සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved]

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා
இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரீட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka
இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரீட்சைத் திணைக்களம்

| 80 | E | I, II |
|---|---|---|

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2015 දෙසැම්බර්
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2015 டிசெம்பர்
**General Certificate of Education (Ord. Level) Examination, December 2015**

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| තොරතුරු හා සන්නිවේදන තාක්ෂණය | I, II |
| தகவல் தொடர்பாடல் தொழினுட்பவியல் | I, II |
| **Information & Communication Technology** | **I, II** |

පැය තුනයි
மூன்று மணித்தியாலம்
***Three hours***

## Information & Communication Technology I

**Note :**

(i) *Answer **all** questions.*
(ii) *In each of the questions **1** to **40**, pick one of the alternatives* (1), (2), (3), (4) *which you consider as **correct** or **most appropriate**.*
(iii) ***Mark a cross** (×) **on the number corresponding to your choice in the answer sheet provided.***
(iv) *Further instructions are given on the back of the answer sheet. Follow them carefully.*

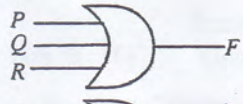
**1.** The Central Processing Unit (CPU) of a computer consists of which of the following?
(1) Arithmetic and Logic Unit (ALU), Control Unit (CU), display unit
(2) Arithmetic and Logic Unit (ALU), Control Unit (CU), input/output devices
(3) Arithmetic and Logic Unit (ALU), Control Unit (CU), memory registers
(4) Arithmetic and Logic Unit (ALU), Control Unit (CU), secondary storage

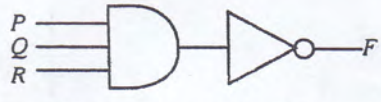
**2.** Which of the following is **not** a potential benefit of a computer network which is connected to the Internet?
(1) Backing up files to a file server in another network connected to the Internet
(2) Reduced risk of viruses and malware
(3) Sharing resources in the network
(4) Use of the web

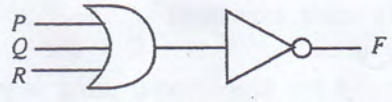
**3.** Consider a logic circuit with three inputs $P$, $Q$, $R$ and one output $F$. The following is observed in this circuit:
- if any single input is 1, then output $F$ is 0, irrespective of what the remaining inputs are.
- if all inputs are 0, then the output $F$ is 1.

Which of the following is the most likely logic gate configuration for the circuit?

(1) 


(2) 


(3) 


(4) 


**4.** To qualify in an examination, candidates have to pass one compulsory subject $S_1$ and one of the three optional subjects $S_2$, $S_3$ and $S_4$. Which of the following Boolean expressions correctly represents this scenario?
(1) $S_1$ AND ($S_2$ AND $S_3$ AND $S_4$)
(2) $S_1$ AND ($S_2$ OR $S_3$ OR $S_4$)
(3) $S_1$ OR ($S_2$ AND $S_3$ AND $S_4$)
(4) $S_1$ OR ($S_2$ OR $S_3$ OR $S_4$)

**5.** Which of the following octal numbers is equivalent to decimal 79?
(1) $117_8$ (2) $1017_8$ (3) $711_8$ (4) $7110_8$

**6.** Which of the following formats are used in computers to store data?
(1) Binary (2) Decimal (3) Hexa-decimal (4) Octal

**7.** Which of the following decimal numbers is equivalent to binary number $110111_2$?
(1) 55 (2) 63 (3) 110 (4) 118

*[see page two*

8. Which of the following represents the ascending order of the four numbers $10001111_2$, $170_8$, $46687_{10}$, $2F_{16}$?

(1) $170_8$, $10001111_2$, $2F_{16}$, $46687_{10}$
(2) $10001111_2$, $46687_{10}$, $170_8$, $2F_{16}$
(3) $2F_{16}$, $170_8$, $10001111_2$, $46687_{10}$
(4) $46687_{10}$, $10001111_2$, $170_8$, $2F_{16}$

9. Which of the file/files given in *Table* 1 could be stored in a USB storage device having a total capacity of 4GB so that a **least** amount of unused space is left on the device?

