

இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம்
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GIT 01 E I, II

සාමාන්‍ය තොරතුරු තාක්ෂණ විභාගය, 2014
 பொதுத் தகவல் தொழினுட்பவியல், 2014
 General Information Technology Examination, 2014

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 பொதுத் தகவல் தொழினுட்பவியல் I, II
 General Information Technology I, II

පැය තුනයි
 மூன்று மணித்தியாலம்
 Three hours

General Information Technology I

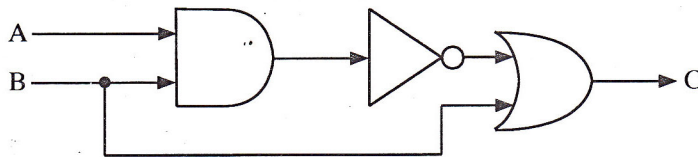
Important : * Answer all questions on the Answer Sheet provided.

* Write your **Index Number** in the space provided on the answer sheet.

* Instructions are given on the back of the answer sheet. Follow them carefully.

* In each of the questions 1 to 40, pick one of the alternatives (1), (2), (3), (4) which is **correct or most appropriate** and mark your response on the answer sheet in accordance with the instructions given therein.

- Which of the following is/are true about the first generation computers?
 A - Physical size of a computer was relatively large.
 B - Vacuum tubes were used in circuitry.
 C - Machine language was used for programming.
 (1) A only (2) B only (3) A and C only (4) All A, B and C
- Which of the following are components of the Central Processing Unit (CPU) of a computer?
 (1) Arithmetic and Logic Unit (ALU), Control Unit
 (2) Arithmetic and Logic Unit, Secondary Storage
 (3) Control Unit, Main Memory
 (4) Main Memory, Secondary Storage
- Which of the following are examples of Secondary Storage?
 (1) CD, Flash Memory, Magnetic Tape
 (2) CD, Magnetic Tape, Read Only Memory (ROM)
 (3) DVD, Magnetic Tape, Random Access Memory (RAM)
 (4) Flash Memory, Random Access Memory, Read Only Memory
- The inputs for the following logic circuit are as shown in the following truth table:

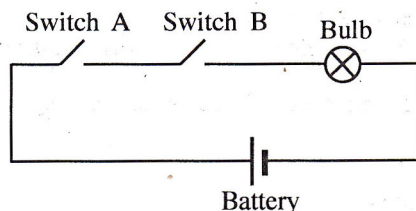


A	B	C
0	0	
0	1	
1	0	
1	1	

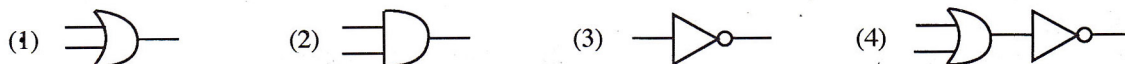
In the above table, what are the output values for column C from top to bottom respectively?

- (1) 0,0,0,0 (2) 0,1,0,1 (3) 1,0,1,0 (4) 1,1,1,1
- What is the binary equivalent to decimal 101?
 (1) 1010101₂ (2) 1011101₂ (3) 1100100₂ (4) 1100101₂
- A computer stores the binary number 01000010. What is the decimal equivalent of this number?
 (1) 64 (2) 65 (3) 66 (4) 67
- The storage capacity of a digital camera is 16 GB. What is the maximum number (approximately) of 1 MB sized photos that can be stored in this camera?
 (1) 16 (2) 62 (3) 16000 (4) 16 million

8. Consider the following circuit representing the control of a bulb using the two switches A and B:



Which of the following logic gate(s) best illustrates the operation of the above circuit?



9. Which of the following icons is used in word-processing to increase the font size of a selected text in a document?



10. Which of the following facilities is/are available in word-processing software?

A - Find and Replace

B - Mail merge

C - Spell check and thesaurus

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

11. Consider the equation $y = ax^2 + bx + c$, found in a word-processed document.

Which of the following features of the word processor is used to obtain the appearance of the character 2 in the equation?

