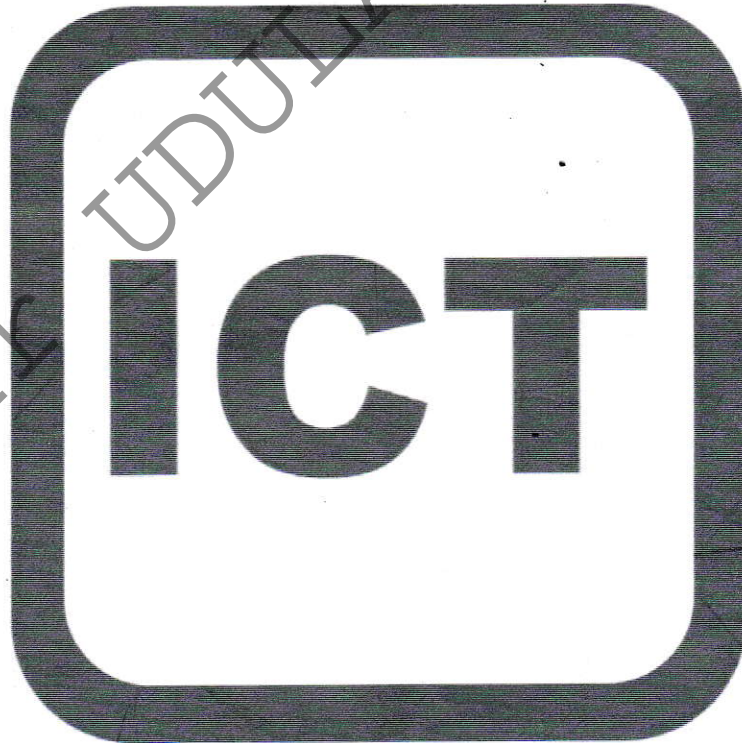




Department of Examinations – Sri Lanka  
G.C.E. (O/L) Examination – 2021(2022)

# 80 – Information & Communication Technology

Marking Scheme



This document has been prepared for the use of Marking Examiners. Some changes would be made according to the views presented at the Chief Examiners' Meeting.

Amendments are to be included.

G. C. E (O/L) Examination – 2021 (2022)

80 - Information & Communication Technology

Marking Scheme

### **Distribution of Marks**

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#### Paper Structure

##### **Paper I**

Consists of 40 compulsory MCQs.

Each Correct answer is given **1 Mark**

Therefore, total allocated marks for **Paper I is 1 mark x 40 = 40 Marks**

##### **Paper II**

Consists of Seven Questions

Question No. 1 is compulsory carries **20 Marks**

Other Questions Worth **10 Marks.**

Should answer Any Four Questions from Question No. 02 to 07

Therefore, total allocated marks for **Paper II is 20 + 4 x 10 = 60 Marks**

## Distribution of Marks

Paper I	40 MCQs	Compulsory	40 marks
Paper II	Q1	Compulsory	20 marks
	Q2	Any four questions from Q2-Q7	10 marks x 4
	Q3		
	Q4		
	Q5		
	Q6		
	Q7		
Total marks			100 marks

### Instructions:

1. Acceptable alternatives for a given word or set of words are separated by slashes (/).
2. Alternative answers are separated by double slashes (/ /).
3. ✓ indicates to consider as correct if the student's intention is clear.
4. ✗ indicates that marks should **not** be given if more than one answer is written by the student.
5. (R) indicates if one answer is repeated, give marks only for the correctly provided answer and ignore the others.

**G.C.E.(O/L) EXAMINATION - 2021 (2022)**  
**Common Techniques of Marking Answer Scripts.**

It is compulsory to adhere to the following standard method in marking answer scripts and entering mark sheets.

1. Each Assistant Examiner should use red colour ball-point pen for marking answer scripts.
2. A purple colour ball-point pen should be used by Chief Examiners.
3. Code number of the Assistant Examiner should be noted down on front page of each answer script. Enter marks in **clear numerals**.
4. Write off incorrectly written numerals with a clear single line and authenticate the alterations with Examiner's initial.
5. Enter the marks of each subsection of a question as a rational number in the given space of  $\Delta$  and the final marks of each question should be entered as a total rational number in the given space of  $\square$  by denoting respective question number as well. Use the column assigned for the Examiners to write marks.
6. Evaluation Mark Finalizer should use blue or black colour pen to verify the accuracy of the marks.

**Example: Question No. 03**

(i)	.....	✓	$\Delta$ $\frac{4}{5}$
	.....		
	.....		
(ii)	.....	✓	$\Delta$ $\frac{3}{5}$
	.....		
	.....		
(iii)	.....	✓	$\Delta$ $\frac{3}{5}$
	.....		

03 (i)  $\frac{4}{5}$  + (ii)  $\frac{3}{5}$  + (iii)  $\frac{3}{5}$  =  $\frac{10}{15}$

**MCQ answer scripts: (Template)**

1. Mark the correct options on the template according to the Marking Scheme. Cut off the marked windows with a blade. Cut off the cages for Index Number and the number of correct options so as to be able to keep the template correctly on the answer script. Cut off a blank space to the right of each options column to mark the answers. Cut off the cages for the subject number and the subject to be clearly visible. Submit the prepared template to the Chief Examiner for approval.
2. Then, check the answer scripts carefully. If there are more than one or no answers marked to a certain question write off the options with a line. Sometimes candidates may have erased an option marked previously and selected another option. In such occasions, if the erasure is not clear write off those options too.
3. Place the template on the answer script correctly. Mark the right answers with a '✓' and the wrong answers with a 'X' against the options column. Write down the number of correct answers inside the cage given under each column. Then, add those numbers and write the number of correct answers in the relevant cage.

### Structured essay type and essay type answer scripts:

1. Cross off any pages left blank by candidates. Underline wrong or unsuitable answers and write cross mark. Point-out areas by a check mark, where marks can be offered.
2. Use the right margin of the overland paper to write down the marks.
3. Write down the marks given for each question against the question number in the relevant cage on the front page in two digits. Selection of questions should be in accordance with the instructions given in the question paper. Mark all answers and transfer the marks to the front page, and write off answers with lower marks if extra questions have been answered against instructions.
4. Add the total marks carefully and write in the relevant cage on the front page. Turn pages of answer script and add all the marks given for all answers again. Check whether that total tallies with the total marks written on the front page.

### Preparation Of Mark Sheets.

Except for the subjects with a single question paper, final marks of two papers will not be calculated within the evaluation board. Therefore add separate mark sheets for each of the question paper. Enter paper I marks in "Total Marks" column of the mark sheet and write them in words as well. Enter paper II Marks in the " Total Marks" Column and include the relevant details. For the subject 43 Art, Paper I, II and III Marks should be entered numerically in the separate mark sheets and should also be written in words.