**Table 1**

| File name | Size |
|---|---|
| A.doc | 300 MB |
| B.jpg | 740 MB |
| C.mp4 | 3 GB |

(1) A.doc and B.jpg only
(2) B.jpg and C.mp4 only
(3) C.mp4 only
(4) All of them

10. A key function of an Operating System (OS) software is

(1) checking the spellings in a presentation.
(2) counting words in a document.
(3) managing hardware resources in the computer system.
(4) sending and receiving e-mail.

11. The following labelled activities from A to H are included in the system development life cycle.

A - System development
B - Feasibility study
C - System implementation
D - System maintenance
E - Problem definition
F - System analysis
G - System design
H - Testing

The correct order that the activities should be carried out is

(1) A, E, H, B, F, G, C and D.
(2) C, B, G, F, A, D, E and H.
(3) E, B, F, G, A, H, C and D.
(4) G, F, B, A, E, C, D and H.

12. Consider following statements.

A - To access the internet from a home, an internet service provider (ISP) is needed.
B - Every server computer on the internet should have a unique address.
C - Any file can be attached to an e-mail if it does not exceed the maximum file size that is allowed to be attached to an e-mail.

Which of the above statements are correct?

(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

13. Consider the following file name extensions.

A - odt B - docx C - doc D - rtf

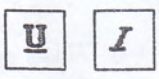
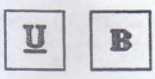
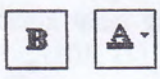
Which of the above are valid for files created using word processing software?

(1) A and B only (2) B and C only (3) C and D only (4) All A, B, C and D

14. Sentence A is formatted as sentence B by using word processing software.

Sentence A: Many people believe that Abacus is the foundation of the present computer.
Sentence B: *Many people believe that Abacus is the foundation of the present computer.*

Which of the following icons are used to format sentence A as B?

(1) 
(2) 
(3) 
(4) 

15. Which of the following icons in word processing software can be used to search for text in a document?

(1) 
(2) 
(3) 
(4) 

*[see page three*

16. Consider the following sentences related to presentation software:
A: Slide transitions are the visual movements as one slide changes to another.
B: Animations are visual effects applied to individual items on a slide.
C: Voice recordings can be recorded and included in a presentation
Which of the above sentences are correct?
(1) A and B only (2) A and C only (3) B and C only (4) All A, B, C

● Questions 17 and 18 are based on the spreadsheet segment given below.

17. What is the correct formula to be written in cell A5 to display the largest number in the cell range A1:A4?
(1) =count(A1:A4) (2) =max(A1:A4)
(3) =rank(A1:A4) (4) =sum(A1:A4)

18. What is the formula to be written in cell B5 to display the number of entries in cell range A1:B4?
(1) =count(A1:B4) (2) =max(A1:B4)
(3) =min(A1:B4) (4) =sum(A1:B4)

A5

| | A | B | C | D |
|---|---|---|---|---|
| 1 | 20 | 67 | | |
| 2 | 12 | 23 | | |
| 3 | 45 | 54 | | |
| 4 | 21 | 34 | | |
| 5 | | | | |
| 6 | | | | |

19. The formula = 2^5+16 is entered into a cell in a spreadsheet. What value will be displayed in the cell?
(1) 26 (2) 32 (3) 42 (4) 48

20. Consider the following HTML statements:

```
<dl>
    <dt> Coffee </dt>
    <dd> Hot Drink </dd>
    <dt> Milk </dt>
    <dd> Cold Drink </dd>
</dl>
```

The output of the above HTML code segment would be:

(1)
Coffee
Hot Drink
Milk
Cold Drink

(2)
Coffee
Hot Drink
Milk
Cold Drink

(3)
- Coffee
- Hot Drink
- Milk
- Cold Drink

(4)
- Coffee
  Hot Drink
- Milk
  Cold Drink

21. Consider the following HTML statements for creating a table:

```
<table border =1>
    <tr> <th>Name</th> <th>Tel. Number</th> </tr>
    <tr> <td> Gunarathna</td> <td> 0115557770 </td> </tr>
    <tr> <td rowspan=2> Somasundaram</td> <td> 0115557771 </td> </tr>
    <tr> <td>0115557772 </td> </tr>
</table>
```

Which of the following is the correct table created by the above statements?

