සියලුම හිමිකම් ඇවිරිණි/முழுப் பதிப்புரிமையுடையது/All Rights Reserved

දකුණු පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
தென் மாகாணக் கல்வித் திணைக்களம்
Department of Education, Southern Province

අවසාන වාර පරීක්ෂණය - 2025
இறுதி தவணைப் பரீட்சை - 2025 / Year End Term Test - 2025

ශ්‍රේණිය தரம் Grade	11	Information and Communication Technology I, II	කාලය நேரம் Time	03 hours

නම பெயர் Name ..... විභාග අංකය சுட்டிலக்கம் Index No. .....

Information and Communication Technology I	
Additional reading time -10 minutes	Use additional reading time to go through the question paper, select the questions and decide on the questions that you give priority.
• 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. What is the primary purpose of the signals generated by the Control Unit during data transmission and operations in a computer system?
   (1) To indicate that data and instructions are available to the computer
   (2) To generate binary data
   (3) Converting analog and digital signals within the system
   (4) Managing the system process in the correct order

2. In computer coding, which coding system is mainly used for representing letters and symbols in languages such as Sinhala and Tamil?
   (1) EBCDIC (2) ASCII (3) BCD (4) Unicode

3. During a seminar on the applications of ICT in society, the term "Tele Monitoring" was used. To which field does "Tele Monitoring" mainly relate?
   (1) Education (2) Agriculture (3) Business (4) Healthcare services

4. When classifying the history of computers, consider the following statements regarding the use of Integrated Circuits (IC).
   A - The use of ICs resulted in the reduction of the size of computer systems and the increase in efficiency.
   B - ICs were mainly used as the core technology in second-generation computers.
   C - Before the third generation, transistors were used as the main technology, and ICs were developed by integrating those transistors into small circuits.
   Which of the above statement/s is/are correct or most suitable?
   (1) A and B only (2) A and C only (3) B only (4) All A, B and C

5. Which of the following is the hexadecimal equivalent to binary 111101_2?
   (1) 75_{16} (2) $3D_{16}$ (3) $3E_{16}$ (4) 61_{16}

Past Papers Wiki

6. When installing a server that handles a large amount of data, it is important to consider storage capacity, speed, and cost. Which of the following correctly represents the proper order among RAM, cache, and hard disk?

(1) Cache > RAM > Hard Disk (According to Capacity)
(2) Hard Disk > RAM > Cache (According to Cost)
(3) Cache > RAM > Hard Disk (According to Speed)
(4) RAM > Hard Disk > Cache (According to Capacity)

7. You need to store the following data on a computer.

- Several photo files – 500 MB
- A movie (video) – 1 GB
- A document – 100 KB

What is the minimum capacity required to save all these data on a single USB flash drive?

(1) 1 GB (2) 2 GB (3) 4 GB (4) 8 GB

8. Under the Student-Centered Smart Classroom (SLSC) project, all smart devices (Smart Boards, tablets, and servers) are planned to be connected to a single, efficient learning platform. This setup enables interactive, multi-channel learning between students and teachers. Consider the following statements regarding the planning and implementation of this project

A - For data exchange within a limited geographical area, such as a single classroom or school building, a Local Area Network (LAN) is the most suitable option.

B - If two students exchange notes directly between their tablets without connecting to a teacher or main server, this can be classified as a Peer-to-Peer (P2P) network according to network role classification.

C - When connecting this project to the Provincial Learning Management System (WISDOM CLOUD LMS), it may be necessary to utilize broader networks, such as a Metropolitan Area Network (MAN) or a Wide Area Network (WAN).

Based on these statements, which option/options is/are correct?

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

9. What is the utility function of an operating system responsible for partitioning a computer's hard disk into multiple sections?

(1) Error Handling (2) Storage Management
(3) Process Management (4) User Interface

10. For a logic gate in a computer, the output is '1' under the following conditions

A input = 1, B input = 1, C input = 0

Which Boolean expression accurately represents this condition?

(1) $\overline{A} \cdot B \cdot \overline{C}$ (2) $\overline{A} + B \,.\, C$ (3) $A \cdot B \cdot \overline{C}$ (4) $A \cdot B \cdot C$

11. When performing file management operations in the computer lab, which operation should be used to remove an unused file from a folder?

