* *Answer five questions only, including first question and four other questions.*
* *First question carries 20 marks and each of the other questions carries 10 marks.*

1
  (i)   Classify computers into two types according to their purpose.

  (ii)   G.C.E (Ordinary Level) candidates can obtain their examination results from the website of the Department of Examinations. When the Index Number is entered to the data entry form of the website, the system validates it. If it is valid, then the results will be retrieved from the database and displayed on the screen. Write the input, process and output for this scenario.

  (iii)   Copy Table A and Table B given below into your answer script and draw arrows between matching items of Table A and Table B.
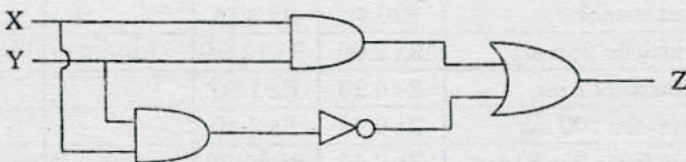
Table A	Table B
Email address	www.google.com
URL	Internet Explorer
IP address	Google
Search Engine	172.16.12.1
Web Browser	exams@doenets.lk

  (iv)   Write the Boolean expression to represent the following logic circuit. Simplify your answer.

  (v)   Character encoding schemes are used to represent symbols within computers. The number of symbols represented in a computer depends on the number of bits used for the encoding scheme. How many different symbols could be represented using eight (8) bits? Show your computations.

  (vi)   Convert hexadecimal number C9 into binary. Show your computations.

  (vii)   You are given the following logic circuit where the input B is a binary value. The output of the logic circuit is either 0 or 1 depending on the input. Modify the logic circuit by inserting an appropriate logic gate in a suitable place to produce 1 irrespective of the input value of B
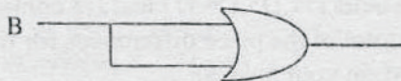
  (viii)   Consider the following three statements:
      * A 2D animation file has a ...(A.).....extension but when it is exported as a movie file it has a .(B.)..extension.
      * In graphic editing software the working area is commonly referred to as the...(C.).....
      * In graphic editing software the...(D.)..... can be used to select similar coloured areas.

Select the appropriate words for (A), (B), (C) and (D) from the list given below.

* timeline
* import
* fla
* canvas
* swf
* magic wand

(ix) Consider the set of integer numbers S={2,3,4,5,6,7,8,9,10}. The following pseudo code calculates the total of the even numbers of the set S.
Copy the pseudo code to your answer script and complete the blanks.

```
Begin
    Set Total to zero
       For (Counter = ..........to..............step............)
                Total = ........................
    Next Counter
End
```

(x)   State **four** requirement gathering techniques used in System Development Life Cycle (SDLC).

2. Consider the following worksheet on drug prices prepared according to a newspaper advertisement.

	A	B	C	D	E	F	G
1	Why Pay More ?						
2	Same drug is available in different names at different prices						
3	Name of drug	Price in Generic name	Price in branded name	price Difference			
4	Paracetamol	Rs0.40	Rs 2.75				
5	Amoxicilin 250 mg	Rs 2.00	Rs 12.65				
6	Salbutamol 2 mg	Rs 0.20	Rs 1.50				
7	Ibuprofen 200 mg	Rs 0.40	Rs 2.40				
8	Dichofenac Na 50 mg	Rs 0.60	Rs 31.20				
9	Total						
10							

Sheet1 / Sheet2 / Sheet3

(i)   Suggest the most appropriate chart type available in spreadsheet software, to show two prices of all five drugs along with the name of drug.
(ii) Write the required formula in cell D4 to show the price difference of Paracetamol.
(price difference = Price in branded name - Price in Generic name)
(iii) If the formula enterd in cell D4 is copied to cell D5, how would the formula appear in cell D5?
(iv) Assuming the cells D4,D5,D6,D7 and D8 contain price differences, write the formula to calculate the total of the price differences for the five drugs in cell D9. You may use the function SUM, in your answer.