(1)

| Name | Tel. Number |
|---|---|
| Gunarathna | 0115557770 |
| | 0115557771 |
| Somasundaram | 0115557772 |

(2)

| Name | Gunarathna | Somasundaram |
|---|---|---|
| Tel. Number | 0115557770 | 0115557771 |
| | | 0115557772 |

(3)

| Name | Tel. Number |
|---|---|
| Gunarathna | 0115557770 |
| Somasundaram | 0115557771 |
| | 0115557772 |

(4)

| Name | Gunarathna | Somasundaram |
|---|---|---|
| Tel. Number | 0115557770 | 0115557772 |
| | 0115557771 | |

22. Which of the following HTML tag combinations allows to add a row in a table?
(1) <TR > </TR> (2) <CR> </CR> (3) <TH> </TH> (4) <TD> </TD>

[see page four

**23.** Which of the following HTML tag combinations is used to display a numbered list?
(1) <OL> </OL> (2) <UL> </UL> (3) <DL> </DL> (4) <LI> </LI>

**24.** Consider the following assignment statements in a program segment which are executed in the given order:

*day* = 14
*today* = 18
*day* = *today*

Contents of *day* and *today* after execution of the above three statements are respectively,
(1) 14, 14. (2) 14, 18. (3) 18, 14. (4) 18, 18.

● Questions **25** to **27** are based on the following database. The tables show data about books available for sale in a bookshop and the book publishers.

| Book_ID | Book_Name | Quantity | Unit_Price |
|---|---|---|---|
| B001 | Exploring Moon | 5 | 250 |
| B002 | Wonders of the World | 20 | 200 |
| B003 | Art of Magic | 50 | 150 |
| B004 | Red Rackham's Treasure | 20 | 300 |

Book Table

| Book_ID | Publisher_ID |
|---|---|
| B001 | P003 |
| B002 | P002 |
| B003 | P002 |
| B004 | P001 |

Book _Publisher Table

| Publisher_ID | Publisher_Name | Publ_Phone |
|---|---|---|
| P001 | Williamsons | 5566778 |
| P002 | Bertram Publishers | 2345678 |
| P003 | Siena and Sieana | 2356987 |
| P004 | United Books | 5587698 |

Publisher Table

**25.** What is the most suitable data type for the Unit_Price in Book Table?
(1) Currency (2) Date (3) Number (4) Text

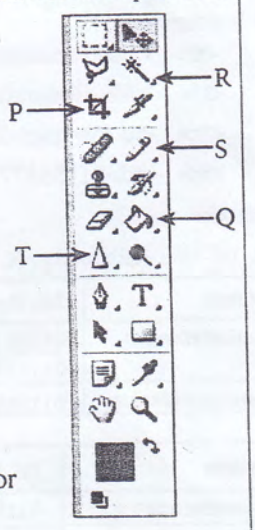
**26.** Which of the following is most suitable as the primary key for the Book Table?
(1) Book_ID (2) Book_Name (3) Quantity (4) Unit_Price

**27.** Which of the following field names is an example for a foreign key?
(1) Book_Name in Book Table (2) Book_ID in Book_Publisher Table
(3) Publ_Phone in Publisher Table (4) Publisher_Name in Publisher Table

● Refer the *Figure* 1 and the tool bar of an image editing software given below to answer the questions **28** and **29**.



*Figure* 1




**28.** Which tool is the most appropriate to draw the rabbit in the above *Figure* 1?
(1) P (2) Q (3) R (4) S

**29.** Which tool is the most appropriate to be used in colouring the roof and the door of the house in the above *Figure* 1?
(1) P (2) Q (3) S (4) T

**30.** Which of the following tools is used in an image editing software to select an irregularly shaped area of an image?
(1)  (2)  (3)  (4) 

[see page five

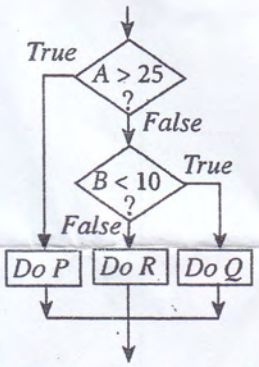
31. An image having the size 1" × 1" with resolution 72 ppi would consist of
(1) 72 pixels. (2) 144 pixels. (3) 2592 pixels. (4) 5184 pixels.