For subjects 21 Sinhala language and literature and 22 Tamil Language and literature, paper I marks once entered numerically should be written in words. Use separate marks sheets for the papers II and III and enter the total marks in the "Total marks column". Write the relevant detailed marks against each of the total mark.

#### N.B.:-

- I. Final marks for paper I, paper II or paper III should always be rounded up to the nearest whole number and they should never be kept as decimal or half values.
- II. Each page of the mark sheet should be compulsorily verified by the Assistant Examiner who entered marks to the mark sheet, Assistant Examiner who checked the mark sheet, the Verifying Examiner of the evaluation marks and Chief Examiner by placing respective code number and the signature.

\*\*\*

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2021(2022)  
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2021(2022)  
General Certificate of Education (Ord. Level) Examination, 2021(2022)

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

පැය තුනයි  
மூன்று மணித்தியாலங்கள்  
Three hours

අමතර කියවීම් කාලය - මිනිත්තු 10 යි Use additional reading time to go through the question paper,  
மேலதிக வாசிப்பு நேரம் - 10 நிமிடங்கள் select the questions and decide on the questions that you give  
Additional Reading Time - 10 minutes priority in answering.

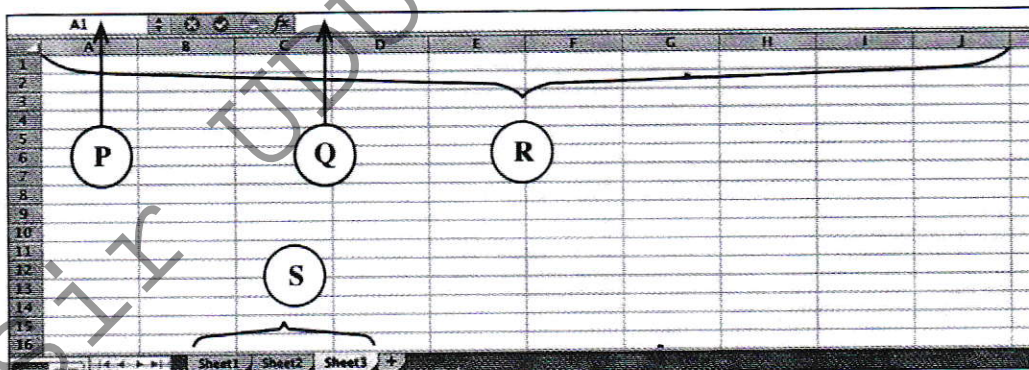
Information & Communication Technology I

Instructions:

- \* Answer all questions.
- \* In each of the questions 1 to 40, pick one of the alternatives (1), (2), (3), (4) which is 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.

1. Which of the following is an example for a data processing task of a user?  
(1) Installing word processing software in a personal computer  
(2) Formatting the hard disk in a personal computer  
(3) Reading an online newspaper using a web browser  
(4) Calculating the average marks obtained by a student using a spreadsheet software
2. Which of the following group consists of only input devices?  
(1) Barcode Reader, CRT Monitor, Joystick  
(2) Barcode Reader, Plotter, Webcam  
(3) Keyboard, Mouse, Scanner  
(4) Multimedia Projector, Printer, Scanner
3. Which of the following cannot be used to permanently store data?  
(1) Hard disk (2) Magnetic tape  
(3) Random Access Memory (RAM) (4) USB Flash Drive
4. Which of the following correctly shows the given storage components of a particular computer system in descending order of their storage capacity?  
(1) Hard disk, Cache memory, Main memory  
(2) Hard disk, Main memory, Cache memory  
(3) Main memory, Cache memory, Hard disk  
(4) Main memory, Hard disk, Cache memory
5. In a ..... network topology, each network component is physically connected to a central node such as a hub or a switch.  
(1) bus (2) mesh (3) ring (4) star
6. Krishna accessed the official web portal of the government of Sri Lanka (<http://www.gov.lk>) to renew her vehicle revenue licence online. Which of the following services was obtained by her?  
(1) G2B (2) G2C (3) G2E (4) G2G

7. If the character "A" is represented as  $1000001_2$  in ASCII coding scheme, what character will be represented by  $1000100_2$ ?
- (1) B (2) C (3) D (4) E
8. Which of the following represents the given four numbers in the **descending** order?
- (1)  $10011110_2$ ,  $157_{10}$ ,  $9C_{16}$ ,  $233_8$   
 (2)  $157_{10}$ ,  $10011110_2$ ,  $9C_{16}$ ,  $233_8$   
 (3)  $233_8$ ,  $10011110_2$ ,  $157_{10}$ ,  $9C_{16}$   
 (4)  $9C_{16}$ ,  $233_8$ ,  $10011110_2$ ,  $157_{10}$
9. Which of the following is the **first** software that must be installed on a computer after formatting its hard disk?
- (1) Office package  
 (2) Operating system  
 (3) Antivirus software  
 (4) Web browser
10. Which of the following group consists of only language translators?
- (1) Assembler, Compiler, Interpreter  
 (2) Interpreter, Compiler, Web browser  
 (3) Assembler, Operating system, Compiler  
 (4) Web browser, Operating system, Interpreter
11. What is the shortcut key combination to "Find and Replace" words in *Microsoft Word* or *LibreOffice Writer*?
- (1) Ctrl+A (2) Ctrl+C (3) Ctrl+H (4) Ctrl+X
12. Consider the following spreadsheet segment with four components labelled as P, Q, R and S:



- Which of the following represents the P, Q, R and S labels in the correct order?
- (1) Column Headings, Formula Bar, Name Box, Sheet Tabs  
 (2) Name Box, Column Headings, Sheet Tabs, Formula Bar  
 (3) Name Box, Formula Bar, Column Headings, Sheet Tabs  
 (4) Sheet Tabs, Formula Bar, Column Headings, Name Box

[see page three]

- Consider the following segment of a marksheet entered into an electronic spreadsheet to answer questions 13 and 14:

	A	B	C	D	E
1	Name	ICT	Maths	Religion	Total
2	Sahan	60	55	70	
3	Oshini	35	absent	60	
4	Raji	75	65	absent	
5	Pooja	55	45	75	
6					
7					

13. What is the correct formula to be entered in cell E2 to calculate the total marks obtained by Sahan?  
 (1) =B2+C2+D2 (2) B2+C2+D2 (3) E2=B2+C2+D2 (4) E2->B2+C2+D2
14. What will be the value displayed in cell A7 if the formula =COUNT(A1:D5) is entered into it?  
 (1) 10 (2) 12 (3) 16 (4) 20
15. Which of the following actions can be used to move to the next slide in a slide show of an electronic presentation?  
 A - Clicking the "Left" button of the mouse device  
 B - Pressing the "Ctrl" key of the keyboard  
 C - Pressing the "Right arrow" key of the keyboard  
 (1) A and B only (2) A and C only (3) B and C only (4) All A, B and C
16. Which of the following statements are correct regarding relational databases?  
 A - A *record* is a collection of fields.  
 B - A *table* is a collection of records.  
 C - A *relational database* is a collection of tables.  
 (1) A and B only (2) A and C only (3) B and C only (4) All A, B, and C
- Questions 17 to 19 are based on the following partly shown database tables that are used to store data about students, subjects and enrollment details in a school.