(1) Rename (2) Copy (3) Delete (4) Move

12. According to the truth table, when will a NOR gate with inputs A and B get output '1'?

(1) A = 1, B = 0 (2) A = 0, B = 1 (3) A = 1, B = 1 (4) A = 0, B = 0

13. When designing a security system, "If the door open sensor (D) or the window open sensor (W) is active (1), then the alarm (A) should be activated."
Which basic logic gate is required to draw a simple logic diagram representing this logic?

(1) NOT (2) AND (3) OR (4) NAND

14. When using a word processing software like MS Word or LibreOffice Writer, what is the key combination used to remove a selected text from the document and move it to another location?

(1) Ctrl + C and Ctrl + V (2) Ctrl + C and Ctrl + X
(3) Ctrl + X and Ctrl + V (4) Ctrl + A and Ctrl + P

Study the following spreadsheet segment to answer questions **15** to **17**.

A student was instructed to complete the y-coordinates in the following spreadsheet table for drawing a straight-line graph of the form y = mx + c, using m=3 and c=5.

	A	B
1	x	y
2	1	
3	2	
4	3	
5	m	3
6	c	5
7		

15. In a calculation like this, what is the main advantage of using an Absolute Cell Reference when copying the formula vertically or horizontally across a cell range?

(1) It speeds up calculations. (2) Only the cell content is copied.
(3) Both the column and row of the formula automatically change. (4) The cell reference value does not change when copying.

16. The formula in cell B2, which matches the equation y = 3x + 5, should return the value of y when copied to cells B3 and B4.
What is the correct formula to be entered in cell B2?

(1) =(B5*A2)+B6 (2) =($B$5*A2)+$B$6 (3) =(B$5 * A$2) + B$6 (4) =(B2* A5)+B3

17. If the correct formula from Question 16 is entered in cell B2 and then copied to cell B4, which formula will appear in B4?

(1) =($B$5*A2)+$B$6 (2) =($B$5 * A3)+$B$6
(3) =($B$5*A4)+$B$6 (4) =(B4*A4)+B6

18. When preparing a presentation, which feature controls how images and text appear on the screen to attract the attention of the audience?

(1) Slide Transitions (2) Custom Animations
(3) Slide Layout (4) Presentation Software

19. A teacher wants to send the same letter to 100 students, but each student's name, marks, and address must be different. Which feature of a word processing software is most efficient for this purpose?

(1) Find and Replace (2) Mail Merge
(3) Document Templates (4) Styles and Formatting

20. In a computer programming language, what term is used for the names defined by the user?

(1) Reserved words (2) Variable
(3) Identifiers (4) Constant

21. What is the main advantage of using sub programs in a program?

(1) Faster program execution (2) Improved code reusability

(3) Reduced memory usage (4) Easier management of data types

22. What will be the result of the following Pascal statement?

result: = 15 div 4 + 3 * 2;

(1) 9.75 (2) 10.0 (3) 9 (4) 12

23. In a program using a one-dimensional array, which index should be used to access the fifth element of the array?

(1) Array[5] (2) Array[6] (3) Array[4] (4) Array[1]

24. What will be the output of the following pseudo code?

```
i = 1
total = 0
While i <= 3
  total = total + i
  i = i + 1
End While
Output total
```

(1) 1
(2) 3
(3) 6
(4) 10

25. When converting a flowchart into pseudo code, which structure in the pseudo code represents the decision part shown as a diamond shape in the flowchart?

(1) Sequence (2) Selection (3) Iteration (4) Process

26. To check whether a number is even or odd, which arithmetic operators should be used?

(1) + and - (2) * and / (3) MOD and = (4) DIV and >

Answer questions **27** to **30** using the following database tables and related information. A Curriculum Mapping process has been proposed for the effective use of the Smart Classroom project in the Southern Province as a part of the new educational reform for Grade 6. Hathtaka Maha Vidyalaya created the following three database tables for this Curriculum Mapping.