32. Which of the following can be a **least** likely consequence of a virus infection in a computer system?
(1) Corruption of data and information stored in the computer
(2) Damage to computer hardware
(3) Alteration of data and information stored in the computer
(4) Reduction of the efficiency of the operations of the computer

33. Which of the following are appropriate measures in protecting a computer system from a virus infection?
A - Paying greater attention to e-mail attachments received
B - Taking care in the use of external storage devices
C - Disabling the use of macro facility in software
(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

34. Which of the following is/are useful to consider when purchasing a computer?
A – brand reputation of the computer
B – vendor (seller) reputation
C – warranty period of the computer
(1) A only (2) B only (3) A and B only (4) All A, B and C

35. Which of the following pseudocode segments is equivalent to the logic of the given flow chart segment?




(1)
```
if A > 25 then
    Do P
else
  if B < 10 then
    Do Q
  else
    Do R
  end if
end if
```

(2)
```
if A < 25 then
    Do P
else
  if B < 10 then
    Do Q
  else
    Do R
  end if
end if
```

(3)
```
if A > 25 then
    Do P
else
  if B < 10 then
    Do R
  else
    Do Q
  end if
end if
```

(4)
```
if A > 25 then
    Do P
else
  if B > 10 then
    Do R
  else
    Do Q
  end if
end if
```

36. Marks for 10 subjects of a student are stored in the array '*marks*' with the index ranging from 1 to 10. A pseudocode to calculate the average marks with three labels Ⓟ, Ⓠ and Ⓡ is given below.

```
total_marks = Ⓟ
for i = 1 to 10
begin
    total_marks = total_marks + marks[Ⓠ]
end
average_marks = total_marks / Ⓡ
```

The values of the labels Ⓟ, Ⓠ and Ⓡ are respectively,
(1) 0, 10 and *i* (2) 0, *i* and 10 (3) 10, *i* and 10 (4) 10, 10 and *i*

37. How many times will the following '*while*' loop exeunt?

```
count = 9
while count >= 3
   count = count - 2
end while
```

(1) 2 (2) 4 (3) 6 (4) 8

*[see page six*

**38.** Consider the following pseudocode segment:

```
OddTotal = 0
count = 0
CurrentOdd = 1
while count <= 3
        OddTotal = OddTotal + CurrentOdd
        CurrentOdd = CurrentOdd + 2
        count = count + 1
end while
print OddTotal
```

What is the output of the following pseudocode segment?

(1) 9 (2) 16 (3) 25 (4) 36

**39.** Consider the following pseudocode segment:

```
if average_marks > 50 then
   if failed_subjects = 0 then
     scholarship = 'True'
   end if
end if
```

Which of the following is equivalent to the logic in the above pseudocode?

(1) If average_marks > 50 AND failed_subjects = 0 Then scholarship = 'True'
(2) If average_marks > 50 OR failed_subjects = 0 Then scholarship = 'True'
(3) If average_marks > 50 then failed_subjects = 0 Else scholarship = 'True'
(4) If average_marks > 50 then scholarship = 'True' Else failed_subjects = 0

**40.** Consider the '*while*' loop and the '*repeat until*' loops given below:

```
count_A = 1
while count_A <= 10
  count_A = count_A + 2
end while
```

```
count_B = 1
repeat
  count_B = count_B + 2
until count_B <= 10
```

What are the values of *count_A* and *count_B* after completion of the execution of *while* and *repeat until* loops respectively?

(1) 9 and 9 (2) 9 and 11 (3) 11 and 9 (4) 11 and 11

* *

Kosala Rajapaksha www.itpanthiya.com

[see page seven

සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved]

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව
இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரீட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka

80 | E | I, II

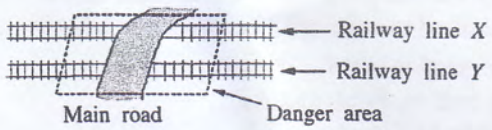
අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2015 දෙසැම්බර්
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2015 டிசெம்பர்
General Certificate of Education (Ord. Level) Examination, December 2015

තොරතුරු හා සන්නිවේදන තාක්ෂණය I, II
தகவல் தொடர்பாடல் தொழினுட்பவியல் I, II
Information & Communication Technology I, II

## Information & Communication Technology II

**Note :**
- ✱ *Answer five (05) questions only, selecting the first question and four others.*
- ✱ *First question carries 20 marks and each of the other questions carries 10 marks.*

1. (i) A main road crosses two parallel railway lines *X* and *Y*. An alarm bell should ring when a train enters the danger area on any of the lines from any direction (see figure).