#### Student

Student_ID	Student_Name
1001	Saman
1002	Raj
1003	Sharaf
1004	Shane

#### Subject

Subject_ID	Subject_Name	Teacher_Name
S001	Chemistry	Perera
S002	Physics	Selvam
S003	Combined Maths	Nazwar
S004	Geography	Silva
S005	Political Science	Almeida

#### Enroll

Student_ID	Subject_ID	Date
1001	S002	04/01/2022
1005	S001	05/01/2022
1003	S002	09/01/2022
1001	S003	04/01/2022

17. What would be the primary key of the Enroll table?  
 (1) Student\_ID (2) Subject\_ID  
 (3) Subject\_ID + Date (4) Student\_ID + Subject\_ID
18. What would be a foreign key in the database?  
 (1) Subject\_ID in the Subject table (2) Student\_ID in the Student table  
 (3) Date in the Enroll table (4) Subject\_ID in the Enroll table

Page name four



19. Shane dropped the “Geography” subject and enrolled for the “Political Science” subject. Which table/tables needs/need to be updated for this purpose?

- (1) Subject table (2) Subject table and Enroll table  
 (3) Enroll table (4) Student table, Subject table and Enroll table

20. Which of the following is the correct HTML tag sequence for a web page?

- (1) HTML, Body, Title, Head (2) HTML, Head, Title, Body  
 (3) HTML, Title, Head, Body (4) Head, Title, HTML, Body

21. Which of the following statements are correct?

- A - HTML tags determine how the web pages are displayed in a web browser.  
 B - A URL uniquely identifies a web page on the World Wide Web (WWW).  
 C - Hyperlinks allow to link web pages on the World Wide Web.

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

22. What is the correct HTML statement for creating a hyperlink to the official web portal of the Government of Sri Lanka (<http://www.gov.lk>)?

- (1) `<a href="http://www.gov.lk"> Government of Sri Lanka Web Portal </a>`  
 (2) `<a "http://www.gov.lk" </a> Government of Sri Lanka Web Portal`  
 (3) `<a src="http://www.gov.lk" </a> Government of Sri Lanka Web Portal`  
 (4) `<a url="http://www.gov.lk"> Government of Sri Lanka Web Portal </a>`

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

```
<html>
<body>
<table border=2>
<tr> <th>Company Name </th> <th> Contact Number </th> </tr>
<tr> <td rowspan=2> ABC Ltd </td> <td> 011-2222222 </td> </tr>
<tr> <td> 011-9999999 </td> </tr>
<tr> <td> XYZ & Sons </td> <td> 011-7777777 </td> </tr>
</table>
</body>
</html>
```

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

(1) 

Company Name	Contact Number
ABC Ltd	011-2222222
XYZ & Sons	011-9999999
XYZ & Sons	011-7777777

(2) 

Company Name	Contact Number
ABC Ltd	011-2222222
XYZ & Sons	011-7777777
XYZ & Sons	011-9999999

(3) 

Company Name	ABC Ltd	XYZ & Sons
Contact Number	011-2222222	011-7777777
		011-9999999

(4) 

Company Name	ABC Ltd	XYZ & Sons
Contact Number	011-2222222	011-7777777
	011-9999999	

24. Which of the following is a correct example for an Internet Protocol (IP) address?

- (1) 172.64.85 (2) 172.64.85.24 (3) 192.214.78.80.1 (4) 192.214.78.256


25. Which of the following is the commonly used folder that stores deleted messages in an email system?

- (1) Draft (2) Inbox (3) Spam (4) Trash

26. Consider the following URL:

$\underbrace{\text{http://}}_A \underbrace{\text{www.nie.lk}}_B \underbrace{\text{/index.html}}_C$

Which of the following correctly identifies the parts A, B and C of the above URL?

- (1) A-domain name, B-protocol, C-top level domain
  - (2) A-domain name, B-top level domain, C-protocol
  - (3) A-protocol, B-domain name, C- top level domain
  - (4) A-protocol, B- top level domain, C-domain name
27. Which of the following combinations correctly shows an internet service and its corresponding protocol?
- (1) Email, SMTP
  - (2) WWW, FTP
  - (3) Email, FTP
  - (4) File Transfer, SMTP
28. Which of the following best describes the  icon in GIMP image manipulation software?
- (1) blurs or sharpens an image
  - (2) copy one part of a graphic to another part
  - (3) lightens or darkens an image's shadows
  - (4) removes unnecessary colours and spots in an image
29. Consider the following statement with blanks labelled (A) and (B):  
The primary colours .....(A)..... are used to create images on computer screens with each colour having .....(B)..... colour variations, if represented with 8-bits.  
Which of the following is suitable to fill in the blanks labelled (A) and (B), respectively?
- (1) (A): Red, Green, Blue (B): 128
  - (2) (A): Red, Green, Blue (B): 256
  - (3) (A): Yellow, Blue, Red (B): 128
  - (4) (A): Yellow, Blue, Red (B): 256
30. A ..... spreads by inserting copies of itself into executable files in a computer.
- (1) computer worm
  - (2) hijacker
  - (3) spyware
  - (4) trojan horse
31. Which of the following could arise due to the usage of ICT?
- A - e-waste problems  
B - security threats  
C - health hazards
- (1) A and B only
  - (2) A and C only
  - (3) B and C only
  - (4) All A, B and C
32. Which of the following statements are true with regard to the pilot deployment of a new software system?
- A - The existing system is replaced by the new system as soon as its development is completed.  
B - Introduce the newly developed system to a selected set of users before making it available to all.  
C - The new system is deployed in stages and the success of each stage leads to the next stage.
- (1) A only
  - (2) B only
  - (3) C only
  - (4) A and B only
33. Which of the following control structures can be used in an algorithm?
- A - Sequence  
B - Repetition  
C - Selection
- (1) A and B only
  - (2) A and C only
  - (3) B and C only
  - (4) All A, B and C

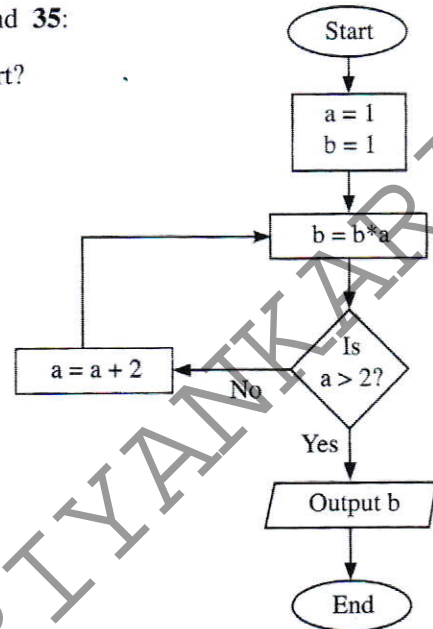
● Consider the given flowchart to answer the questions 34 and 35:

34. What will be displayed as the output of the given flowchart?

- (1) 1 is displayed.
- (2) 3 is displayed.
- (3) 15 is displayed.
- (4) Nothing is displayed.

