

451/1 - COMPUTER STUDIES - Paper 1

(THEORY)

June. $2022 - 2\frac{1}{2}$

| Name | Index Number | | |
|----------------------|--------------|--------|--|
| Candidates Signature | . Date | Class: | |

Instruction to candidates

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of two sections A and B.
- d) Answer all the questions in section A.
- e) Answer question **16** and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- q) This paper consists of 15 printed pages.
- h) Do not remove and pages from this booklet.
- i) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- j) Candidates should answer the questions in English.

For Examiner's Use Only

| Section | Question Number | Candidate's Score |
|---------|--------------------|----------------------|
| Α | 1-15 | |
| | 16 | |
| | 17 | |
| В | 18 | |
| | 19 | |
| | 20 | |
| | Total | |

SECTION A

| Define the term computer era | (1 Mark) |
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| | |
| Describe each of the following types of computers a) Hybrid | (1 mark) |
| | |
| b) Embedded | (1 mark) |
| | |
| 3. Discuss how humidity can be controlled in the computer lab | (2 marks) |
| | |
| 4. (a)Describe the mouse techniques listed below (i) Drag and drop | (1 Mark) |
| | |
| (ii) Right clicking | (1 Mark) |
| | |
| | |

| b.Define the terms the terms listed below (i) POST | (1 Mark) |
|---|-----------|
| (1) 1 001 | |
| | |
| (ii) BIOS | (1 Mark) |
| | |
| 5. (a) state two limitations of entering data into a computer system using a touch input device . | (2 marks) |
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| 6. With an aid of a diagram describe how a computer executes an instruction | |
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| (b) State three circumstances under which voice input would be preferred over o | ther method |
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| of data capture. | (3 marks) |
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| | |
| 7. As Brik was working in his computer, he realized that the program he was run more memory than the available memory in his computer. Identify the extra menthe program and where it is located. | nory used by (1 Mark) |
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| | • |
| 8. State the meaning of the term plotter. | (2 marks) |
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| 9. State three Factors to consider when choosing a secondary storage device | (3 marks) |
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| 10. Distinguish between a software suite and integrated software | (2 Marks) |
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| 11. | State how an operating system handles the following in a computer system | |
|------|---|------------|
| | (a) Errors | (1 mark) |
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| | (b) Interrupt | (1 mark) |
| | | |
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| 12. | State functions of the following OSI layers | |
| | a) Session | (1 mark) |
| | | |
| | | |
| | | |
| | b) Network | (1 mark) |
| | | |
| | | |
| | | |
| | c) Physical layer | (1 mark) |
| | | |
| | | |
| | | |
| 13. | During database construction, it is necessary to consider field properties for | each table |
| fiel | d. With relevant examples, state the functions of the field properties listed bel | OW. |
| | a. Field size | (1mark) |
| | | |
| | | |
| | | |
| | b. Required | (1mark) |
| | | |
| | | |
| | | |

| С | . Input Mask | (1mark) |
|-------|--|-----------|
| | | |
| 14. a | a) Differentiate between Bcc and Cc as used in emails. | (2 marks) |
| | | |
| | | |
| b) E | xplain briefly off-line processing mode. | (3 marks) |
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| | | |
| 15.lr | n relation to DTP, state the purpose of frames. | (1 mark) |
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SECTION B

| 16 | a) Br | iefly explain the following Object Oriented Programming (OOP) concepts | S. |
|-----|---------|---|-------------|
| | i) | Objects | (2 marks) |
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| | | | |
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| | | | |
| | ii) | Encapsulation | (2 marks) |
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| | | | |
| | | | |
| | | | |
| b) | A com | puter program is required which inputs 10 numbers, multiplies them togo | ether and |
| fin | ally ou | tputs the answer (the product). The following algorithm has been written | to do this. |
| | | <pre>count = 0 product = 0 while count <= 10 do input number product = product * number count = count + 1 print product endwhile</pre> | |
| (i) | There | are three errors in the algorithm. Locate and describe these errors. | (6marks) |
| er | ror 1: | | |
| | | | |
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| er | ror 2: | | |
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| er | ror 3: | | |
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| (ii) Draw a flowchart for the correct pseudocode | (5marks) |
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| 17. a) A supermarket uses a computer system which operates in both batch m | ode and real |
| time transaction mode. | |
| (i) State two task which could use batch processing. | (2 marks) |
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| | |
| (ii) State two task which must be done in real time mode. | (2 marks) |
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| State th | iree ways | in which | data lose | s integrity i | n an info | ormation s | ystem | (3 marks |
|-----------------|------------------|---------------|--------------|---------------|-------------|---|-------------|--------------|
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| schoo | nl keens a | snreadsh | eet of ex | amination r | esulte ir | n four subi | ects Part | of the |
| | - | - | icel of ex | ammanom | CSUILS II | i ioui subj | ecis. i aii | or tile |
| eadshe | et is show | n below. | | | | | | |
| | | | | | | | | 1 |
| | Α | В | С | D | Е | F | G | Н |
| | Name | Class | Maths | Science | IT | English | Average | Pass/ |
| 1 | | | | | | | Mark | Fail |
| 2 | Allen | 11A | 33 | 24 | 19 | 44 | 30 | |
| 3 | Dyos | 11B | 41 | 54 | 70 | 31 | 49 | |
| 4 | Kegg | 11A | 82 | 69 | 57 | 52 | 65 | |
| 5 | Khan | 11C | 44 | 21 | 50 | 85 | 50 | |
| 6 | Kolacz | 11A | 73 | 51 | 73 | 51 | 62 | |
| 7 | Lenski | 11B | 17 | 41 | 40 | 34 | 33 | |
| 8 | Peruza | 11C | 87 | 72 | 64 | 61 | 71 | |
| | | | | | | | | |
| Mhich c | solumn ha | c hoon us | od to cor | t the data? | | | | (1 mark |
| VIIICII | Joiumm na | s been us | eu lo soi | t the data? | | | | (1 IIIaik |
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| Mhat fo | ormula had | s boon on | torod in c | oll G2 to o | alaulata | Allon's av | orago mar | (2 (1 mark) |
| vviiai i | Jilliula Ila | s been en | ilered iii c | eli GZ to C | aicuiaie | Alleli 5 av | erage mai | rk? (1mark) |
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| rne ii | results ne | ea to be | sortea so | that the hi | gnest m | ark is at tr | ie top. Des | scribe how t |
| t could | be done. | | | | | | | (2 mark |
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| ered? | | | | | | | | (2 mark |