The truth table below is given to indicate the operation of the alarm bell.

| P | Q | State of bell (Z) |
|---|---|---|
| 0 | 0 | |
| 0 | 1 | \ |
| 1 | 0 | \ |
| 1 | 1 | \ |

**Note :**
P - A train has entered ('1') or not entered ('0') the danger area of line *X*.
Q -A train has entered ('1') or not entered ('0') the danger area of line *Y*.
State of bell (Z):
Bell is ringing – '1'
Bell is not ringing – '0'

Copy the above truth table to your answer script and fill the last column (Z).

(ii) A basic rule (axiom) in Boolean algebra is: $x + \bar{x} = 1$. This rule can be proved using a logic circuit with a two-input OR gate and a NOT gate. Draw the relevant logic circuit diagram to illustrate the proof of the above rule.

(iii) A tourist takes photographs of interesting places in Sri Lanka using the built-in camera of his tablet computer and saves the captured images on the hard disk of the device. Later, he edits the images using the touch screen and copies them to a USB drive.
Identify and write down **two** input devices and **two** storage devices used in the above scenario.

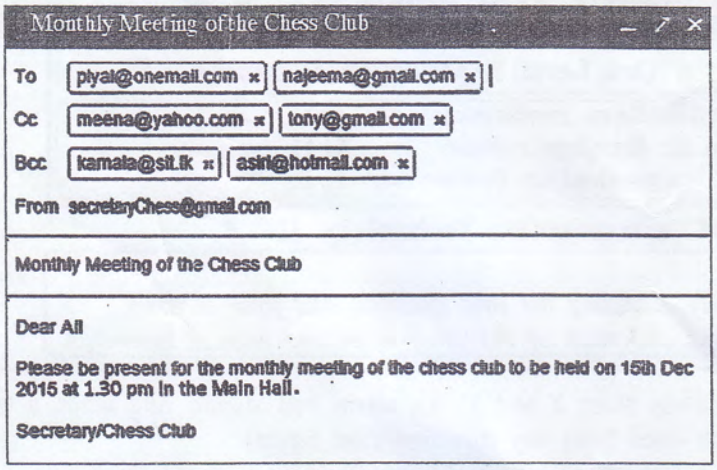
(iv) Consider the following scenarios:
X – A bank providing internet banking facilities to its customers to transfer money, pay bills such as electricity, telephone etc.
Y – An organization using an isolated computer network within a building (i.e., without any connection to the outside world)
Z – A network linking a head office of a company in Colombo with its branches in the city
Identify and write down the type of computer network involved in each of the above instances X, Y and Z from the list given below:
*List*: {Local Area Network (LAN), Metropolitan Area Network (MAN), Wide Area Network (WAN)}

(v) Convert the binary $11010101_2$ to the equivalent octal number. Show your steps.

*[see page eight*

(vi) In the ASCII code, the letter A is represented as decimal 65. Determine the binary representation of the letter D.

(vii) Consider the following figure showing a mail sent to Piyal, Najeema, Meena, Tony, Kamala and Asiri by the Secretary of the Chess Club of a school.




Assuming that the mail was received by the recipients in the list, write down whether the following statements are **True** or **False**. (You are required to write only the statement label (a)-(d) and **True/False**.)

(a) Kamala sees that the mail was also sent to Asiri.
(b) Meena sees that the mail was also sent to Piyal and Asiri.
(c) Tony sees that the mail was also sent to Meena.
(d) Piyal sees that the mail was also sent to Najeema.

(viii) Second column of the following table shows some icons used in an image editing software. Identify and write down the correct names for the icons from the given list. (You are required to write only the icon label ① – ④, and the name.)

| Label | Icon |
|---|---|
| ① | |
| ② | |
| ③ | |
| ④ | |

*List*: {brush tool, clone stamp tool, crop tool, hand tool, lasso tool, magic wand tool, move tool}

(ix) Consider the following two categories **A** and **B**. Category **A** consists of some activities of the system development life cycle (SDLC) while Category **B** contains some terms relevant to the activities listed under Category **A**.

| Category **A** |
|---|
| ① Coding |
| ② Feasibility study |
| ③ System analysis |
| ④ System design |

| Category **B** |
|---|
| Ⓟ Interfaces |
| Ⓠ Interviews |
| Ⓡ Monetary resources |
| Ⓢ Programming language |

Write down the **four** matching pairs using the given labels.