35. If the labels 'Yes' and 'No' are interchanged in the given flowchart, what will be displayed as its output?

- (1) 1 is displayed.
- (2) 3 is displayed.
- (3) 15 is displayed.
- (4) Nothing is displayed.



36. How many times will the statement "count = count - 3" execute in the following code segment?

```

count=12
WHILE count >= 3
    count = count - 3
END WHILE
    
```

- (1) 3
- (2) 4
- (3) 5
- (4) 6

● Consider the following "Books" array which is used to store prices of 8 books to answer questions 37 and 38.

Books:	96	75	105	200	54	100	63	80
--------	----	----	-----	-----	----	-----	----	----

37. Which of the following correctly defines the "Books" array in a PASCAL program?

- (1) var Books = array[7];
- (2) var Books : array[0-7];
- (3) var Books : array[0..7] of integer;
- (4) var Books : array[0 to 7] of integer;

38. Which of the following represents the most expensive book?

- (1) Book[3]
- (2) Books[3]
- (3) Book[4]
- (4) Books[4]

39. Consider the following logic gate:



When B = 1, then what would definitely be the output at Q?

- (1) A
- (2)  $\bar{A}$
- (3) A + B
- (4)  $\bar{A} + B$

40. Given below is the truth table for a logic gate with inputs A, B and output Q:

A	B	Q
0	0	1
0	1	1
1	0	1
1	1	0

What is the logic gate indicated by the above truth table?

- (1) AND
- (2) NAND
- (3) NOR
- (4) OR

අ.පො.ස. (සා.පෙළ) විභාගය - 2021 (2022)  
க.பொ.த. (சா.தர)ப் பரீட்சை - 2021 (2022)

විෂය අංකය  
பாட இலக்கம்

80

විෂය  
பாடம்

තොරතුරු හා සන්නිවේදන තාක්ෂණය

I පත්‍රය - පිළිතුරු

I பத்திரம் - விடைகள்

ප්‍රශ්න අංකය வினா இல.	පිළිතුරෙහි අංකය விடை இல.	ප්‍රශ්න අංකය வினா இல.	පිළිතුරෙහි අංකය விடை இல.	ප්‍රශ්න අංකය வினா இல.	පිළිතුරෙහි අංකය விடை இல.	ප්‍රශ්න අංකය வினா இல.	පිළිතුරෙහි අංකය விடை இல.
01.	4	11.	3	21.	4	31.	4
02.	3	12.	3	22.	1	32.	2
03.	3	13.	1	23.	1	33.	4
04.	2	14.	1	24.	2	34.	2
05.	4	15.	2	25.	4	35.	1
06.	2	16.	4	26.	3	36.	2
07.	3	17.	4	27.	1	37.	3
08.	1	18.	4	28.	2	38.	2
09.	2	19.	3	29.	2	39.	1
10.	1	20.	2	30.	1	40.	2

විශේෂ උපදෙස්  
விசேட அறிவுறுத்தல்

එක් පිළිතුරකට ලකුණු  
ஒரு சரியான விடைக்கு

01

බැගින්  
புள்ளி வீதம்

මුළු ලකුණු / மொத்தப் புள்ளிகள் 01 × 40 = 40

පහත නිදසුනෙහි දක්වන පරිදි බහුවරණ උත්තරපත්‍රයේ අවසාන තීරුවේ ලකුණු ඇතුළත් කරන්න.  
கீழ் குறிப்பிடப்பட்டிருக்கும் உதாரணத்திற்கு அமைய பல்தேர்வு வினாக்களுக்குரிய புள்ளிகளை பல்தேர்வு வினாப்பத்திரத்தின் இறுதியில் பதிக.

නිවැරදි පිළිතුරු සංඛ්‍යාව

25

சரியான விடைகளின் தொகை

40

I පත්‍රයේ මුළු ලකුණු

25

பத்திரம் I இன் மொத்தப்புள்ளி

40

## Paper II

1. (i)-----[2]

1. (i) The teachers in a particular school are expected to mark their attendance using a fingerprint machine, which is connected to a computer system. The system generates a monthly attendance report.  
Write down **one** example for an input and **one** example for an output of the above information system.

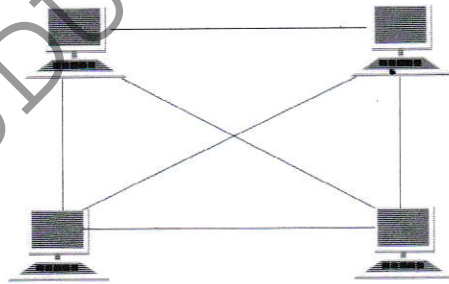
Input : Fingerprint ----- 1 mark

Output : Monthly Attendance Report ----- 1 mark

(ii) (a)-----[1]

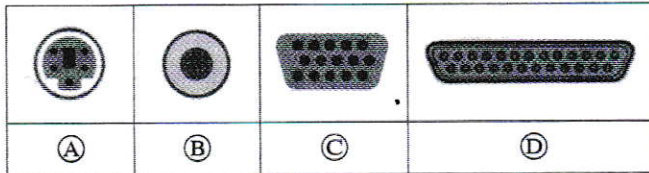
- (ii) (a) Draw a diagram to connect four computers namely  $C_1$ ,  $C_2$ ,  $C_3$  and  $C_4$  based on the *mesh* topology.

[1 mark if all six connections are clearly drawn; Otherwise 0 mark ]



(b) -----[1]

(b) Consider the following computer ports labelled A – D.



Match each of the above ports with the name of the ports given in the following list in the **label → port** format.

**Ports :** {Audio, HDMI, PS/2, Parallel, RJ45, Serial, USB, VGA}

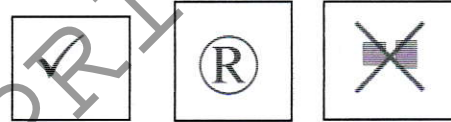
[If all four correct **1 mark**, 2 or 3 correct **0.5 marks**, Otherwise **0 marks**]

A → PS/2

B → Audio

C → VGA

D → Parallel



(iii) (a) -----[1]

(iii) (a) Convert  $47_{10}$  to its binary equivalent.

101111 (base 2 is not required)

(b) -----[1]

(b) Following is an extract from the ASCII table. Write down the correct octal value replacement for the '?' symbol.