3. Consider the following table containing information of teachers in a school.

Teacher ID	Full Name	Date of Birth	Address	Subject ID	Subject Name
111111	Raj Kumar	12-09-1977	45 Kalutara Road, Kalutara	OL2020	ICT
222222	Nuha Jamil	24-12-1980	20 Royal Gardens, Colombo	OL1010	Science
222222	Nuha Jamil	24-12-1980	2 0 Royal Gardens, Colombo	OL1050	Mathematics

There is one *specific* teacher for each subject. One teacher can teach more than one subject.

(i)   Explain "data duplication" using the above example table

(ii) Explain briefly why data duplication should be avoided

(iii) Identify the most appropriate *data types* to represent each of the fields in the above table.

(i)   Assume that you have developed the HTML content for the website of your school on your home computer. Write down the steps required to publish the website for public access.

(ii) Briefly explain the following:

   (a) Digital Divide

   (b) Encryption

   (c) Firewall

(a)   An Electricity Meter Reader reads the meters of fifty (50) houses a day. If he has access to the meter at a house, he takes the reading, calculates the bill amount and hands over the bill to the household. If he does not have access to the meter (when the gate is closed) he calculates the bill with an estimated number of units and keeps the bill in order to be sent by post.

Write down the appropriate labels to fill the blanks (a) to (f) in given flowchart. it is **not** necessary to copy the flowchart into your answer script.
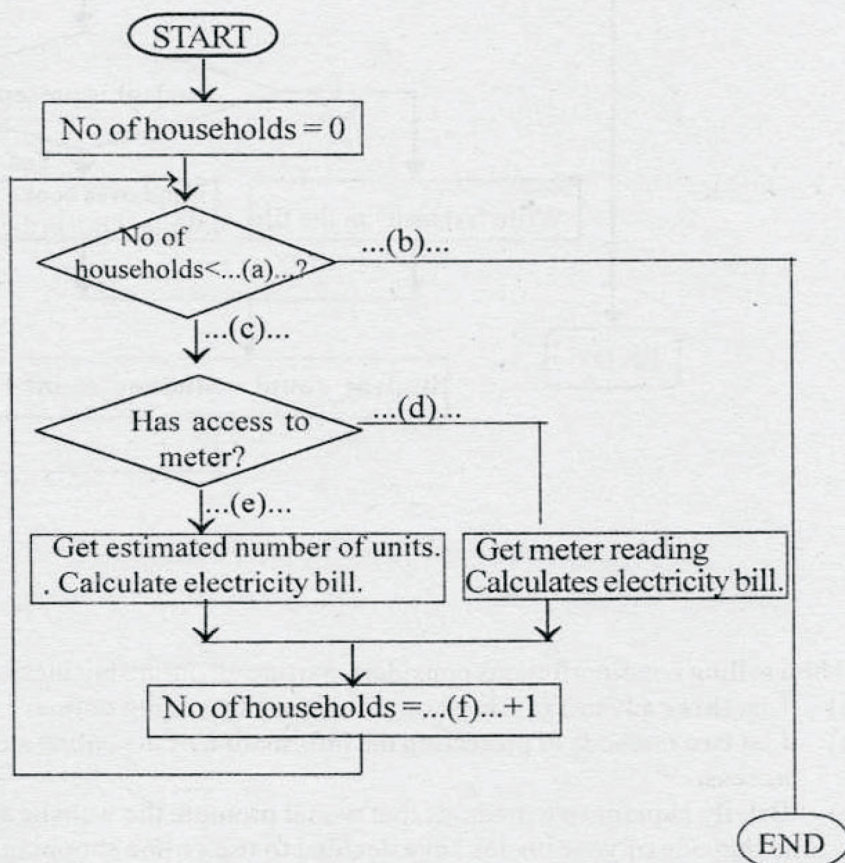
(b)   A teacher distributes text books to a class. First, teacher finds the number of students from the class register. Each student's name is called, if present, books are issued and a record is made to indicate that the books have been issued. If the student is absent, a record is made that the books have not been issued. The process is repeated for all the students. Write the pseudo code for the above scenario as indicated in the flowchart below.