*[see page nine*

(x) Consider the execution of the following code segment containing a while loop.

```
sum = 0
N = 16
while N >= 10
    sum = sum + N
    N = N - 2
end while
```

| Cycle No. | *sum* | *N* |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

Copy the above table to your answer sheet and fill it using the values assigned for *sum* and *N* **after** the execution of each cycle in the while loop.

(i) Consider the following spreadsheet segment giving some statistics related to certain education indicators for Sri Lanka.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Education Indicators: General Education 2008-2013** | | | |
| 2 | **Item** | **2008** | **2010** | **2013** |
| 3 | **Total Schools** | 10,445 | 10,502 | 10,849 |
| 4 | Govt. Schools | 9,662 | 9,685 | 10,012 |
| 5 | Private | 92 | 98 | 103 |
| 6 | Pirivenas | 691 | 719 | 734 |
| 7 | **Total Students** | 4,101,509 | 4,119,525 | 4,231,259 |
| 8 | Govt. Schools | 3,930,374 | 3,940,072 | 4,037,157 |
| 9 | Private | 115,070 | 117,362 | 127,986 |
| 10 | Pirivenas | 56,065 | 62,091 | 66,116 |
| 11 | **Total Teachers** | 224,410 | 224,541 | 239,245 |
| 12 | Govt. Teachers | 213,212 | 212,457 | 226,983 |
| 13 | Other (Private School & Pirivenas) | 11,198 | 12,084 | 12,262 |
| 14 | **Student/Teacher Ratio (Govt. Schools)** | | | |

*Sources:*
1. Statistical Handbook 2010 of National Science Foundation
2. Education Information - Ministry of Education

(a) What is the single spreadsheet function that can be used in cell B3 to display the total number of schools for 2008?

(b) What will be the formula displayed in C3, if the formula in B3 is copied to C3?

(c) "Student/Teacher Ratio (Govt. Schools)" is calculated by dividing the number of students in government schools by the total number of teachers in government schools. What is the formula to be written in cell B14 to display the student/teacher ratio (Govt. schools) in 2008?

(d) Suggest the most suitable graph type to show the comparison between the numbers of government schools, private schools and pirivenas for the given three years.

(ii) State whether the following statements regarding spreadsheets are **True** or **False**:
(You are required to write only the statement number (a) – (f) and **True/False**.)

(a) The autofill facility can be used to copy a formula to a range of adjacent cells.

(b) Text entries in cells get right aligned automatically by default.

(c) It is possible to get cell borders to appear on a spreadsheet printout.

(d) It is possible to hide rows and columns in a spreadsheet.

(e) By pressing Control+Home keys the cursor is moved to cell A1.

(f) When Control+Pageup keys are pressed, the active cell jumps to the next worksheet.

*[see page ten*

3. The *XYZ Sports* is a shop that sells sports items which are supplied to the shop by several suppliers. The shop maintains a database with three tables to store the items currently in stock, their suppliers and items purchased from the suppliers, as shown below.

| ItemID | IName | Stock |
|---|---|---|
| P01 | Football | 15 |
| P02 | Bat | 25 |
| P03 | Netball | 18 |
| P04 | Volleyball | 10 |
| | | |

*Item Table*

| SupplD | SName | Phone |
|---|---|---|
| S01 | Nuwan | 1234567 |
| S02 | Rita | 5678123 |
| S03 | Akram | 5566113 |
| S04 | Kumari | 8877221 |
| | | |

*Supplier Table*

| Date | SupplD | ItemID | Count |
|---|---|---|---|
| 11/8 | S01 | P03 | 40 |
| 12/9 | S03 | P03 | 15 |
| 13/9 | S02 | P01 | 20 |
| 14/9 | S04 | P02 | 30 |
| 16/9 | S03 | P04 | 20 |
| | | | |
| | | | |

*Purchase Table*

(i) List **two** primary key fields and their table names in the above database system.

(ii) The shop decides to add a new item 'Tennis ball' and purchases 30 of them from the supplier Rita on the date 22/9.
  (a) What table(s) need(s) to be updated for this event?
  (b) Write down the new record(s) in the relevant table(s).

(iii) A customer buys one Volleyball and one Bat.
  (a) What table(s) need(s) to be updated for this event?
  (b) Write down the updated record(s) in the relevant table(s).

4. (i) Assume that your friend says "telemedicine is taking medicine from home by contacting a doctor over a phone." Explain why your friend's statement is **incorrect**. Write down an example to illustrate the correct use of telemedicine.