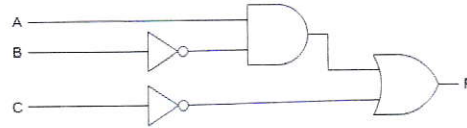
Character	Decimal	Hexadecimal	Binary	Octal
a	97	61	1100001	?

141 (base 8 is not required)

(iv) (a)-----[1]

(iv) (a) Draw the logic gate circuit for the following Boolean expression:

$$F = \bar{C} + A\bar{B}$$



Inputs and outputs must be clearly indicated.

(b)-----[1]

(b) Write down the value of F when A = 0, B = 1 and C = 1.

0 (zero)

(v) (a)-----[1]

(v) There is a very important software that runs on a computer. It manages various resources of the computer. It also lets the users communicate with the computer. This particular software coordinates and fulfils the requirements of all processes with respect to their central processing unit (CPU), memory and storage needs.

(a) What is the specific software referred to in the above paragraph?

[ignore case/space defects]

Operating System // OS

(b)-----[1]

(b) Give **one** example for it.

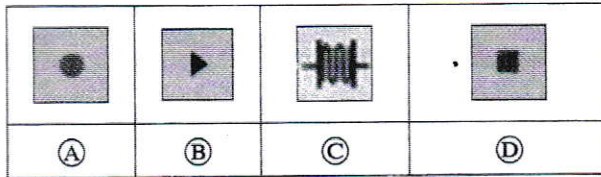
[if more than one answer is given, consider only the first one]

**Any one from**

- Microsoft Windows
- Linux (Ubuntu, CentOS, Fedora, Debian, Red Hat Enterprise Linux, Linux mint, OpenSUSE, Manjaro, Elementary, Zorin, FreeBSD, Hantana Linux, Isuru Linux)
- Unix
- MacOS (OSX)
- Chrome OS
- DOS
-

(vi) -----[2]

(vi) The following table shows some of the icons labelled (A)–(D) of the Audacity audio editing software.



Identify the suitable description for each of the icons (A)–(D) from the description list numbered (1)–(6). Write down each icon label and its corresponding description number in **label → number** format.

<b>Description</b>	Trim Audio	Record	Select	Stop	Skip to End	Play
<b>Number</b>	(1)	(2)	(3)	(4)	(5)	(6)

[0.5 marks x 4=2 Marks]

- A → 2 (Record)  
B → 6 (Play)  
C → 1 (Trim Audio)  
D → 4 (Stop)



(vii) -----[2]

(vii) Match the descriptions labelled (P)–(S) with the correct terms from the list of terms given below and write down the relevant term against each label in the **label → term** format.

Label	Description
(P)	Used for electronic mail exchange among mail servers on the Internet
(Q)	Provides access to the software installed in the cloud
(R)	Folder to store mails that are composed to be sent, but not completed yet
(S)	Used to uniquely identify a computer on the Internet

List of terms : {FTP, SMTP, URL, IP address, IaaS, Trash, Draft, SaaS}

[0.5 marks x 4=2 Marks]

- P → SMTP  
Q → SaaS  
R → Draft  
S → IP Address





(viii) -----[2]

(viii) The following algorithm is used to select players for a Rugby pool. The selection is done based on the height, weight, and age of the player.

```
If((Age >= 21) AND (Height >= 160 OR Weight >= 70))
    Output "Qualified for the pool"
Else
    Output "Not qualified for the pool"
```

The age, height, and weight of three candidates are given below.

Name	Age	Height (cm)	Weight (kg)
Nirmal	21	159	71
Rajeev	36	165	72
Saleem	25	150	69

Write down the names of all players who are qualified for the pool.

[Ignore spelling/case defects, 2 marks for the correct answer, otherwise 0]

Nirmal and Rajeev

(ix) a) -----[1]

(ix) (a) Write down **one** recommendation to avoid the Computer Vision Syndrome (CVS).

[One mark per any of the following. If more than one answer is given, consider only the first answer]

Take regular breaks  
Blink frequently  
Use the right eyeglasses  
Maintain a proper (at least 50 cm/20 inches) distance

b) -----[1]

(b) Write down **one** proper method for electronic waste (e-waste) management.

[One mark per any of the following. If more than one answer is given, consider only the first answer]

Reduce  
reuse  
recycle  
3 R - Concept

(x) -----[2]

(x) Write down **two** advantages of computerized Database Management Systems (DBMS).

**[One mark per any of the following. Maximum of two. If more than two answers are given, consider only the first two]**

More efficient in retrieving information.

Easy to obtain copies.

Smaller physical space required to store data.

Data analysis can be carried out efficiently.

Data can be shared.

Sir UDULA PRIYANKARA ✓

2. (i)----- [4]

2. (i) Match the descriptions labelled (A)–(D) with the correct terms from the list of terms given below and write down the relevant term number against each label in the **label → term number** format.

Label	Description
(A)	Used to connect two or more computer networks
(B)	Used in satellite communication to transmit data
(C)	Used to transmit data using reflection of light
(D)	Used in connecting TV antenna and analog CCTV cameras

List of terms : {1 – Coaxial Cable, 2 – Fibre Optics Cable, 3 – Microwaves, 4 – Modem, 5 – Radio Waves, 6 – Repeater, 7 – Router, 8 – Unshielded Twisted Pair Cable}

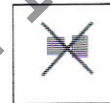
[For each correct answer 1 mark]

A → 7 (Router)

B → 3 (Microwaves)

C → 2 (Fibre Optics Cable)

D → 1 (Coaxial Cable)



(ii)----- [4]

(ii) Consider the following statements labelled (P)–(S) and the two words given against each statement within square brackets. Write down the statement label and the appropriate word corresponding to the blank in each of the statements in the **label → word** format.

(P) The quality of a given digital image is determined by the ..... [ppm, dpi] value.

(Q) ..... [RGB, CMYK] primary colour model is widely used in computer screens.

(R) Image files such as JPEG and TIFF that are compressed using ..... [lossy, lossless] compression facilitates fast downloading from the Internet.

(S) ..... [Vector, Raster] images can be created using software such as Adobe Photoshop and GIMP.

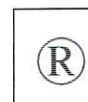
[For each correct answer 1 mark]

P → dpi

Q → RGB

R → lossy

S → Raster



(iii)----- [2]

(iii) Match the descriptions labelled (K)–(N) with the correct terms from the list of terms given below and write down the relevant term number against each label in the label → term number format.