MAPS_CURRICULUM

Unit_ID	**Subject**	**ICT_Tool_Type**	**CMap_Status**
6SCI01	Science	Simulation	Mapped
6MTH03	Mathematics	Interactive Board	Mapped
6SNH02	Sinhala	Multimedia	Unmapped
6HIS01	History	Presentation	Mapped

CLASS_SCHEDULE

Schedule_ID	**Unit_ID**	**Day**	**Time_Slot**
SC001	6SCI01	Monday	8:30 – 9:10
SC002	6MTH03	Monday	9:10 – 9:50
SC003	6SNH02	Tuesday	10:10 – 10:50
SC004	6HIS01	Wednesday	8:30 – 9:10

TEACHER_USAGE

Teacher_ID	**Teacher_Name**	**Room_No**	**Available_Start_Time**
T001	A. Perera	R01	11:30
T002	K. Silva	R02	08:30
T003	N. Samarathna	R01	14:00
T004	D. Alwis	R03	10:10

27. What is the main reason for using the Unit_ID field in the CLASS_SCHEDULE table as a Foreign Key?
(1) Because it can act as a Composite Primary Key.
(2) To ensure the uniqueness of Unit_ID in the MAPS_CURRICULUM table and link the tables.
(3) Because the field values may be repeated.
(4) Because it stores daily time table data.

28. It is necessary to identify all subject units where the Curriculum Mapping Status (CMap_Status) is 'Unmapped'. What criteria should be applied to the CMap_Status field when creating queries on the MAPS_CURRICULUM table?
(1) ="Mapped" (2) Not "Mapped" (4) ="6SNH02" (4) ="Unmapped"

29. If you try to add a new Unit_ID called '8COM02' to the CLASS_SCHEDULE table, which does not exist in the MAPS_CURRICULUM table, why would the database software show an error?
(1) Because '8COM02' contains both letters and numbers.
(2) Because it violates the relationship between the tables.
(3) Because the primary key of the CLASS_SCHEDULE table is a composite key.
(4) Because it does not allow the insertion of units not belonging to Grade 6.

30. Which database component should be created to allow teachers to enter data online easily when reserving the Smart Classroom?
(1) Queries (2) Reports (3) Tables (4) Forms

The SmartAssist web system, currently under development, aims to manage the issuing and returning of Smart Classroom equipment at the school. It will be built using HTML and a CMS (Content Management System). Use the above given text to answer questions **31** to **34.**

31. The Equipment Issue Status page, displayed after a student log into the SmartAssist system, shows information specific to each student. Which type of web page should be used for this purpose?
(1) Static Web Page (2) Dynamic Web Page
(3) CMS-based Page (4) Hypertext Document

32. On the main page of the SmartAssist website, the title "SmartAssist Home" should be displayed on the browser's tab. Which HTML tag should be used for this task?
(1) <body> (2) <h1> (3) <title> (4) <head>

33. The SmartAssist system needs to display a set of instructions, referred to as "Steps to Follow," that students must follow when issuing equipment. What is the correct pair of HTML tags to use for displaying these instructions as a numbered list on a web page?
(1) and <li> (2) <dl> and <dt> (3) and <li> (4) <tr> and <td>

34. In developing the SmartAssist project using a CMS (Content Management System), which of the following tasks belongs to the Content Creator role?
(1) Managing the web server database
(2) Adding new content and news to the website
(3) Modifying data through coding
(4) Granting permission for final publishing

PAST PAPERS WIKI

35. What is the main relationship between the Identification Requirements and Design Solution phases in the System Development Life Cycle (SDLC)?
(1) Designing is done before identifying requirements
(2) System testing is done after designing
(3) Designing is done based on the identified requirements
(4) Maintenance is done before the design stage

36 When sending an email message, what is the purpose of using the BCC (Blind Carbon Copy) field?

(1) To send a copy to the recipient
(2) To hide the sender's address
(3) To hide the recipient's address from other recipients
(4) To force the recipient to reply

37. Why does the quality of a raster graphic decrease when enlarged?

(1) It is based on Pixels
(2) It is based on mathematical formulas
(3) It uses Lossy Compression
(4) It has the ability to use layers

38. What is a key component found in E-waste that negatively impacts the environment?

(1) Plastic (2) Hazardous elements (3) Aluminum (4) Glass

39. When considering ergonomics and health issues in the workplace, what is an example of a Repetitive Strain Injury (RSI) that computer users may experience?

(1) Diabetes (2) Eye strain (3) Heart disease (4) Headache

40. Consider the following statements about software that can edit audio recordings of students in a school, remove unnecessary silent parts, and minimize sound distortion.

A - This software can be used to edit audio recordings.
B - This software can be used to edit images and videos.
C - This software is completely Free and Open Source software.

Select the correct answer, based on the above statements.

