Name……………………………………………………………………………… Class…………………………………………

Index No. …………………………………………………………………………. Date……………………………….

Signature …………………………..

451/1
COMPUTER STUDIES
Paper 1
(Theory)
NOVEMBER/DECEMBER 2021
2½ hours.

@West practice papers-2021

COMPUTER STUDIES
Paper 1
(Theory)
NOVEMBER/DECEMBER 2021
2½ hours.

INSTRUCTIONS TO CANDIDATES
This paper has **TWO** sections; **A** and **B**.
Answer **ALL** the questions in section **A**
Answer **question 16** and any other **three** questions from section **B.**
All answers should be written in the spaces provided on the question paper.

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SECTION	QUESTIONS	SCORE
A	1-15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL	

This paper consists of 16 **printed pages**
Candidates should check the question paper to ensure that all the printed pages are printed as indicated and no questions are missing.

Section A

Answer all questions from this section

1. State 2 measures to put in place in the computer lab to safeguard users health 2marks

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2. Distinguish between embedded and dedicated computers   2marks

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3. State 2 limitations of entering data into a computer system using a touch sensitive input device   2marks

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4. (a) Differentiate between dynamic and static RAM   2marks

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   (b) Define Solid-state storage and give two examples.   2marks

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5. State 3 ways in which barcode readers may be used in schools   3marks

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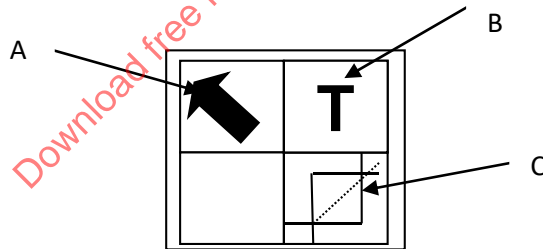
6. State 3 circumstances under which voice input would be preferred over other methods of

   data capture   3marks

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7. In relation to DTP state the purpose of frames   1mark

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8. The figure shows toolbar for a DTP package

   State functions of tools labeled   3marks

   A………………………………………………………………………………………………..

   B………………………………………………………………………………………………..

   C…………………………………………………………………………………………………

9. Describe the following   2marks
    a. Master file

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    b. Transaction file

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10. State any 3 benefits that a company would gain from distributed processing as their data
    processing method   3marks

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11. State two
    a. Functions of an email software   1mark

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    b. Protocols used in sending and receiving emails   1mark

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12. A school has been advised to employ a database administrator state 3 responsibilities of this personnel in the school   3marks

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13. What is the difference between a Gas Plasma Display and Liquid Crystal Display 2marks

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14. (a) Explain how a pixel affects the resolution of a monitor.   1mark

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 (b) List two types of computer output on microform (COM).   2marks

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© Differentiate between *high definition multimedia interface* and *Firewire* interface. 2marks

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15. A warranty is an agreement between the buyer and the seller. It spells out terms and conditions after selling a product in case of failure or malfunction. Describe any three basic requirements a good warranty should cover.   3marks

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Section B

Answer Question 16 (Compulsory) and Any other 3 Questions from this section.

16. (a) With the aid of a flowchart differentiate repeat until from while loop control structures
4marks

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(b) State 2 types of translators used in programming   1mark

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(c) On the Nairobi-Nakuru highway, the Kenya Police have put speed cameras at a certain
point to read the time a vehicle passes a point (A) on the road and then reads the time
it passes a second point (B)   on the same road. (Points A and B are 200 meters
apart). The speed of the vehicle is calculated   using:

$$Speed = \frac{100}{(time\ at\ point\ B - time\ at\ point\ A)} \ (Km/\ hr)$$

The maximum allowed speed is 100 kilometers per hour.

500 vehicles were monitored using these cameras over a 1-hour period.

Write a pseudo code, which: 5marks

    i.   Inputs the start time and the end time for the 500 vehicles that were monitored

   ii.   Calculates the speed for each vehicle using the formula above.

   iii.   Outputs the speed for each vehicle and a message if the speed exceeded 100 km/hour.

       1.   >=100km/hr "High Speed"

       2.   <100km/hr "Normal Speed"

(D) Draw a flow chart for the above pseudo code.   5marks

17. (a) State any three advantages of using computers in computer aided design (CAD)

3marks

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(b) The training department of an international airline has introduced computer based training (CBT) to teach foreign languages to its cabin crew. Give TWO advantages of using CBT. 2marks

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(c) The airline also trains its pilots.

    i.   What type of training is most appropriate to train pilots to manage dangerous situations? 1mark

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    ii.   Give TWO benefits of using this type of training. 2marks

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(d) A student set up a spreadsheet to compare share prices in six companies over five years.

	A	B	C	D	E	F	G	H
1	Name of company	Share price	Share price	Share price	Share price	Share price	Average share price	Highest share price
2	Year:	2005	2006	2007	2008	2009		
3	Global Oil	81	190	305	130	140	169	305
4	GSD	619	722	622	325	324	522	722
5	KLN	60	71	71	63	45	62	71
6	Nesto	316	418	522	600	640	499	640
7	Takkco	149	316	394	202	122	237	394
8	Uniway	122	135	254	365	570	289	570

i.   What formula is in cell G5 to find the mean share price for KLN?   1mark

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ii. What formula is in cell H5 to find the highest share price for KLN?   1mark

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iii. If the data in cell E4 was changed to 425, which cells would be automatically updated?   1mark

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iv. State the cells that are needed to create a line graph to show the share prices for years 2006 to 2008.   2marks

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v.   The student wants to extend the spreadsheet to include share prices for 2010. Describe how the student would do this.   2marks

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18. (a) The following are some of the phases in the system development life cycle SDLC system analysis, system design, system implementation, system review and maintenance, state 3 activities that are carried out during the system implementation phase 3marks

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(b) Give 3 reasons why system maintenance phase is necessary in SDLC   3marks

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© Various considerations should be made during input design and output design. State two considerations to be made for each case.   4marks

     i.   Input design

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    ii.   Output design

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(e) In relation to database

    i.   Differentiate between bound and unbound controls   2marks

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ii. Outline 2 features of a primary key 2mark

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iii. What is a composite key 1mark

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19. (a) Explain 2 ways in which operating system provides data security in a computer system

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(b) Differentiate between pull down and pop up menu as used in graphical operating system

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c) Describe the following wireless communication devices. 3marks

i. Access point (AP)

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ii.   Wireless Antenna

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iii.   PCMCIA cards

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(c) Mr. Bill, the Principal of a school wishes his school to have an internet connection in a bid
to improve its service delivery. Mention four internet connectivity requirements that must
be present to enable the connection.   2marks

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(e) (i) Failure of information systems is a major concern in the security of data in computing
systems. State two causes of such failure.   2marks

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(ii) Explain the following computer crimes.

    I.   Fraud   1mark

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    II.   Industrial espionage   1mark

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(f) Excluding passwords, state two other security control measures used to guard against unauthorized access to computers in a network.   2marks

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20. (a) Write in full

        i.   ASCII   1mark

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        ii.   EBCDIC   1mark

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(b) Convert each of the following binary numbers to decimal equivalent given that the leftmost digit is a sign bit

     i.   00101101   2marks

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    ii.   11001001   2marks

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c) In a certain coding scheme a letter P was coded as 11011001 how would letter K be represented in the same scheme   4marks

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(d) Using 6 bits and twos complement subtract 23 from 17 leaving your answer in decimal notation   5marks

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