Label	Description
(K)	Releasing unsuitable photographs of young girls on the Internet and making use of such images for threatening or blackmailing
(L)	The act of presenting another's creative work as one's own
(M)	The gap between those who have access to Information and Communication Technology (ICT) and those who do not
(N)	Deceiving users via email to collect their credit card information

List of terms : {1–Misuse of Social Media, 2–Phishing, 3–Plagiarism, 4–Cybercrime, 5–De-Skilling, 6–Digital Divide}

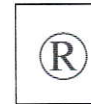
[For each correct answer 0.5 marks]

K → 4 (Cyber crime)

L → 3 (Plagiarism)

M → 6 (Digital Divide)

N → 2 (Phishing)



3. (i) (a)-----[1]

3. Following are the **partly shown** database tables that are used to store details about food items, purchases and suppliers of a school canteen. The canteen sells food items which are purchased from the suppliers.

**Table: Item**

(Contains data of the items available in the canteen with their selling prices in Rupees.)

Item_ID	Item_Name	Selling_Price
F001	Tea bun	40
F002	Fish roll	70
F003	Chicken roll	65
F004	Vegetable roll	60

**Table: Purchase**

(Contains data of the purchasing prices of items from different suppliers. Note that a particular food item can be purchased from many suppliers for different prices.)

Item_ID	Supplier_ID	Purchasing_Price
F001	S007	30
F001	S004	35
F003	S001	60
F004	S004	55

**Table: Supplier**

(Contains data about suppliers.)

Supplier_ID	Supplier_Name	Supplier_Location
S001	Saman	Maradana
S002	Raj	Borella
S003	Sharaf	Dematagoda
S004	Shane	Maradana

(i) (a) Write down the *primary key* of the **Purchase** table.

[Exact spelling is required including “\_” sign, ignore case/space defects]

- Item\_ID + Supplier\_ID //
- Both Item\_ID and Supplier\_ID //
- Combination of Item\_ID and Supplier\_ID //

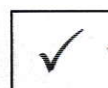
(b)-----[2]

(b) Write down the *foreign keys* in the **Purchase** table.

[1 mark x 2 = 2 marks]

[Exact spelling is required including “\_” sign, ignore case/space defects]

Item\_ID  
Supplier\_ID



(ii) (a)-----[1]

(ii) Which tables need to be updated to accommodate the following?

(a) The supplier S004 changes his location (Supplier\_Location) to Rajagiriya.

[Exact spelling is required, ignore case defects]

Supplier



(b)-----[2]

(b) The canteen decides to increase the selling price of a fish roll to 80 Rupees due to a 10 Rupee price increase by the supplier.

[2 or 0 marks; 2 marks if both table names are correct, otherwise 0 marks. Exact spelling is required, ignore case defects]

Item  
Purchase

(iii) -----[2]

(iii) A new supplier Kantal (Supplier\_ID: S008) from Wellawatte starts supplying vegetable rolls to the school canteen for 50 rupees. Write down the new record(s) to be added to the relevant table(s) for the above change. Use the *tablename* → (*field1*, *field2*, ...) format for each new record.

[Ignore case and space defects, exact spelling is required]

Supplier → (S008, Kamal, Wellawatte)

----- 1 mark

Purchase → (F004, S008, 50)

----- 1 mark

(iv)-----[2]

(iv) What are the appropriate tables to be joined to write a query to find the names of the suppliers who supply fish rolls to the canteen?

[2 or 0 marks; 2 marks if all three table names are correct, otherwise 0 marks. Exact spelling is required, ignore case defects]

Item, Purchase, Supplier (all three tables)

4. (i) (a) -----[2]

4. (i) Use the following list of terms in answering questions (a) and (b).

**List of terms** : {Mozilla Firefox, Google, IaaS, HTTP, Pascal, PHP, Twitter, WordPress, Joomla, Internet Explorer} .

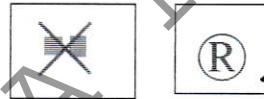
(a) Match the descriptions labelled (A)–(D) with the correct terms from the list of terms given above and write down the relevant term against each label in the **label → term** format.

Label	Description
(A)	Search engine
(B)	Internet service protocol
(C)	Commonly used programming language for dynamic web development
(D)	Social network

[0.5 marks x 4 = 2 marks]

[Ignore case defects. Exact spelling is required for HTTP and PHP]

- A → Google
- B → HTTP
- C → PHP
- D → Twitter



(b) -----[2]

(b) Identify the most suitable term to fill each blank labelled (P)–(S) from the list of terms given above and write down the relevant term against each blank label in the **label → term** format.

- Web pages can be developed using a Content Management Systems (CMS) such as .....(P)..... and .....(Q)..... .
- The public can access a website through a web browser such as .....(R)..... or .....(S)..... .

[0.5 marks x 4]

Any one of these

Answer 1	Answer 2	Answer 3	Answer 4
P -> WordPress	P -> Joomla	P -> WordPress	P -> Joomla
Q-> Joomla	Q-> WordPress	Q-> Joomla	Q-> WordPress
R-> Mozilla Firefox	R-> Mozilla Firefox	R-> Internet Explorer	R-> Internet Explorer
S-> Internet Explorer	S-> Internet Explorer	S-> Mozilla Firefox	S-> Mozilla Firefox

(ii) The HTML source of the web page shown in Figure 1 is given in Figure 2 with certain missing tags labelled ❶ to ❿.

You are required to write down the label number and the corresponding HTML tag selecting from the list given below.

List : {title, h2, ul, li, table, tr, th, td, img, src, center, a}

**Sri Lanka's strong vaccination programme assisted in controlling COVID-19**

Sri Lanka has made great progress in controlling the spread of COVID-19; however, the threat is not over yet.

- **Progress of COVID-19 Immunization as of 11.04.2022**

Type of Dose	Number of Vaccinations	% of Population
First Dose	17,033,222	77.6%
Second Dose	14,449,321	65.9%
Booster Dose	7,959,881	36.1%

- **Monthly Covid 19 active cases in Sri Lanka from 2020 to 2022**

**For further information: [World Health Organization](#)**

Sir



```

<html>
<head> <1> Covid 19 Vaccination in Sri Lanka </1> </head>
<body>
<center> <2> Sri Lanka's strong vaccination programme assisted in controlling COVID-19 </2>
</center>

Sri Lanka has made great progress in controlling the spread of COVID-19; however, the threat is
not over yet.

<3>
<4><h3>Progress of COVID-19 Immunization as of 11.04.2022</h3></4>
<5 border="4" align="center">
<6>
<7>Type of Dose</7>
<7>Number of Vaccinations</7>
<7> % of Population </7>

</6>
<6>
<td>First Dose </td> <td>17,033,222 </td> <td> 77.6% </td>
</6>
<6>
<td>Second Dose</td> <td>14,449,321</td> <td> 65.9% </td>
</6>
<6>
<td>Booster Dose</td> <td>7,959,881</td> <td> 36.1% </td>
</6>
</5>

<4><h3>Monthly Covid 19 active cases in Sri Lanka from 2020 to 2022</h3></4>

<8> <9 src="active_cases.png" width="400" height="180" alt="Vaccine Photo"> </8>

<3>
<p>
<h3> For further information: <10 href="https://www.who.int/srilanka"> World Health Organization
</10></h3>
<p>
</body>
</html>

