



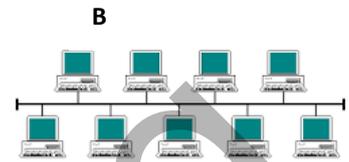
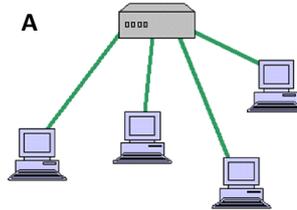
Final Term Test 2014 – Kegalu Vidyalaya

(80) Information and Communication Technology II

Three hours
Grade 11

- ☉ 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) Name following network topologies.



(ii) Draw a logic circuit to represent the following boolean expression, F using only basic logic gate (Should be used minimum number of logic gates and indicate output of each logic gate in your circuit)
 $F = X.Y + \overline{X}.Y$

(iii) Consider the above boolean expression F in part (ii)

(a) Draw a truth table to represent the above Boolean expression F.

(b) Simplify the F using your truth table in above part (a)

(iv) Showing your computation, without converting in to decimal number convert hexadecimal number $E9_{16}$ into

- Binary number
- Octal number

(v) Consider the following column 1 and 2 in that table.

Column 1	Column 2
A	Preparing a letter for parents meeting
B	held a a lecture about dengi to students
C	Storing and retriving student's details
D	Preparing a school budget

Select and write suitable answer for A, B, C and D

Database software, Presentation software, word processing software, spreadsheet software, web browser software
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(vi) State two disadvantages of using e-mails.

(vii) Consider the following statements:

- A shape that is turning into another shape is calling ①.....in 2D animation.
- When making a canvas in Graphic Editing Software, Should be created... ②...
- ... ③...can be used to draw shapes in a canvas in Graphic Editing Software.
- Objects those are in... ④... can be edited independently in Graphic Editing Software.

Select the most suitable answer for . ①, ②, ③ and ④

- * Marquee Tool
- * Motion Tweening
- * Shape Tweening
- * Layers
- * Resolution
- * Shape Tools

(viii) Consider the following statements.

- ...①... is an example for simplex data transmission.
- When connecting a computer to a network using ..②..media, is using Ethernet port/RJ-45
- ROM has a ..③...memory that is in a motherboard.
- Infred is a...④... data transmission media.

Select the most suitable answer for the blanks①, ②, ③ and ④.

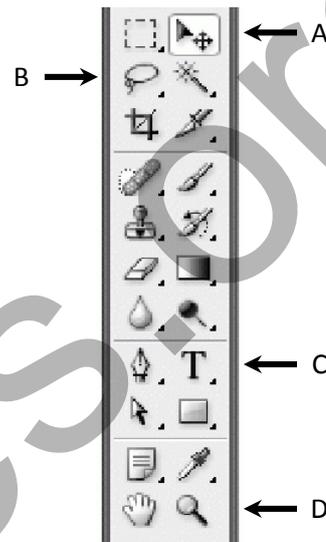
non-volatile	Radio broadcasting
mobile phone	unguided media
guided media	

(ix) Part of a tool box of Image editing software has been done for you. Name the Labels A-D and Write the functions of that tools.

(x) Write the output of following pseudo code.

```

Begin
    n = 0
    REPEAT
        Print "Silva"
        n = n + 1
    UNTIL n >= 2
    Print "Good Bye"
End
    
```



2. Consider the following worksheet extracted from a report issued by the university grant commission.

	A	B	C	D	E	F
1	GCE (A/L) Examination					
2	Students for University Education - 2009/10					
3	Stream	Boys/Girls	Eligibility	Admission	Percentage (%)	
4	Art	Male	16,430	1,481	9.0%	
5		Female	46,246	5,360	11.6%	
6		Sub Total	62,676	6,841	11%	
7	Commerce	Male	15,054	2,062		
8		Female	18,148	2,521		
9		Sub Total				
10	Science	Male	13,601	5,473		
11		Female	15,805	4,650		
12		Sub Total				
13	All	Male				
14		Female				
15		Grand Total				
16	<i>Source : University Grants Commission</i>					
17						