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

සියලුම හිමිකම් ඇවිරිණි/முழுப் பதிப்புரிமையுடையது/All Rights Reserved

දකුණු පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
தென் மாகாணக் கல்வித் திணைக்களம்
Department of Education, Southern Province

අවසාන වාර පරීක්ෂණය - 2025
இறுதி தவணைப் பரீட்சை - 2025 / Year End Term Test - 2025

ශ්‍රේණිය தரம் Grade	11

Information and Communication Technology I, II

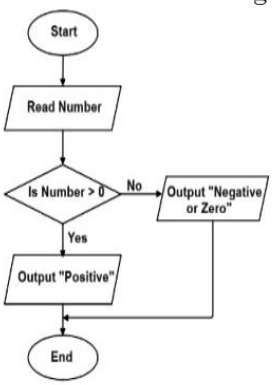
නම பெயர் Name ..... විභාග අංකය சுட்டிலக்கம் Index No. .....

Information and Communication Technology II

- Answer only five questions including the first question and four other selected questions.
- The first question carries 20 marks and each other question carries 10 marks.

1. (i) Convert the decimal 159_{10}
   (a) To its Binary equivalent.
   (b) To its hexadecimal equivalent.

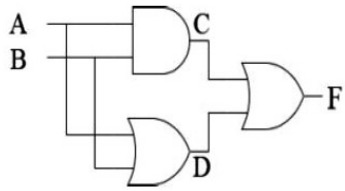
   (ii) Answer the following questions based on the given flowchart.



(a) What is the logic represented by the Flow Chart?

(b) What type of Control Structure does the symbol (Is Number > 0) in the flowchart represent?

   (iii) The following circuit diagram represents the logic required to operate an electric fan(F).



(a) When A=1 and B=0, what is the output at C?

(b) When A=0 and B=1, what is the final output at F?

   (iv) A table has to be created, to store data about equipment in the school laboratory.
   (a) Suggest a suitable field name for the primary key of this table
   (b) What is the most suitable data type for that primary key field?

   (v) (a) Write down one main advantage of ICT in the health sector.
   (b) Write down one device used for the physical security of a computer to prevent harm to data and information.

   (vi) Five computers named A, B, C, D, and E, and a printer (which must be connected directly to the computer network) need to be networked. A networking switch, a router and a sufficient number of cables are provided. Draw a diagram to network these computers using a Star Topology, with only the appropriate devices.

(vii) State whether the following statements regarding Computer Operating Systems are True or False. (Only writing the label and True/False is sufficient.)

A -	Managing hardware and other software is a primary function of the operating system.
B -	Every operating system stores data in computer memory using the same method.
C -	Every operating system provides a user friendly interface.
D -	Defragmentation is a common task that must be performed on every operating system.

(viii) A phrase of a word-processed document with some formatting changes is shown below.

Before: on the insert tab, the galleries include items that are designed to coordinate with the overall look of your document.

After: On the insert tab, the galleries include items that are **designed to coordinate** with the *overall look* of your document.

Which formatting tools in word processing software could have been used to make the changes shown above?

(ix) Match the tasks related to sending an email with the correct word from the given list. Write the label and the correct word as Label – Word format.

a - Displays the recipient's email address.
b - Displays the email addresses of the people who receive copies.
c - Allows all recipients to see who else received the email.
d - Stores received emails.
e - Stores unwanted emails.
f - Stores deleted emails.

List of terms: {To, Inbox, Trash, Center, Attachment, Spam, Drafts, Send, Sent, BCC, CC}

(x) For each of the following, state whether it is a system and write its input, process, and output.

a - Human blood circulation b - Electric water motor

2. Consider the scenario in the following paragraph carefully and answer the questions given below.

Lanka Hospitals Company has decided to install a computer-based system to replace the current manual patient registration and medical record processing system, with the aim of increasing the efficiency of the hospital. The task was handed over to a software company named HealthTech Solutions. On August 10, 2024, two officials from that company, Saman and Priyanka, observed the operations of the hospital and subsequently held an interview with the Hospital Manager and the Chief Medical Officer. Information about the various levels of employees involved with the system and their activities was gathered using questionnaires.

After gathering all the information, Ruwan began the system design work. According to his design, a person named Nilakshi developed the software and also Kasun performed the unit testing. Following the completion of those tasks, an employee of the hospital was called upon to perform an acceptance test, and the system was installed at the institution on May 5, 2025.

