

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


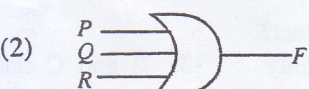
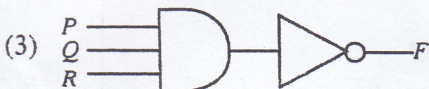
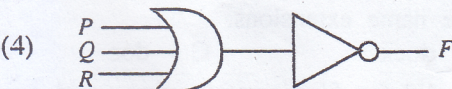
තොරතුරු හා සන්නිවේදන තාක්ෂණය I, II  
 தகவல் தொடர்பாடல் தொழினுட்பவியல் I, II  
 Information & Communication Technology I, II

පැය තුනයි  
 மூன்று மணித்தியாலம்  
 Three hours

### Information & Communication Technology I

#### Note :

- Answer all questions.
- 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.
- Mark a cross (X) on the number corresponding to your choice in the answer sheet provided.
- Further instructions are given on the back of the answer sheet. Follow them carefully.

- The Central Processing Unit (CPU) of a computer consists of which of the following?
  - Arithmetic and Logic Unit (ALU), Control Unit (CU), display unit
  - Arithmetic and Logic Unit (ALU), Control Unit (CU), input/output devices
  - Arithmetic and Logic Unit (ALU), Control Unit (CU), memory registers
  - Arithmetic and Logic Unit (ALU), Control Unit (CU), secondary storage
- Which of the following is **not** a potential benefit of a computer network which is connected to the Internet?
  - Backing up files to a file server in another network connected to the Internet
  - Reduced risk of viruses and malware
  - Sharing resources in the network
  - Use of the web
- 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?
  - 
  - 
  - 
  - 
- 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?
  - $S_1 \text{ AND } (S_2 \text{ AND } S_3 \text{ AND } S_4)$
  - $S_1 \text{ AND } (S_2 \text{ OR } S_3 \text{ OR } S_4)$
  - $S_1 \text{ OR } (S_2 \text{ AND } S_3 \text{ AND } S_4)$
  - $S_1 \text{ OR } (S_2 \text{ OR } S_3 \text{ OR } S_4)$
- Which of the following octal numbers is equivalent to decimal 79?
  - $117_8$
  - $1017_8$
  - $711_8$
  - $7110_8$
- Which of the following formats are used in computers to store data?
  - Binary
  - Decimal
  - Hexa-decimal
  - Octal
- Which of the following decimal numbers is equivalent to binary number  $110111_2$ ?
  - 55
  - 63
  - 110
  - 118

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 <sup>5</sup>  
 B - Feasibility study <sup>2</sup>  
 C - System implementation <sup>7</sup>  
 D - System maintenance <sup>8</sup>  
 E - Problem definition <sup>1</sup>  
 F - System analysis <sup>3</sup>  
 G - System design <sup>4</sup>  
 H - Testing <sup>6</sup>








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) 

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)

A5				
	A	B	C	D
1	20	67		
2	12	23		
3	45	54		
4	21	34		
5				
6				

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)