- (1) justification (2) outline (3) subscript (4) superscript

12. Which of the following tools available in spreadsheet software will help to enter formulae in the correct format?

- (1) Format Template (2) Format Wizard (3) Function Template (4) Function Wizard

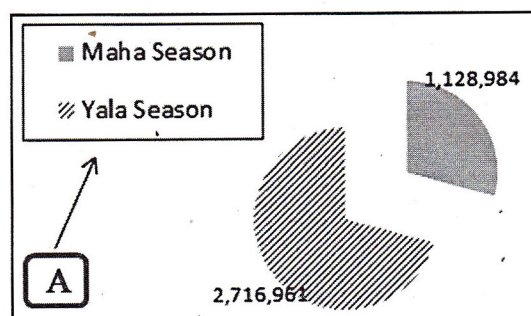
13. The following is an extract of a spreadsheet containing the marks obtained by 50 students in a class where students follow different aesthetic subjects:

	A	B	C	D
1	Marks for the aesthetic subject			
2	Name	Western Music	Dancing	Oriental Music
3	Kasun	80		
4	Meena		66	
5	Anwer	75		
.....				
.....				
51	Nimal			80
52	Shoba	88		
53	No. of Students			

What is the function that could be used in Cell B53 to determine the number of students who followed the Western Music subject?

- (1) Average() (2) Count() (3) Rank() (4) Sum()

14. Paddy production (in metric tons) in Sri Lanka for the year 2012 is illustrated in the following pie-chart prepared using a spreadsheet software:



Which of the following parameters has to be set to change the appearance of the section denoted by 'A' in the chart?

- (1) Data (2) Label
(3) Legend (4) Title

15. Consider the following statements regarding presentation software:

A - Pressing Ctrl+N keys will create a new presentation.

B - Pressing the key N within a slide show will display the next slide.

Which of the following is true regarding the above statements?

(1) A is correct and B is incorrect.

(2) A is incorrect and B is correct.

(3) Both A and B are correct.

(4) Both A and B are incorrect.

16. Which of the following is the most suitable field for the primary key of a database table used for storing data about students in a school?

(1) class

(2) date of birth

(3) student admission number

(4) surname

● Consider the following database table to answer questions 17, 18 and 19. This table shows the data about items currently available in a sports goods shop.

Item_Num	Item_Name	Quantity	Unit_Price
G001	Cricket Bat	5	2,500
G002	Football	20	1,500
G003	Chess Board	5	2,000

17. How many records are there in this table?

(1) 3

(2) 4

(3) 12

(4) 16

18. How many fields are there in the table?

(1) 3

(2) 4

(3) 12

(4) 16

19. Which is the most appropriate data type for 'Item_Num'?

(1) Boolean

(2) Currency

(3) Number

(4) Text

20. Consider the following software:

A - DOS

B - Firefox

C - Microsoft Windows

D - Linux

Which of the above are operating systems?

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

21. Consider the following functions:

A - Checking spellings in a document

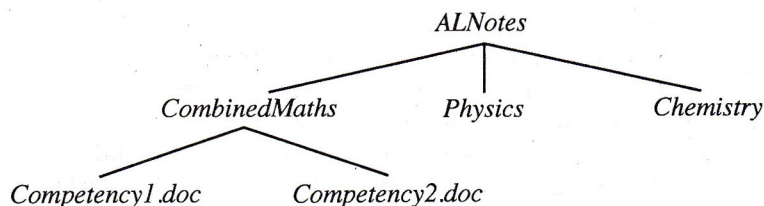
B - Managing the processes that run on the system

C - Providing an interface to the user

Which of the above are functions of an operating system?

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

22. Given below is a user's directory tree on the hard disk of a computer:



In the above directory tree structure, *ALNotes*, *CombinedMaths*, and *Competency1.doc* are respectively

(1) a file, a root directory and a sub-directory.

(2) a sub-directory, a file and a root directory.

(3) a sub-directory, a root directory and a file.

(4) a root directory, a sub-directory and a file.

23. 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 = page, C = protocol
- (2) A = domain name, B = protocol, C = page
- (3) A = protocol, B = domain name, C = page
- (4) A = protocol, B = page, C = domain name

24. Which of the following is an internet search engine?

- (1) Google
- (2) Microsoft Windows
- (3) Open Office
- (4) Ubuntu

25. Consider the following statements:

A - Each web site has a unique Uniform Resource Locator (URL).

B - Hyperlink is an element in an electronic document that connects to another place in the same document or an entirely new document.

C - The hypertext transfer protocol (http) is used in the web to transfer data.

Which of the above statements are true?

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

26. Consider the following paragraph with blanks:

Mohamed has been asked to find the harmful effects of pesticides. He sits at a computer and starts a(A)..... to access the internet and through it launches a(B)..... . Then in the(C)..... he types the text "harmful effects of pesticides".