It was decided that the new system would not be implemented all at once, but would instead be installed and used at the Galle branch of the hospital. During that time, a person named Sanjeewa helped to resolve the issues that arose. After a period of about three months, a person named Chamuditha arrived and made a few minor changes to the system.

(i) Write two ways in which the new computer-based information system is more advantageous than the previous manual information system.

(ii) Write one advantage of using interviews and questionnaires performed by Saman and Priyanka.

(iii) Write two tasks that Ruwan might have performed during system design

(iv) What is the deployment method used to install this system in the hospital?

(v) Which system development model would be most suitable for this system? Why did you choose that model?

(vi) The following table shows stages of the Software Development Life Cycle and related activities. Fill in the blanks A, B, C, and D using the above given passage.

	Stage	**Activities**
	A	Using observation, interviews, and questionnaires to identify requirements of the system
	Coding	Creating the software using a computer language
	B	Unit test
	Deployment	C
	D	Making a few minor changes to the system after a few month

3. The following spreadsheet segment is prepared to supply the digital equipment for secondary schools under the project of the Digitalization of General Education in the Southern Province.

In this project, schools have been classified according to the number of students in a class, and the supply of ICT Lab (Desktop) computers and SLSC Tabs (Tablet) has been estimated and calculated accordingly.

	A	B	C	D	E	F	G
1	Number of Students in Class	Number of Smart Class/ICT Lab (N)	ICT Lab Desktops (N)	SLSC Tabs (N)	ICT Lab Desktop Cost (LKR in Mn)	SLSC Tabs Cost (LKR in Mn)	Total Package Cost (LKR in Mn)
2	40	242	9,680	9,680	1,936.00	726	2,662.00
3	35	29	1,015	1,015	203.00	76.125	279.13
4	30	35	1,050	1,050	210.00	78.75	288.75
5	25	54	1,350	1,350	270.00	101.25	371.25
6	20	72	1,440	1,440	288.00	108	396.00
7	15	83	1,245	1,245	249.00	93.375	342.38
8	10	181	1,810	1,810	362.00	135.75	497.75
9	Total	696	17,590	17,590	3,518.00	1319.25	4,837.25
10	Cost per Desktop	0.2	(LKR in Mn)				
11	Cost per Tab	0.075	(LKR in Mn)				

note:

- The estimated unit cost of an ICT Lab Desktop computer is Rs. 200,000 and is recorded in cell B10.
- The estimated unit cost of an SLSC Tab is Rs. 75,000 and is recorded in cell B11

Two possible formulas for calculating the total cost of ICT Lab Desktops (column E) in cell E2 are given below.

1. =C2*$B$10 2. =C2*B10

(i) (a) Out of the two formulas above, which formula gives the correct result in cell E2?

(b) Out of the two formulas above, which formula gives the correct result when entered into cell E3 and copied down from E3 to E8? Explain the reason for your answer.

(ii) (a) What is the function that should be entered in cells C9 and D9 to calculate the total number of ICT Lab Desktops and SLSC Tabs?

(b) Write the function to display the minimum Total Package Cost in cell G10.

(iii) Assume that the percentage cost of a Tab relative to the cost of a Desktop computer needs to be calculated in cell D10. What is the formula that should be entered in cell D10?

(iv) (a) What is the data type of the data in cell A2?

(b) To display the currency values in the cell range F2 to G8 in Millions of Rupees limited to two decimal places, what is the main Formatting Category you should use in the spreadsheet software?

4. (a) The HTML source of the web page shown in Figure 1 is given with certain missing tags labelled 1 to 10.

Artificial Intelligence in Education



Artificial intelligence in education refers to the use of computer systems that can perform tasks typically requiring human intelligence to enhance learning experiences, streamline administrative processes, and support educators.
Here are some advantages and disadvantages of Artificial Intellience in Education

Advantages	Disadvantages
Personalized learning	Lack of human interaction
24/7 availability	Privacy concerns
Automated grading	Bias in algorithms
Data-driven insights	Dependence on technology

Key roles of AI in education

- Task automation
- Content creation
- Improved engagement
- Enhanced accessibility