- (i) Write the required formula in cell C6 to show eligibility of students to university in Art stream without using function.
- (ii) If the formula entered in cell C6 is copied to cell D6, how would the formula appear in cell D6?
- (iii) Write the formula in cell E6 without using function to represent the total students admitted as a percentage of total number of students eligible for university admission in Art stream. [E6 cell is formatted into percentage type.]
- (iv) Write the formula in cell C13 to calculate the number of male students eligible for university in all streams assuming that same sub totals and percentages are calculated for Science and Commerce streams as in the Art stream. You may use the SUM function in your answer.
- (v) Suggest a chart type available in spreadsheet software, to show male and female students eligible and admitted to university in each subject stream to facilitate comparison.
3. (i) Assume that the existing system of student information is going to be a computer based information system.
- (a) Explain briefly the **three parts in system design** in developing the new system.
- (b) Mention **two** of the changes that can be done in **maintain** phase finally, after installing the new system.
- (ii) A student complains that the computers connected to the network in your school are affected with malware/malicious software.
- (a) Mention separately **two** of the reasons that can cause this.
- (b) Name the **type** of software that should be installed in order to protect the computers from such infection and mention what should be done in order to continue the protection.
- (c) Name **a** security threat that can affect computers through networks other than the one mentioned above.
- (d) Write **a** method to prevent unauthorized access to the school computer system.

4. Consider the following table containing information of athletes in a school.

AdminNo	StudentName	Gender	DateOfBirth	HouseName	House Fee	EventName
22430	Kasun Gamage	Male	15-10-1999	Vijaya	Rs. 10	200 m
22430	Kasun Gamage	Male	15-10-1999	Vijaya	Rs. 10	200 m x 4
22534	Niluka Perera	Female	30-04-1998	Perakum		200 m

Each athlete can select more than one event. An event has more than one athlete.

- (i) Explain briefly the main problem faced with when above data is to be entered into a table in a database as one shown above.
- (ii) Suggest a way of solving above problem and explain it briefly.
- (iii) If **Text** is the most appropriate data type for the **AdminNo** field in the above example, mention other data types appropriate to represent remaining fields.
- (iv) What is the object in DBMS that can be used to obtain print out of a list of all athletes after completing the database correctly?
5. (i) Health authorities plan to maintain accident wards in government hospitals as an online information system due to increase crowd of hospitals daily.
- (a) List **three** advantages to patients who are faced accidents would gain by online information system.
- (b) Explain with **an** example, **a** method of protecting the information on the online information system for future use.
- (c) Mention **two** main advantages to the government from such an online information system.

(ii) Briefly explain the following.

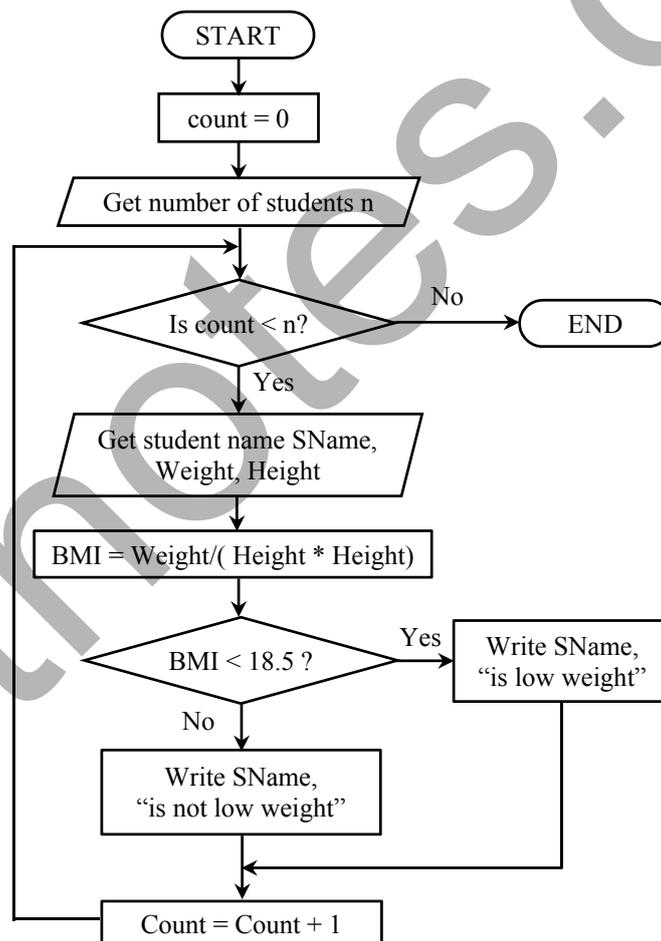
- (a) Back ache
- (b) Software Theft/Piracy
- (c) Repetitive Stress Injury / RSI

6. (i) Body Mass Index (BMI) was used to identify that students in the school are underweight. BMI is calculated by dividing the weight measured in Kgs from the square height measured in meters.