You may use the keywords:

'INPUT', 'PROCESS', 'DISPLAY','BEGIN', 'END', 'DO-WHILE' and 'IF-THEN'.
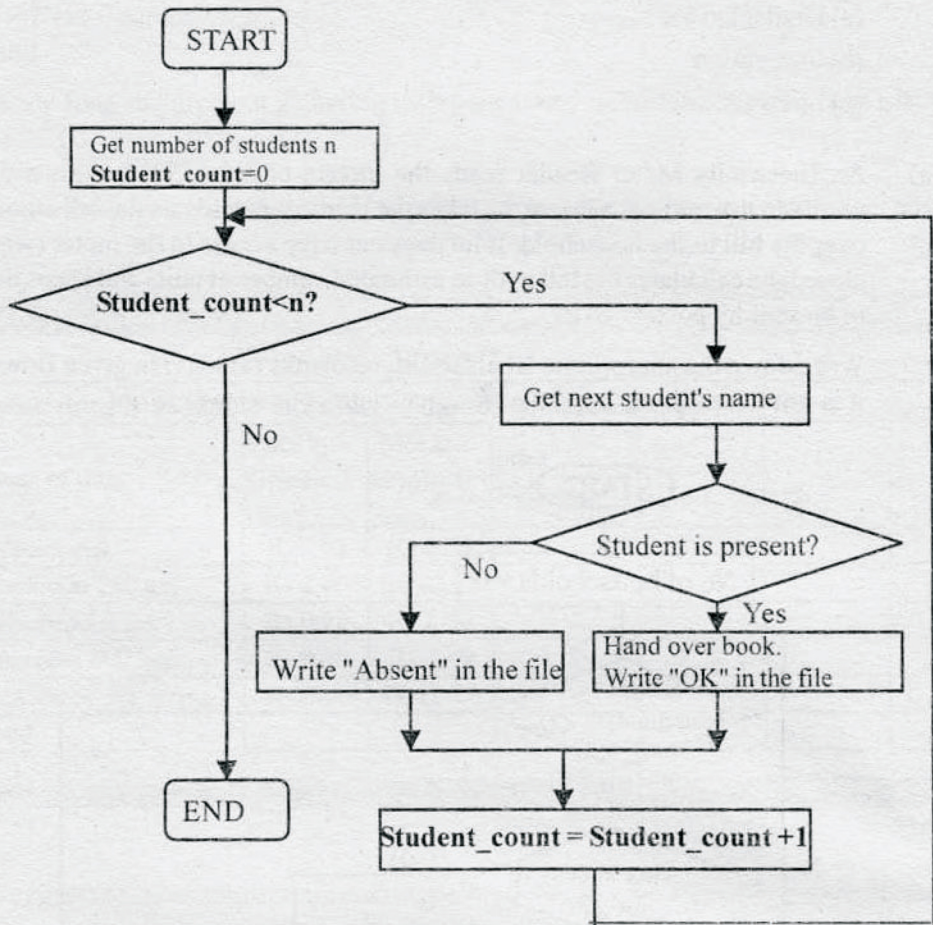
6.   (i)   A shop selling handicraft items considers starting an online business.
       (a)   List **three** advantages the shop would gain by selling online.
       (b)   List **two** methods of protecting the information of the online store from unauthorized access.
       (c)   Briefly explain **two** methods that would promote the website among customers.
    (ii)   Assume that one of your uncles have decided to use online shopping and asks your advice on safe online shopping. List **three** recommendations you would give him.

) Vimal studies abroad. His parents communicate with him by sending letters through postal service. He told his parents that it is easier and cheaper to communicate through email.

(a)   List **two** other methods his parents could use to communicate with Vimal using the Internet.

(b)   List **three** advantages in communicating via email instead of traditional postal mail service.

) Assume that you are planning to replace the existing Library Information System of your school with a Web based system.

(a)   Write **three** aspects you would consider in order to ensure that the new system is fea sible.

(b)   Which implementation method out of direct and parallel would be most appropriate for the new library system? Justify your answer.

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