```

Figure 2: HTML Source

[Exact tag spelling is required. Ignore case defects]

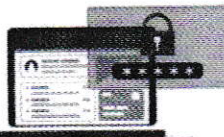
- |           |       |             |
|-----------|-------|-------------|
| 1. title  | ----- | [0.5 marks] |
| 2. h2     | ----- | [0.5 marks] |
| 3. ul     | ----- | [0.5 marks] |
| 4. li     | ----- | [0.5 marks] |
| 5. table  | ----- | [0.5 marks] |
| 6. tr     | ----- | [0.5 marks] |
| 7. th     | ----- | [0.5 marks] |
| 8. center | ----- | [0.5 marks] |
| 9. img    | ----- | [1 mark]    |
| 10. a     | ----- | [1 mark]    |

5. (i) -----[4]

5. (i) Segment of a word-processed document is shown below with some formatting done. These formatting tasks are labelled as ①–⑤. Before formatting, all the text in the original document had the same font size.

Protect Yourself against Cyber Attacks ← ①

You can avoid cyber risks by taking steps in advance:











← ③

- ④ • Limit the personal information you share online
- Create strong passwords by using letters, numbers, and special characters
- Use antivirus and anti-malware solutions, and firewalls to block threats
- Do not click on hyperlinks in emails received from unknown sources.

Source: <https://www.ready.gov/cybersecurity> ← ⑤

Following are the icons of some formatting tools in a word processing software:

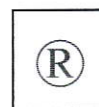
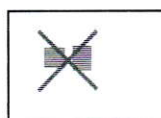
Icon of the formatting tool						 Picture		
Icon label	Ⓟ	Ⓞ	Ⓡ	Ⓢ	Ⓣ	Ⓤ	Ⓥ	Ⓦ

Identify the icons of formatting tools, indicated by the labels Ⓟ–Ⓦ which are required to do the formatting tasks indicated by the labels ①–⑤. Write down the label of each formatting task ①–⑤ and its matching icon label of the formatting tool in the **task label → icon label** format.

[ALL 5 CORRECT- 4 MARKS, 3-4 CORRECT-3 MARKS, 2 CORRECT-2 MARKS, 1 CORRECT- 1 MARK]

[Ignore case defects]

- 1 → T
- 2 → V
- 3 → U
- 4 → P
- 5 → S



(ii) (a) -----[1]

(ii) The following spreadsheet segment shows some statistics of road accidents reported for 2018.

	A	B	C	D	E
1	<b>Accident Data for Year 2018</b>				
2		<b>Type of Accident</b>			
3	<b>Vehicle Type</b>	<b>Fatal</b>	<b>Minor</b>	<b>Critical</b>	<b>Damages</b>
4	Motor Cycles	1,227	4,524	3,382	1,358
5	Lorry	344	1,022	843	1,668
6	Dual Purpose Vehicle	318	1,396	977	1,668
7	Private Buses	237	653	498	1,046
8	Three - Wheelers	365	2,496	1,354	1,728
9	SLTB Buses	62	232	189	269
10	Motor Cars	210	1,486	952	3,036
11	Cycle	42	108	71	62
12					
13	<b>Total -Accidents</b>	<b>2,805</b>	<b>11,917</b>	<b>8,266</b>	<b>10,835</b>
14	<b>Lowest value-Critical</b>			71	
15	<b>Highest value-Accidents</b>	4,524			
16					

(a) Write down the correct formula in the form of  $=function(cell1:cell2)$  that should be entered in cell B13 to find the total number of vehicles involved in fatal accidents.

[Exact spelling is required, parentheses needed, ignore case/space defects]

=SUM(B4:B11)

(b) -----[1]

(b) Assume that the formula entered into the cell B13 is copied to cell range C13:E13. Write down the formula displayed in the cell D13.

[Exact spelling is required, parentheses needed, ignore case/space defects]

=SUM(D4:D11)

(c) -----[1]

(c) Write down the formula in the form of  $=function(cell3:cell4)$  that should be entered in cell D14 to get the lowest value recorded for critical accidents.

[Exact spelling is required, parentheses needed, ignore case/space defects]

=MIN(D4:D11)

(d)-----[1]

(d) Write down the appropriate cell range in the form of (cell5;cell6) for the formula written in cell B15 to identify the highest number of any accident.

[if written with correct formula with correct cell range as =MAX(B4:E11) give marks]

(B4:E11) or (E11:B4)

(e) (1)-----[1]

(e) Write down the most suitable chart type available in spreadsheet software from the given list of charts for the following:

(1) To show comparisons of the types of accidents involving each vehicle type in the same graph.

**List of charts for part (1):** {Area, Bar, Pie, Scatter}

[Exact spelling is required, ignore case/space defects]

Bar chart



(2)-----[1]

(2) To show the number of fatal accidents for each vehicle type.

**List of charts for part (2):** {Area, Line, Pie, Scatter}

[Exact spelling is required, ignore case/space defects]

Pie chart



6. (i) (a)-----[1]

6. (i) Aruni is an O/L student. In addition to her studies, she writes essays that she submits to various newspapers. She has stored a considerable number of mp3 files in her computer. In addition, many digital pictures that she has taken are also stored on her computer. Her parents have also asked her to store all the online payment receipts on her computer as well.

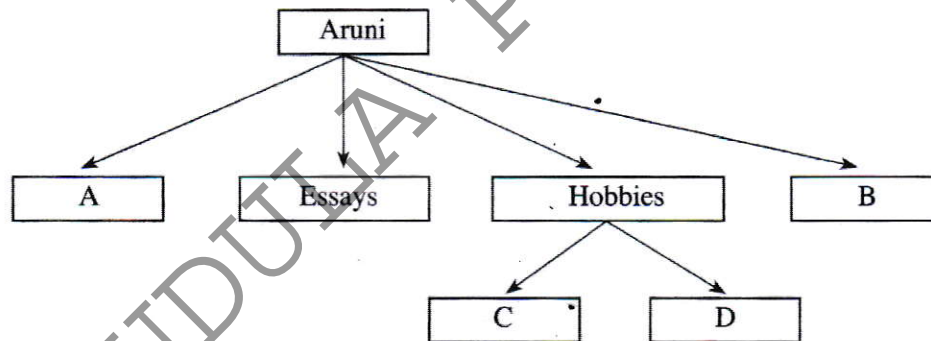
Aruni stores **all** the files related to the above, in **one** single folder (directory) on her computer.

(a) Write down a problem that Aruni might face when searching a particular file in the existing storage scheme.

Difficulty in finding files // time consuming to find files

(b)-----[1]

(b) Following folder structure is suggested for Aruni. Match the folder labels against the folder names given in the list, in the **folder label** → **name** format.