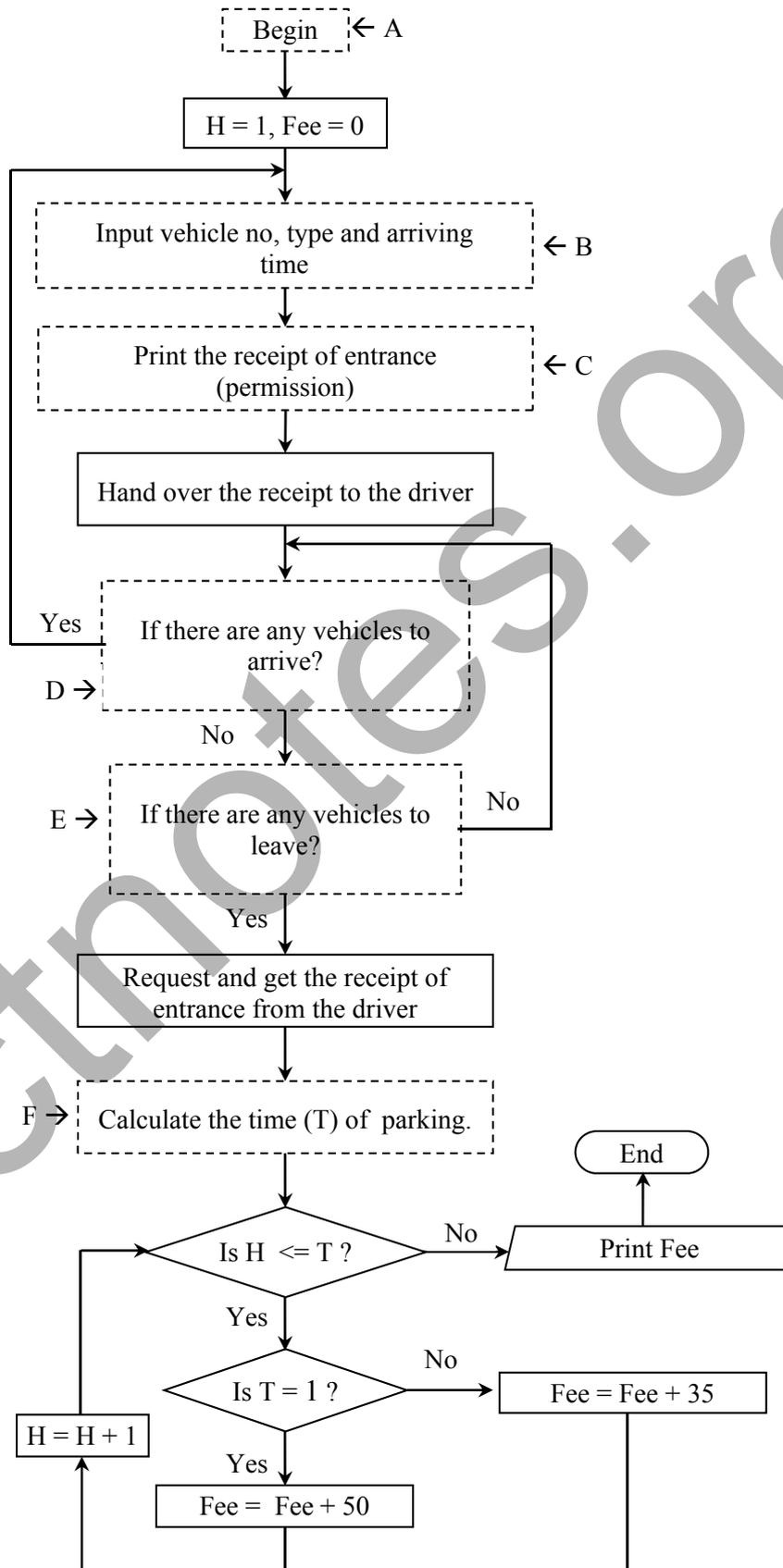
The following flowchart represents the algorithm to mention against the student name whether the student is underweight (**low weight**) in case BMI is below 18.5 or **not low weight** if BMI not below 18.5. Write the pseudo code suitable for the above scenario as indicated in the flowchart below