For more information. Artificial Iniellineiice in education

Figure 1

Select the correct HTML tags for the labels 1 to 10 in Figure 2 from the list given below and write down the label number and the corresponding HTML tag.
List of Terms: {img, li, body, td, h1, table, a, head, th, ul, html, ol}

```
<html>
     <①>
        <title>Artificial Intelligence</title>
     </①>
      <②>
        <③><center>Artificial Intelligence in Education</center></③>
        <center><④ src="C:\Users\DELL\Desktop\image.png" width="350"
        height="200 alt="AI"></center>
        <p>Artificial intelligence in education refers to the use of
        computer systems that can perform tasks typically requiring
        human intelligence to enhance learning experiences, streamline
        administrative processes, and support educators.</p>
        <p>Here are some advantages and disadvantages of Artificial
        Intellience in Education</p>
        <⑤ align="center" border="2">
            <tr><⑥>Advantages</⑥><⑥>Disadvantages</⑥></tr>
             <tr><⑦>Personalized learning</⑦><⑦>Lack of human
             interaction</⑦></tr>
            <tr><⑦>24/7 availability</⑦><⑦>Privacy concerns</⑦></tr>
            <tr><⑦>Automated grading</⑦><⑦>Bias in
        algorithms</⑦></tr>
            <tr><⑦>Data-driven insights</⑦><⑦>Dependence on
        technology</⑦></tr>
        </⑤>
        <h2>Key roles of AI in education</h2>
        <⑧>
            <⑨>Task automation</⑨>
            <⑨>Content creation</⑨>
            <⑨>Improved engagement</⑨>
            <⑨>Enhanced accessibility</⑨>
        </⑧>
        <p>For more information: <⑩
        href="https://knowledgeworks.org/resources">Artificial
        Intelligence in education </⑩></p>
     </②>
</html>
```

Figure 2

(b) (i) Match the applications in Column A with their corresponding tasks in Column B and write them in order.

A		B	
1.	Dynamic website	Q	Software for uploading a website.
2.	Kompozer	R	The content of the website changes constantly.
3.	Joomla	S	Open-source web authoring software.
4.	Filezilla	T	Open-source content management software used to create a dynamic website.

(ii) Today, The Internet has become a necessary tool for making people's daily tasks easier. Write down two services provided by the Internet.

(iii) Match the description labelled A – D with the correct term from the List of Terms given below. Write down the relevant term against each label in the label - term format

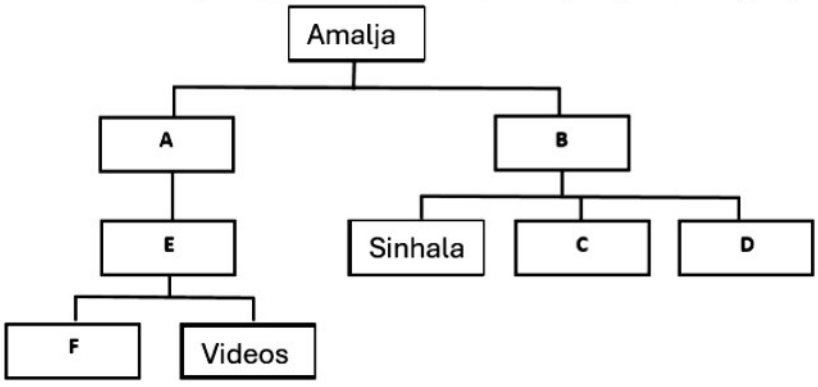
label	Description
A	Search engine
B	Informing and controlling messages when there are errors
C	Controlling the exchange of IP addresses
D	Storing and exchanging email to client computers

List of Terms: {Google Chrome, Google, TCP/IP, DNS Server, ICMP, Web Server, Mail Server, Web Address}

5. (a) Amalja has stored PDF files and Video files related to his studies for various subjects in his computer. In addition, as he enjoys listening to songs, he has also stored a large number of Sinhala, Tamil, and English songs as MP3 files in his computer. He has stored all these files in a single folder.

(i) When a file is saved, apart from the file name and location, list three other pieces of data maintained by the operating system regarding a file.

(ii) Amalja is a student preparing for the upcoming G.C.E. Ordinary Level examination. However, because all files are stored in a single folder, it is difficult for him to quickly find the necessary notes and videos. In addition, he needs to organize all the songs stored on the computer by language, based on his preferences. The following folder structure is proposed as a solution for this. Write the appropriate folder names for the labels A – F from the list given below.
Folder names: {Songs, Studies, Tamil, Notes, English, Subject}



(b) The statements given below refer to the usage of information and communication technology.