(ii) Saman says that he installed a virus scanner on his home computer six months ago and that he has never had internet access at home. Explain why his computer may **not** have protection from new virus attacks.

(iii) Explain **one** ethical issue related to the use of personal information stored on an information system. Your answer should include **one** example to illustrate an unethical act related to privacy of information.

(iv) Your friend says that he does **not** need to backup his data as he has installed a firewall. Do you agree with him? State reasons for your answer.

(v) Provide **two** reasons why one should **not** use pirate software. (Your answer should show issues related to pirate software.)

5. (i) Assume that the monthly payments for tea plucking employees in a tea estate are calculated based on the weight of the tea leaves that they pluck daily. The payment process is performed manually at present and it is proposed to automate the process.
  (a) State **two** methods that can be used to understand the requirements of the proposed system if the above process is to be automated.
  (b) Write down the input data and the output information of the proposed system.
  (c) Unit testing is one testing method that can be used to test the above system. Write **one** other testing method.
  (d) The newly developed software can be deployed (installed) using either a parallel implementation or a direct implementation. Which method would you use? State **one** reason for your recommendation.

(ii) Assume that you want to find information on 'environment conservation' from the internet. The relevant activities involved are given in the list below. Write down the given activities in the correct order. (You are only required to write down the labels of the activities in the correct order.)

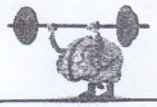
*List*:

Ⓐ - Connect to the internet using the relevant software.
Ⓑ - Enter 'environment conservation' as the search text.
Ⓒ - Log in to the computer.
Ⓓ - Open up a search engine.

*[see page eleven*

6. (i) Consider the web page given in *Figure* 1 which is to be prepared using the source code in *Figure* 2.

**Lifestyle-Based Ways to Improve Your Memory**



*Although there are no guarantees when it comes to preventing memory loss, memory tricks can be helpful. Consider five simple ways to improve your memory.*

**Five Simple Ways**

- Get Organized
- Sleep Well
- Eat Healthy Diet
- Play Brain Games
- Do Physical Activity

*Further Information:* Health Advice Center

*Figure* 1

```
<html>
<(1)>
    <title>Health Tips </title>
</(1)>
<body>
 <(2)>
  <(3)> Lifestyle-Based Ways to Improve Your Memory </(3)>
  <(4) SRC = "icon.jpg" ALT = "Brain Logo" border = 3> </center>
 </(2)>
 <(5)>
 <(6)>
 Although there are no guarantees when it comes to preventing memory loss, memory tricks can be
 helpful. Consider five simple ways to improve your memory.
 </(6)>
 <(7)> Five Simple Ways </(7)>
 <(8) type = circle>
    <(9)Get Organized</(9)>
    <(9)>Sleep Well </(9)>
    <(9)>Eat Healthy Diet </(9)>
    <(9)>Play Brain Games </(9)>
    <(9)>Do Physical Activities </(9)>
 </(8)>
 Further Information: <a (10) ="http://www.health.com"> Health Advice Center </a>
</body>
</html>
```

*Figure* 2

(i) The code in *Figure* 2 has ten missing HTML tags indicated by labels ❶ to ❿. Select the correct tags for the labels from the list given below. (Write down only the label number and the corresponding HTML tags.)

*List*: {TR, OL, HEAD, HREF, BODY, LI, UL, H2, H1, P, IMG, HR, TABLE, CENTER, DL}

(ii) Select from the list given below and write down, the most appropriate term/phrase for each of the blanks labelled ❶ to ❺ in the following sentences. (You are required to write only the label number and the corresponding term/phrase.)

*List:* {switch, modem, hub, URL, web browser, web authoring software, web server}

(a) A .....❶..... can be used to properly view an HTML file.

(b) A file on the web is uniquely identified by using a .....❷.....

(c) An HTML file can be created by using a .....❸.....

(d) A .....❹..... may contain all the hypermedia documents relating to a particular organization.

(e) A .....❺..... can be used to convert analog signals to digital.