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)        | (2)        | (3)                              | (4)                              |
| Coffee     | Coffee     | <input type="radio"/> Coffee     | <input type="radio"/> Coffee     |
| Hot Drink  | Hot Drink  | <input type="radio"/> Hot Drink  | <input type="radio"/> Hot Drink  |
| Milk       | Milk       | <input type="radio"/> Milk       | <input type="radio"/> Milk       |
| Cold Drink | Cold Drink | <input type="radio"/> Cold Drink | <input type="radio"/> 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)          | <table border="1"> <thead> <tr> <th>Name</th> <th>Tel. Number</th> </tr> </thead> <tbody> <tr> <td>Gunarathna</td> <td>0115557770</td> </tr> <tr> <td></td> <td>0115557771</td> </tr> <tr> <td>Somasundaram</td> <td>0115557772</td> </tr> </tbody> </table> | Name         | Tel. Number | Gunarathna | 0115557770 |              | 0115557771 | Somasundaram | 0115557772 | (2) | <table border="1"> <thead> <tr> <th>Name</th> <th>Gunarathna</th> <th>Somasundaram</th> </tr> </thead> <tbody> <tr> <td>Tel. Number</td> <td>0115557770</td> <td>0115557771</td> </tr> <tr> <td></td> <td></td> <td>0115557772</td> </tr> </tbody> </table> | Name | Gunarathna | Somasundaram | Tel. Number | 0115557770 | 0115557771 |  |            | 0115557772 |
|--------------|--|--------------|-------------|------------|------------|--------------|------------|--------------|------------|-----|---|------|------------|--------------|-------------|------------|------------|--|------------|------------|
| Name         | Tel. Number  |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| Gunarathna   | 0115557770   |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
|              | 0115557771   |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| Somasundaram | 0115557772   |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| Name         | Gunarathna   | Somasundaram |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| Tel. Number  | 0115557770   | 0115557771   |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
|              |  | 0115557772   |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| (3)          | <table border="1"> <thead> <tr> <th>Name</th> <th>Tel. Number</th> </tr> </thead> <tbody> <tr> <td>Gunarathna</td> <td>0115557770</td> </tr> <tr> <td>Somasundaram</td> <td>0115557771</td> </tr> <tr> <td></td> <td>0115557772</td> </tr> </tbody> </table> | Name         | Tel. Number | Gunarathna | 0115557770 | Somasundaram | 0115557771 |              | 0115557772 | (4) | <table border="1"> <thead> <tr> <th>Name</th> <th>Gunarathna</th> <th>Somasundaram</th> </tr> </thead> <tbody> <tr> <td>Tel. Number</td> <td>0115557770</td> <td>0115557772</td> </tr> <tr> <td></td> <td>0115557771</td> <td></td> </tr> </tbody> </table> | Name | Gunarathna | Somasundaram | Tel. Number | 0115557770 | 0115557772 |  | 0115557771 |            |
| Name         | Tel. Number  |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| Gunarathna   | 0115557770   |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| Somasundaram | 0115557771   |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
|              | 0115557772   |              |             |            |            |              |            |              |            |     |   |      |            |              |             |            |            |  |            |            |
| 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>

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.

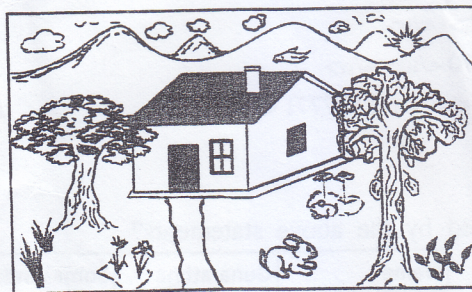
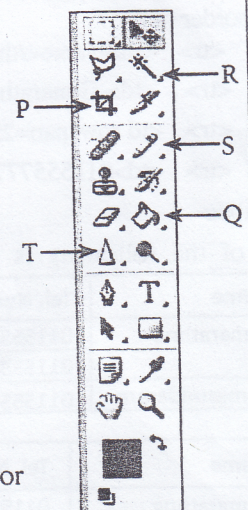




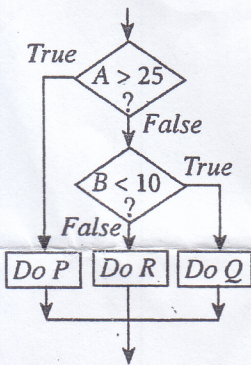


Figure 1



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) 

31. An image having the size 1" x 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)  | (2)  | (3)  | (4)  |
| if A > 25 then<br>Do P<br>else<br>if B < 10 then<br>Do Q<br>else<br>Do R<br>end if<br>end if | if A < 25 then<br>Do P<br>else<br>if B < 10 then<br>Do Q<br>else<br>Do R<br>end if<br>end if | if A > 25 then<br>Do P<br>else<br>if B < 10 then<br>Do R<br>else<br>Do Q<br>end if<br>end if | if A > 25 then<br>Do P<br>else<br>if B > 10 then<br>Do R<br>else<br>Do Q<br>end if<br>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 execute?  
 count = 9  
 while count >= 3  
 count = count - 2  
 end while  
 (1) 2 (2) 4 (3) 6 (4) 8

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:

<code>count_A = 1</code>	<code>count_B = 1</code>
<code>while count_A &lt;= 10</code>	<code>repeat</code>
<code>    count_A = count_A + 2</code>	<code>    count_B = count_B + 2</code>
<code>end while</code>	<code>until count_B &lt;= 10</code>

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

\* \*

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