Identify the most appropriate term for the blank from the List of Terms given below and write it in the format: Label - Term ex: - Answer for the (i) statement A - Patient license

(i) Nisal, a professional chef, created a new food recipe and to obtain ownership for it, he must obtain a .....A.....

(ii) Sanduni has been publishing her poems on Facebook for a long time. One day, she saw that someone else had published one of her poems on his/her Facebook page under his/her own name. This is a .....B.....

(iii) To ensure the safety of computers and other electrical devices when the supplied electricity's voltage exceeds the limit, ...C..... can be used.

(iv) Computer networks can be protected from unauthorized access by using a .....D.....

(v) Although their functionality is similar, ...E..... spread within the computer by attaching to executable files, whereas .....F..... operate and spread independently.

(vi) By focusing on digital literacy, removing financial barriers, and providing equal opportunities, the .....G..... can be created.

(vii) Thisali writes about the problems she faced in her daily life and how she successfully dealt with them in her .....H.....

(viii) Uploading others' photos to the Internet without permission is a .....I.....

List of Terms: {Intellectual property theft, Password, Patent license, Cybercrimes, Digital divide, Computer virus, Plagiarism, Uninterrupted Power Supply (UPS), Blog, Computer worms, Firewalls, Surge protector, Social Media, Digital bridge}

6. The Southern Province Department of Education intends to develop a Relational Database system to efficiently manage the entire process (from student registration to design evaluation) for the Southern Smart Innovation Platform (SSIP-2025) design competition.

STUDENTS

Adm_No	Full_Name	Gender	Grade	School_Census_ID
S001	Amal Senanayaka	Male	11	8173
S002	Chandrika Kumari	Female	10	8200
S003	Suresh Malinga	Male	11	8173
S004	Nishanthi Perera	Female	10	8501

EVENTS

Event_Code	Event_Name	Category
SSIP-LS-PS	Presentation Software	10-11
SSIP-LS-RI	Robotics/IoT	10-11
SSIP-J-GD	Game Development	6-9
SSIP-US-WD	Web Design and Development	12-13

SUBMISSIONS

Reg_ID	Adm_No	Event_Code	Submission_Date
TANG-PS-01	S001	SSIP-LS-PS	2025-07-28
TANG-RI-02	S001	SSIP-LS-RI	2025-08-01
TANG-WD-03	S002	SSIP-US-WD	2025-07-25
TANG-PS-04	S004	SSIP-LS-PS	2025-08-05

(i) (a) Why is the Adm_No field used as a Primary Key in the STUDENTS table?

Past Papers Wiki

(b) The fields Adm_No and Event_Code in SUBMISSIONS create relationships with STUDENTS and EVENTS tables. What type of keys are these?

(c) What is a suitable data type that can be used for the Event Code field (e.g., SSIP-LS-PS) in the EVENTS table?

(ii) (a) At the end of the competition, what is the most suitable database object to present the complete list of winners (Name, School, Event) to the Director of Education, based on the STUDENTS and SUBMISSIONS tables?

(b) Which database object should be used to design a user interface for students to enter submission data online?

(c) Write the primary key and foreign key of the SUBMISSIONS table.

(iii) When a student's data is deleted or updated from the STUDENTS table, the records of that student's submissions must be protected within the database.

(a) Which key relationship requires that the Adm_No field in the SUBMISSIONS table be updated whenever a student's Adm_No is modified (Updated)?

(b) If an attempt is made to delete the record S001 from the STUDENTS table, why does the database prevent it to maintain the data relationship?

(iv) Based on the data in the SUBMISSIONS table, a report is required that only shows the Reg_ID of students who submitted their creations before 2025-07-30.

(a) What is the most suitable criterion that should be applied to the Submission_Date field in this Queries operation?

(b) In a query to find all events for grades 10–11, which criterion should be used for the Category field?

