correct explanation

✓ 1

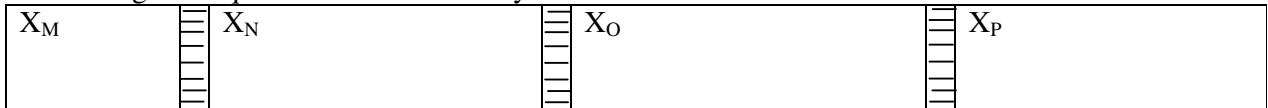


(correct diagram ✓ 1)

The records denoted Rec 1, Rec 2, Rec 3 and Rec 4 are stored one after the other according to how they arrived at the magnetic tape. They are separated from one another by neted spaces called inter record gaps (IRG)

(ii) Sequential \*NDI\*

Records are placed into the backing store e.g. magnetic tapes with regard to a certain sequence according to unique identifiers called key fields ✓ 1

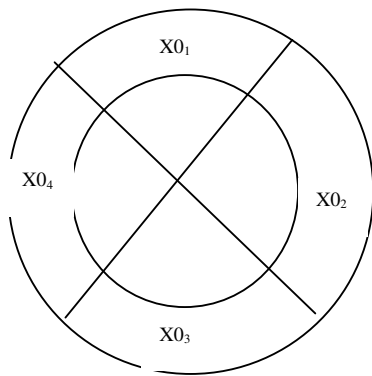


(correct diagram ✓ 1)

X – indicates serial organization m,n,o,p, are unique identifies

(iii) index sequential \*NDI\*

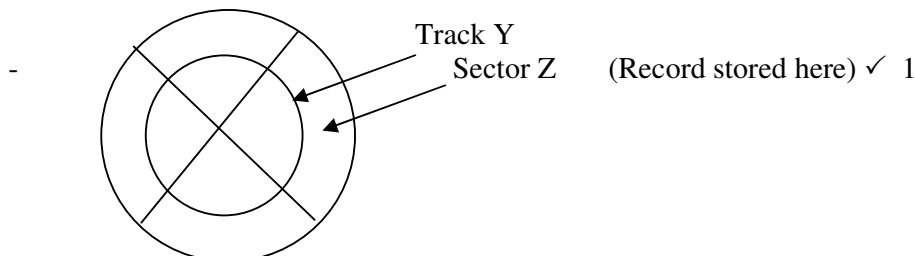
Records are organized following a sequence and then an index, which can be got using a mathematical approach is assigned to individual records. It is used in disk



Denotion 01, 02,03, 04 e.t.c indicates the individual record index ✓ 1

Iv Random \*NDI\*

- it is employed on disks ✓ 1
- records are organized randomly
- record location is achieved through mathematical approach
- records are not related



d) If the system being developed is on rapid application development (RAD) basis

- When there is no ready work force no programmes at the reach of the organization
- When the budgeted cost of development cannot be put up with by the organization
- When development time exceeds the planned would - be- time to acquire the package (any ✓3)

19 e- banking is the use of computerised systems in processing of customer transaction, cheque clearance and processing, electronic funds transfer and other related activities ✓ 1

e- learning is a process where lessons and lectures are presented from a central site and the presentation is transmitted to remote conference terminals or displayed on TV screens, or even through the internet \*NDI\*

**b) Advantages \*NDI\***

- Individual learners gain access to world – class educational resources without traveling or taking excessive time away from work and home
- The institution gets a new channel and revenue sources from students who might otherwise be unable to take advantage of their offerings
- The institution is equipped with a new capability by which to raise the quality of life their students
- The institution plays a better role in enabling basic skills development and offering the retaining that can provide a more qualified and adaptive labour market
- Student understanding and retention improve when student learn by experience
- Introduction of technologies such as interactivity modeling, simulation, virtual reality interfaces, and gaming will help student experience the skill being taught (any 3 any other logical answer)

**Disadvantages \*NDI\***

- High initial cost
  - Moral corruption e.g. by students visiting pornographic sites ✓ 2 \*NDI\*
- c) (i) Joystick – an input device used for playing games ✓ 1 \*NDI\*
- Flatted scanner:- an input device used to scan text, real objects or pictures. These are captured and converted to electrical signals for storage ✓ 1
- (ii) Biometric analysis:- is the study measurement and analysis of human biological characteristics for identification e.g. finger prints, voice, lips, facial features like Iris colour e.t.c ✓ 1
- Telecommuting:- home working or use of computerized system to work ones home these systems (at work place are linked to the office ✓ 1
- d) - Using my computer icon display the explorer window \*NDI\*
- on the edit menu click copy
  - select the drive or folder where you want the item to be copied
  - from the edit menu click paste. Information or item is pasted to a new location

(4 check of order of occurrences)

20. (a) An internet tool /facility used for navigating and locating sites in the internet e.g.

Google.com, Yahoo.com e.t.c. ✓ 1 \*NDI\*

- b) Serial port:- an interface that sends or receives the bits comprising each character code one at a time e.g. RS 232 C ✓ 1 \*NDI\*
  - parallel port:- An interface that sends the set of bits for each character all at once e.g. SCSI (Small Computer standard interface) ✓ 1
- c) Job scheduling \*NDI\*
- Resource Management (Allocation and control)
  - Input/output handling
  - Error notification and correction
  - Interrupt handling
  - Job sequencing
  - Memory management

any 5 with proper explanation(5)  
½ each for no or wrong  
explanation

d) - sort \*NDI\*

- Merge
- Editors
- Antivirus
- Zip

✓ 2 any 2

e) (i) make sure no cables are plugged to the mains \*NDI\*

- Switch off main supply switches
- Avoid doubtful connections
- Avoid forcing devices into their slots

- Avoid shorting (bringing into contact two or more conductors of electricity)  
(✓ 2 any two + any other logical point)
- (ii) - Minimal data redundancy\**NDI*\*
  - Data consistency
  - Data integration
  - Data sharing
  - Standards enforcements
  - Ease of application development
  - Uniform security and integrity control
  - Data independence
  - Reduced program maintenance
  - Provision of a host language interface utility  
(✓ 3 any 3 logical answers)



**c) BONDO DISTRICT FORM FOUR JOINT MOCKS**

**TYPED BY: EMILY INDIAZI**

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