| (v) State the validation check that should be carried out on data entered in cells (ensure values over 100 are not input. | (1 mark) |
|--|---------------------------------------|
| (vi)The school has kept the spreadsheets of all the examination results for the last What feature of the spreadsheet software would allow the results to be easily con | st five years. mpared? (1 mark) |
| 18. a) In what three ways could an expert system help a doctor to diagnose illness | ses. (3marks) |
| | |
| b) A coffee pot is to be designed using a computer-aided design (CAD) program. Two benefits of using a CAD program to do this. (2marks) | . State |
| c) Computer technology has now allowed employees to work from home. (i) state one advantages to employers of allowing employees to work from home. | (1mark) |
| (ii) Describe two advances in computer technology which have allowed working for become possible. | rom home to (2marks) |
| | |

| , | school secretary used a word processor program to prepare | a docum | ent as shown |
|-------------------------------------|---|-----------|----------------------|
| belov | | | |
| The E are co will b be use | Election Authority of a CARICOM state is responsible for General Elections. The intesting the general election to be held in November 2013. Computers and related e used to prepare documents, spreadsheets, databases and to develop computer pred to handle the various tasks related to the elections. | quipment | |
| | THE ELECTION AUTHORITY Office of the Director | | |
| | 11 May 2013 | | |
| | Mr John Persaud Leader of Unity Party | | |
| | Dear Mr Persaud: | | |
| | National Election 2013 | | |
| 7 | The Prime Minister has announced that the General Election will be held | | |
| | on 20 November 2013. As such, please note that Nomination Day will be | | |
| | 20 September 2013. Your complete list of candidates must be submitted to | | |
| | the election officials between 2:00 p.m. to 5:00 p.m. at the City Hall. Failure | | |
| | to submit your complete list of fifty candidates will result in your party not | | |
| | being able to contest the election. | | |
| | Patrick Collins Director | | |
| | Ensuring Free and Fair Elections | | |
| a) Sta | ate the line spacing and justification that have been applied t | o the tex | t in the body of the |
| , ·· | ato the mis spacing and justimediton that have seen approar. | | (2 marks) |

| b) State three formatting features that have been used for emphasis in the | e letter. (3 marks) |
|---|-----------------------------------|
| c) The election authority has recently designed a logo. Explain how you we into the letter above the text "THE ELECTION AUTHORITY". | ould insert the logo (2 marks) |
| 19.Network software can be divided into Network Operating System (NOS | |
| Protocols a. State any four administrative activities of the Network Operating Sy | stem (4 Marks) |
| | |
| | |
| b. Differentiate between repeaters and routers | (2 marks) |
| | |

| c. State any three advantages of twisted pair cable | (3 Marks) |
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| | |
| d. Using eight bit two's complement to perform the calculation below leaving in decimal number 12. | |
| in decimal number 13 ₁₀ - 38 ₁₀ | (4 Marks) |
| | |
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| | |
| e. Convert 257 ₈ to its equivalent Hexadecimal number | (2 Marks) |
| e. Convert 2378 to its equivalent riexadecimal number | |
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| 20. (a) Explain how data in a computer system can be secured using: | |
|---|-------------------|
| (i) Password | (2 marks) |
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| /// A // // // | |
| (ii) Audit trail | (2 marks) |
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| | |
| (iii) Firewall | (2 marks) |
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| (b)A manager in XYZ Company wishes to replace the current manual syste | m with a |
| computerized one in an oganisations. | |
| (i) Explain the reasons for conducting the following activities in system imple | ementation stage. |
| a) Staff training | (2 marks) |
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| | ••••• |
| h) File conversion | (2 marks) |
| b) File conversion | (2 marks) |
| | |
| | |

| (ii) | State three factors to be considered in input requirements specifications stage.(3 marks) |
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| | a) State two circumstances under which the manager may opt to use phased changeove |
| | strategy when introducing the system into the organisation. (2 marks) |
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