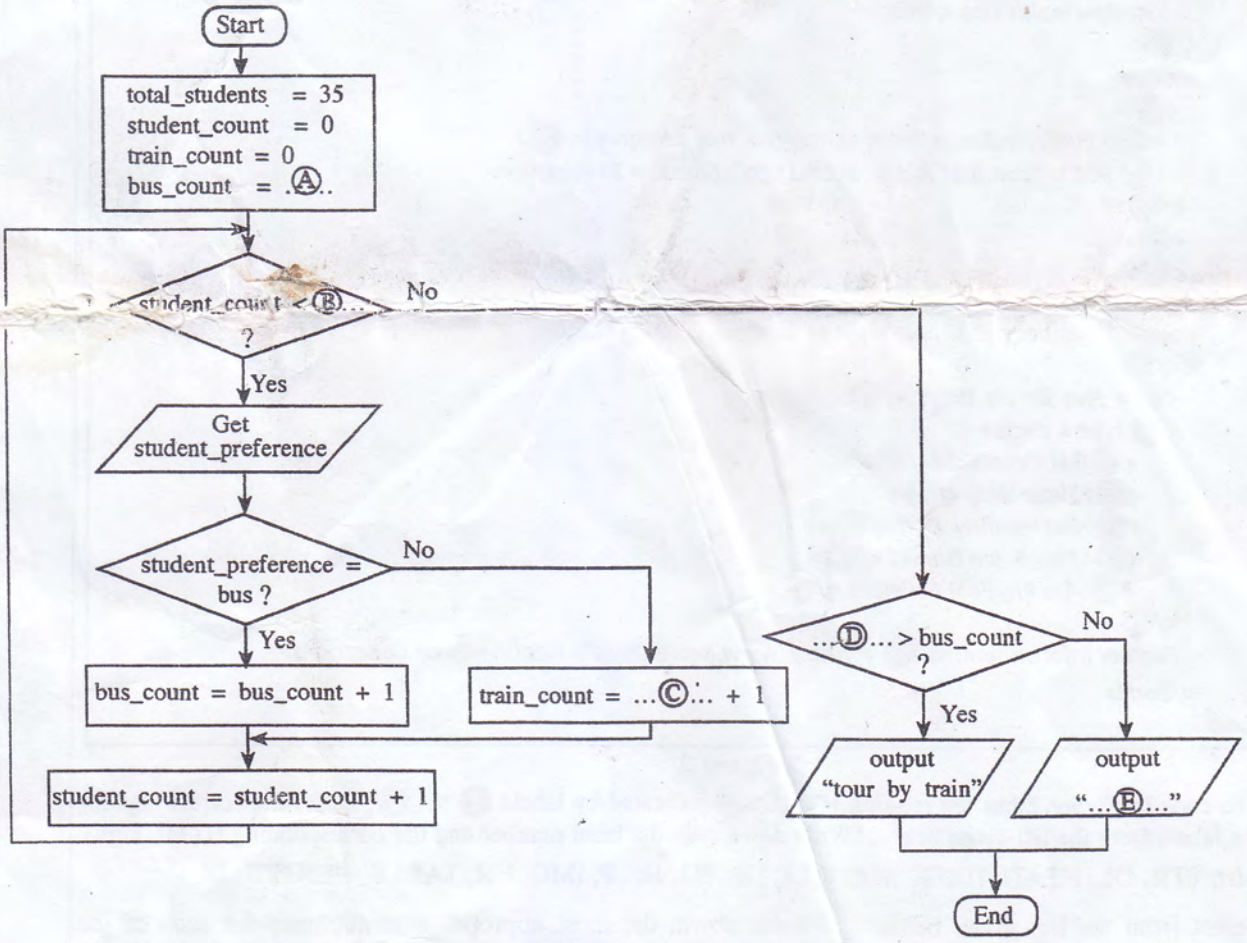
*[see page twelve*

7. (i) A school has 1000 students. The following pseudocode segment prints the admission numbers of students who attended the school everyday (i.e., 210 days) in a particular year:

```
N=0
while N<1000
    get AdmissionNumber
    get NumberOfDays
    if NumberOfDays=210 then
            print AdmissionNumber
    end if
    N=N+1
end while
```

Draw a flowchart to represent the above pseudocode. (Use the same variable names as given in the pseudocode in your flowchart.)

(ii) A teacher of a class of 35 students obtains the student preference to travel either by train or by bus on their annual trip. The following flow chart with missing terms labelled from Ⓐ to Ⓔ represents this scenario.




Write down the appropriate terms for the labels Ⓐ to Ⓔ. (Any variable names that are used in your answer must be exactly as given in the question.)

* * *