

451/2
COMPUTER STUDIES
(PRACTICAL)
Paper 2
July/August 2009
2 ½ Hours

NANDI CENTRAL JOINT EVALUATION TEST - 2009
Kenya Certificate of Secondary Education (K.C.S.E)

451/2
COMPUTER STUDIES
Paper 2
(PRACTICAL)
July/August 2009
2 ½ Hours

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided above
- Sign and write date of examination in the spaces provided above
- This paper consists of two sections?: A
- Password **should not be used** while saving in the diskettes
- Answer **ALL** questions
- **ALL** questions carry equal marks
- All answers **MUST** be saved in your diskette
- Make a printout of the answers on the answer sheets provided
- Hand in all **printouts** and the **diskette**

This paper consists of 4 Printed pages.

Download lots of Free KCSE MOCK PAST PAPERS @ www.kcse-online.info

1. (a) Using a word processing package, type the passage below as it appears and save it as

A:\Multi 1

(30mks)

Multiplexing

Multiplexing is a technique that enables broadband media to support multiple data channels. Multiplexing makes sense under a number of circumstances:

✓ *When media bandwidth is costly.* A high-speed leased line, such as a T1 or T3, is expensive to lease. If the leased line has sufficient bandwidth, multiplexing can enable the same line to carry mainframe, LAN, voice, video conferencing, and various other data types.

✓ *When bandwidth is idle.* Many organizations have installed fiber-optic cable that is used to only partial capacity. With the proper equipment, a single fiber can support hundreds of megabits—or even a gigabit or more—of data per second

✓ *When large amounts of data must be transmitted through low capacity channels.* Multiplexing techniques can divide the original data stream into several lower bandwidth channels, each of which can be transmitted through a lower-capacity medium. The signals then can be recombined at the receiving end.

M

ultiplexing refers to combining multiple data channels for transmission on a common medium. *Demultiplexing* refers to recovering the original separate channels from a multiplexed signal. Multiplexing and demultiplexing are performed by a multiplexer (also called a mux), which usually has both capabilities.

F

requency Division Multiplexing

This technique works by converting all data channels to analog form. Each analog signal can be modulated by a separate frequency (called a “carrier frequency”) that makes it possible to recover that signal. During the demultiplexing process. At the receiving end, the demultiplexer can select the desired carrier signal and use it to extract the data signal for that channel.

FDM can be used in broadband LANs. (A standard for Ethernet also exists.) One advantage of FDM is that it supports bidirectional signaling on the same cable. That is, a frequency can originate from both ends of the transmission media at once.

Time-Division Multiplexing

Time-division multiplexing (TDM) divides a channel into time slots that are allocated to the data streams to be transmitted, If the sender and receiver agree on the time-slot assignments, the receiver can easily recover and reconstruct the original data streams. TDM transmits the multiplexed signal in base band mode. Interestingly, this process makes it possible to multiplex a TDM signal as one of the data channels on an FDM system. Conventional TDM equipment utilizes fixed time divisions and allocates time to a channel, regardless of that channel's level of activity.

If a channel isn't busy, its time slot isn't being fully utilized. Because the time divisions are programmed into the configurations of the multiplexers, this technique is often referred to as synchronous TDM. If using the capacity of the data medium more efficiently is important, a more sophisticated technique, Statistical time-division multiplexing (StatTDM), can be used. A stat-mux uses the time-slot technique but allocates time slots based on the traffic demand on the individual channels, and that Channel C is allocated the fewest time slots. Channel D is idle, so no slots are allocated to it. To make this procedure work, the data transmitted for each time slot includes a control field that identifies the channel to which the data in the time slot should be assigned.

- (b) (i) Spell check the document. (2mks)
(ii) Indent the paragraph starting with "If a channel isn't busy, it's" (2mks)
- (c) Insert page numbering at the bottom center of each page (2mks)
- (d) Copy the paragraph in a table to a new document change the page orientation to landscape (3mks)
- (e) Insert a header "Multiplexers" and footer with your name save it as A:\Multi2 (3mks)
- (f) Open Multi 1 and Copy the paragraph starting with "Frequency Division ..." to be the first paragraph save it as Multi3 (2mks)
- (g) Print Multi 1, Multi2 and Multi3 (6mks)

2. Green Company is a company dealing with the collection and payment of tea farmers. Assuming you are working for the Company and you have been given the following data

Zone	Farmer's No	Name	Green leaves delivered in (Kg)	Gross Pay	Transport Cost	Co-op Deductions	Net Pay
A	142	William Kiyapi	1253				
B	143	Festus Gichui	2563				
B	144	Mirui Maye	4523				
B	145	Kirwa Keter	1023				
A	146	Benjamin Sego	8563				
C	148	Sheila Bungei	4123				
C	149	Nancy Maru	5236				
A	150	Kariuki Thige	8963				
C	151	Polycap Onyango	12356				

- a) Enter the data shown above into a spreadsheet giving it an appropriate title (centered) and save the workbook as Mock 1. And rename the worksheet as Entries (10mks)
- b) Copy the data to a new worksheet and enter details of farmer Mike Rua of Zone A No 147 with green leaf 4, 5632 Kg was left out insert the details in the appropriate row. (1mk)
- c) Insert borders after every cell and every row. (2mks)
- d) Use a function to calculate the gross pay for Farmer No 142 given that the price of green leaves is Sh.14.00 per kg (3mks)
- e) Copy the formula for gross pay across the column to calculate the gross pay for all the farmers (2mks)
- f) Use if function to Calculate transport cost for all farmers given that transport is charged per Kg as follows (5mks)

Zone	Price per Kg
A	1.00
B	1.50
C	2.00

- g) Insert the value 20% in cell E14. Using absolute cell referencing calculate co-op deductions given that the co-op deduction is 20% of the cost. (4mks)
- h) Using a function calculate the net pay given that Net pay is Gross pay — Transport cost and co-op deductions. (4mks)
- i) Format the columns containing currency values to currency with 2 decimal places and prefix Ksh. Rename the worksheet net pay and save it as Mock 2 (3mks)
- j) Arrange the records are ascending order of the zone (2mks)
- k) Use subtotals function to calculate subtotals for green leaves delivered, gross pay and net pay fro each zone. (3mks)
- l) Create an embedded pie chart showing the total Green leaf for each zone the chart should have the following details save it as Mock 3 (5mks)
- a. Chart title Zone Total Gran leaf
- b. Legend Position Right
- m) Print Mock 1, Mock 2, and Mock 3 in landscape orientation. (6mks)