- You may use keywords:

‘BEGIN’, ‘END’, ‘DO-WHILE’, ‘INPUT’, ‘DISPLAY’, ‘IF-THEN’



- (ii) Write down the three main differences between first and third generation of computer programming languages.
- (iii) Consider the following flowchart that shows the algorithm of parking vehicles and calculating the parking charges of vehicles in a vehicle park. Six symbols (labeled (A-F)) are missing in the flowchart. Write down the correct symbols for them. You are only to write the labels and draw respect against them.



7. (i) Describe the difference between a website and a web browser.
- (ii) Consider the HTML source code and its corresponding output below. The code has several missing tags indicated by ① to ⑧. Select the correct tags from list given below, you are only required to write down the label and the corresponding HTML tag.

List: [a, b, h1, h2, img, ol, ul, li, th, table, ul, head, i, rowspan, colspan, br, href, img src]

```

<html>
<head>
  <title>Boolean Algebra</title>
</head>
<body>
  <①>Boolean Algebra</①>
  <p>A set of rules formulated by the English mathematician
  <②>George Boole</②>
  (1815-1864) describes certain propositions whose outcome
  would be either <③>TRUE</③> or <③>FALSE</③>.</p>
  <h2>Basic Logic Gates</h2>
  <p>There are three Basic Logic Gates.</p>
  <④>
    <li>AND gate</li>
    <li>OR gate</li>
    <li>NOT gate</li>
  </④>
  <hr size="5"/>
  <⑤="image/and.png"/> <caption>AND</caption>
  <⑤="image/or.png"/> <caption>OR</caption>
  <⑤="image/not.png"/> <caption>NOT</caption>
  <hr size="5"/>
  <h2>Truth Table</h2>
  <p>A Truth Table shows how a logic circuit's output
  responds to various combinations of the inputs, using logic 1 for
  <③>TRUE</③> and logic 0 for <③>FALSE</③>.</p>
  <⑥ border="1">
    <tr>
      <th ⑦="2">Inputs</th>
      <th ⑦="3">Output</th>
    </tr>
    <tr align="center">
      <td>A</td><td>B</td><td>A AND B</td><td>A OR
      B</td><td>NOT A</td>
    </tr>
    <tr align="center">
      <td>0</td><td>0</td><td>0</td><td>0</td><td>
      ⑧="2">1</td>
    </tr>
    <tr align="center">
      <td>0</td><td>1</td><td>0</td><td>1</td><td>
      ⑧="2">0</td>
    </tr>
    <tr align="center">
      <td>1</td><td>0</td><td>0</td><td>1</td><td>
      ⑧="2">0</td>
    </tr>
    <tr align="center">
      <td>1</td><td>1</td><td>1</td><td>1</td><td>
      ⑧="2">0</td>
    </tr>
  </⑥>
  <br/>
  <address>Source: <⑨>
  <⑩="http://www.ictczy.com">ICTczy.com</⑩></address>
</body>
</html>

```

Boolean Algebra

A set of rules formulated by the English mathematician **George Boole** (1815-1864) describes certain propositions whose outcome would be either *TRUE* or *FALSE*.

Basic Logic Gates

There are three Basic Logic Gates.

1. AND gate
2. OR gate
3. NOT gate



Truth Table

A Truth Table shows how a logic circuit's output responds to various combinations of the inputs, using logic 1 for *TRUE* and logic 0 for *FALSE*.

Inputs		Output		
A	B	A AND B	A OR B	NOT A
0	0	0	0	1
0	1	0	1	1
1	0	0	1	0
1	1	1	1	0

Source: [ICTczy.com](http://www.ictczy.com)