List of folder names : {Receipts, Music, Pictures, Studies}

[1 or 0 marks only; ignore spelling/case/space defects]

Answer 1	Answer 2	Answer 3	Answer 4
A → Studies	A → Receipts	A → Studies	A → Receipts
B → Receipts	B → Studies	B → Receipts	B → Studies
C → Music	C → Music	C → Pictures	C → Pictures
D → Pictures	D → Pictures	D → Music	D → Music

(c)-----[1]

(c) Write **one** practice Aruni can follow to avoid her hard disk becoming full.

[if more than one answer is given, consider only the first one]

**Any one from**

- periodically remove all unwanted files
- install only the necessary software
- remove all unwanted/unused software
- move files to other storage devices
- store compressed files (e.g., mp3)
- Use the disk cleanup tool
- Save to cloud
- discard temporary files
- do not download files unnecessarily
- eliminate duplicate files



(d)-----[1]

(d) Write **one** practice that Aruni could have followed to avoid losing data in the event of a computer failure.

[if more than one answer is given, consider only the first one]

taking periodic backups // copying files to other storage media // saving files in the cloud

(ii) (a)-----[1]

(ii) A hospital is planning to introduce a new computerized system to overcome the issues in the existing patient management system. A team was assigned to do the development of the above system.

- (a) The team decides to develop the system in small portions allowing the hospital management to provide regular feedback. What is the most suitable system development life cycle model that the team should use?

Iterative incremental // prototyping // spiral

(b)-----[1]

(b) The hospital management conducts a testing session to decide whether the newly developed system can be approved or not. What is the test that the hospital management should perform?

Acceptance testing

(c)-----[1]

(c) The hospital management wanted to terminate the existing system immediately and replace it with the newly developed one. What is the deployment method wanted by the hospital management?

Direct Deployment

(d)-----[1]

(d) The development team suggested introducing the new system initially to the Kandy branch of the hospital before deploying it to all other branches. What is the deployment method suggested by the development team?

Pilot deployment

(iii) -----[2]

(iii) A school library is planning to introduce a computerized library management system to replace the existing manual system. List **two** techniques that could be used for requirement identification.

[1 marks x 2 = 2 marks]

[if more than two answers are written, consider only the first two]

Interviews  
Observations  
Document sample collection  
Questionnaires  
Prototyping



7. (i) (a) -----[2]

7. (i) Answer parts (a) and (b) based on the following pseudocode:

```
BEGIN
  counter = 0, x = 0
  WHILE counter < 20
    DISPLAY "Enter a Number"
    READ num
    x = x + num
    counter = counter + 1
  ENDWHILE
  DISPLAY x
END
```

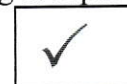
(a) What is the exact purpose of the above pseudocode?

Read 20 numbers and find/display their total

(b) -----[2]

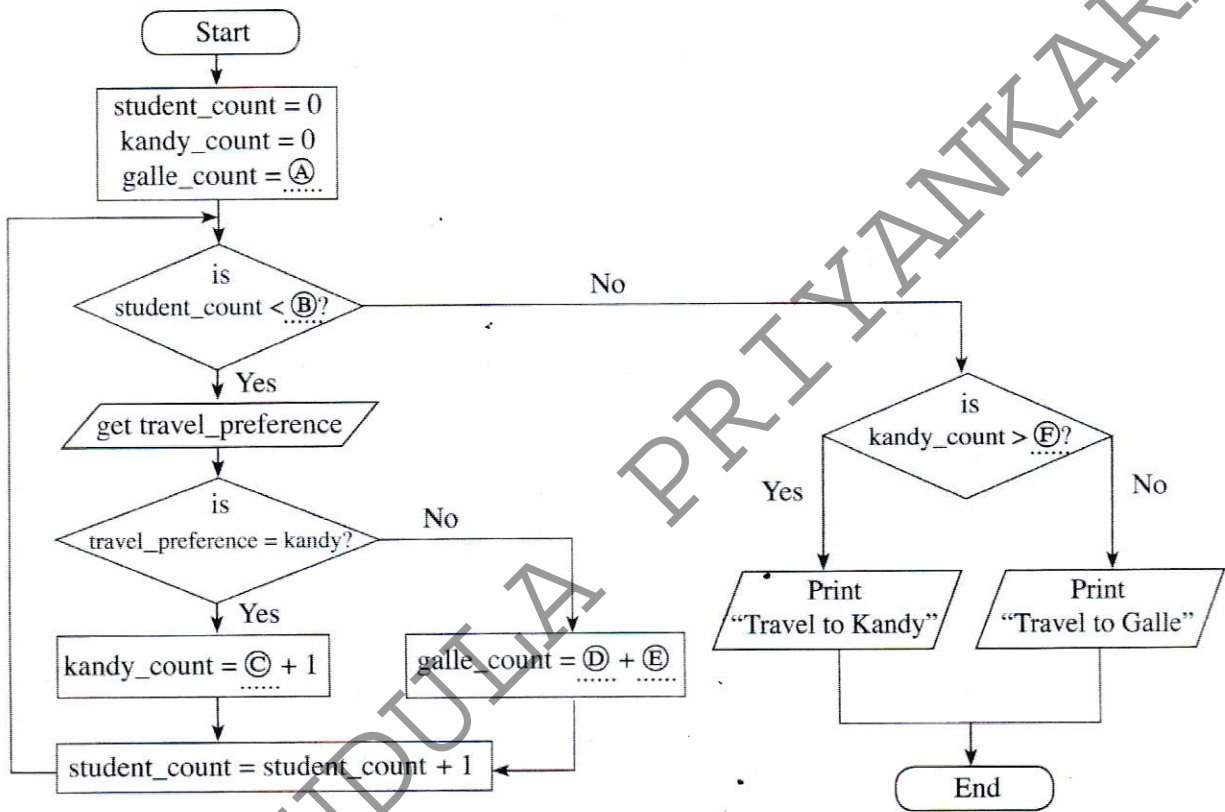
(b) What would happen if the statement "counter = counter + 1" is removed from the pseudocode?

Infinite loop // program will not terminate // continuously asking to input a number and reading it (logical error is also acceptable)





(ii) A teacher asked from 50 students to choose their preferred travel destination (either Kandy or Galle) for the annual school trip. The destination will be decided based on the highest student preference. The following flowchart with blanks labelled from Ⓐ to Ⓕ represents this scenario.



Write down the appropriate answers to match the labels Ⓐ to Ⓕ in the label → answer format.

[1 mark x 6 = 6 marks]

[Exact spelling (including “\_”) is required. Ignore space/case defects]

Answer 1	Answer 2
A: 0	A: 0
B: 50	B: 50
C: kandy_count	C: kandy_count
D: galle_count	D: 1
E: 1	E: galle_count
F: galle count	F: galle count

- End of the Marking Scheme -