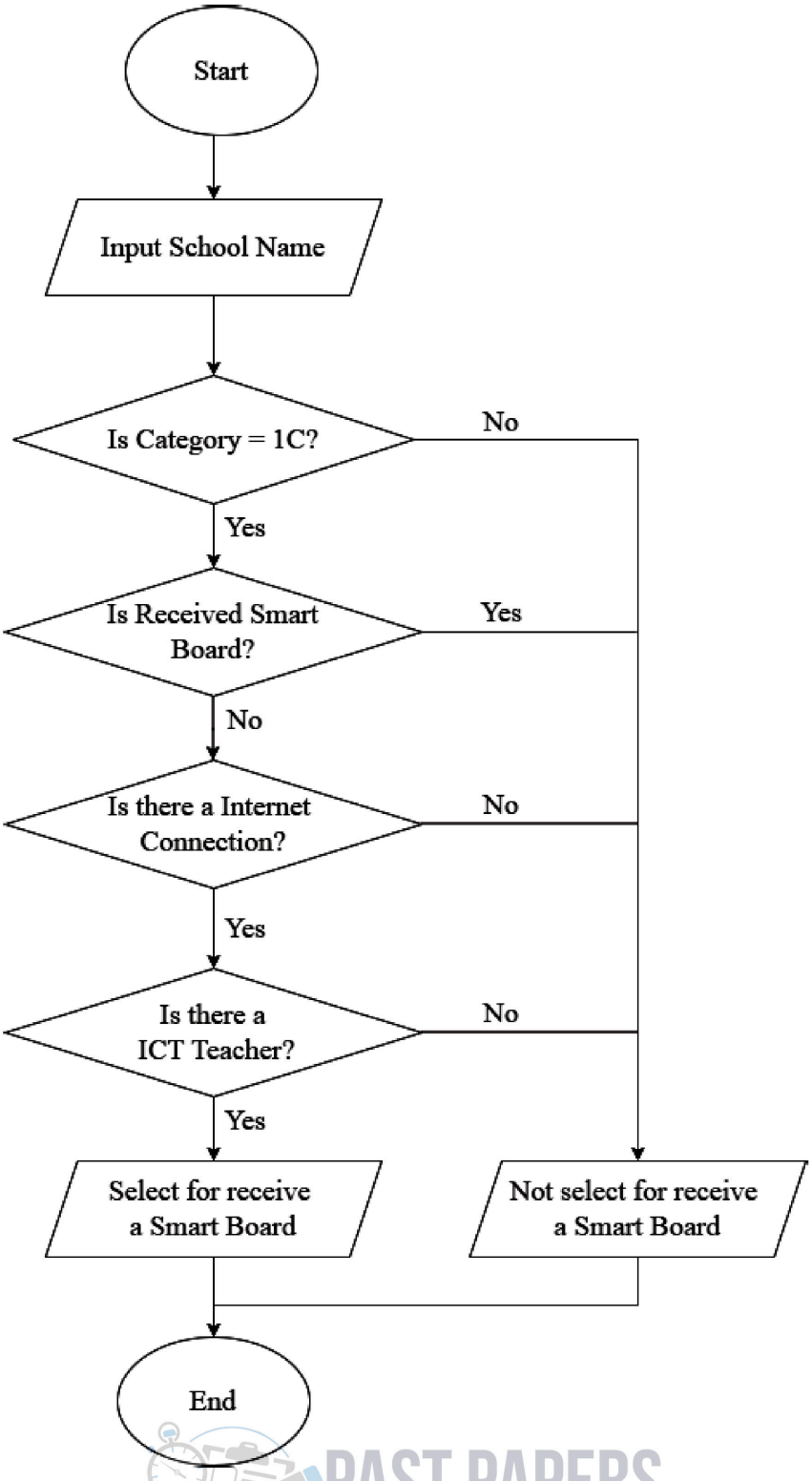
7. The Ministry of Education plans to distribute 100 Smart Boards to 100 schools. The letter below outlines 6 main criteria that must be followed when selecting schools. You need to design an algorithm to check these conditions through a computer program

1.	The school must belong to Category 1C.
2.	The school should not have received Smart Boards under government donations during the last three years.
3.	The school must have Internet facilities.
4.	The school must have an ICT teacher or a teacher with ICT knowledge.

(i) Only schools that satisfy all conditions 1, 2, 3, and 4 should be selected for donating the Smart Board. What is the correct Boolean expression representing this logic?

(ii) Write down the pseudo code corresponding to the flowchart shown below.

(ii) Write down the pseudo code corresponding to the flowchart shown below.



PAST PAPERS WIKI
WWW.PastPapers.WiKi

Downloaded From Past Papers WiKi - Sri Lanka's Largest Past Paper Bank