Which of the following is most suited to fill the above blanks respectively?

- (1) A = search box, B = search engine, C = web browser
- (2) A = search engine, B = search box, C = web browser
- (3) A = web browser, B = search box, C = search engine
- (4) A = web browser, B = search engine, C = search box

27. Which of the following media provides the highest speed of communication?

- (1) co-axial cable
- (2) fiber optic cable
- (3) radio-wave
- (4) twisted pair cable

28. Which of the following media provides the highest level of mobility for a user of a modern laptop within a LAN?

- (1) co-axial cable
- (2) fiber optic cable
- (3) radio-wave
- (4) twisted pair cable

29. Which of the following is **not** useful for a desktop computer in connecting to the Internet?

- (1) email software
- (2) Internet Service Provider (ISP)
- (3) network interface card
- (4) router

30. Which of the following **cannot** be used to connect a few laptops together in a LAN?

- (1) external disk drive
- (2) hub
- (3) router
- (4) switch

31. An organization purchased a word-processing software (X) from a shop. The same organization requested a software development company to develop an accounting software (Y) for its accounting activities. Which of the following is true in this scenario?

- (1) X is an off-the-shelf (packaged) software and Y is a tailor-made software.
- (2) X is a tailor-made software and Y is an off-the-shelf (packaged) software.
- (3) Both X and Y are off-the-shelf (packaged) software.
- (4) Both X and Y are tailor-made software.

32. Consider the following statements:

A - Debugging is the process of correcting errors in a computer program.

B - Violation of programming language rules results in syntax errors.

Which of the following is true regarding the above statements?

- (1) A is false and B is true.
- (2) A is true and B is false.
- (3) Both A and B are false.
- (4) Both A and B are true

33. An IF statement in a programming language is an example of a control structure. Which of the following is most suitable to fill the above blank?
(1) loop (2) repetition (3) selection (4) sequence
34. Which of the following is **not** considered as an example of misuse of an ICT system?
(1) Creating a blog site
(2) Sending spam
(3) Spreading malicious gossip on social media sites
(4) Spreading viruses
35. Spam is
(1) a Trojan horse. (2) a type of encryption.
(3) a type of a virus. (4) unsolicited e-mail sent to many recipients.
36. Which of the following is an example for Repetitive Strain Injury?
(1) addiction to on-line chatting (2) addiction to social media sites
(3) back pain (4) malware infections
37. An individual wants to protect his home computer from virus infections. Which of the following will **not** help in that regard?
(1) Avoiding download of programs from unreliable web sites
(2) Avoiding installation of pirated software on the computer
(3) Using encryption techniques for storing and transferring data
(4) Using malware protection software
38. Which one of the following is the most **unlikely** consequence of a virus infection on your home computer?
(1) Computer not responding to user actions (2) Permanent damage to computer hardware
(3) Slowing down of Internet access (4) Software failing to work properly
39. Which of the following is the most appropriate tool to protect your computer from unauthorized remote access?
(1) A firewall (2) A switch (3) A virus scanner (4) Anti-spam software
40. Prolonged use of computer causes eye strain that can lead to blurred vision and headaches. Which of the following will reduce eye strain?
A - Setting the brightness and the contrast of the monitor to its maximum value
B - Taking regular breaks during computer usage
C - Using appropriate lighting and window curtains to avoid glare
(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

* *

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

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව
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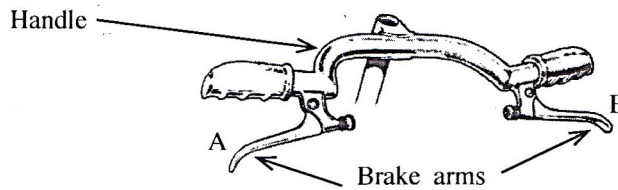
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பொதுத் தகவல் தொழினுட்பவியல் I, II
General Information Technology I, II

General Information Technology II

* Answer *four* questions only.

1. (a) A student designs a circuit for the brake system of a bicycle to switch a bulb on when the brakes are applied. When both or any one of the left and the right brake arms in the handle are/is pressed (i.e., brakes are on) the bulb is switched on. When both brake arms are released (i.e., brakes are off) the bulb is switched off.



The brake arms are labelled as A and B respectively as shown above. Assume that the bulb is named as C.

- (i) Copy the following truth table into your answer script and complete the column 'State of C'. Consider the states as follows:

brake on = 1, brake off = 0
bulb on = 1, bulb off = 0

State of A	State of B	State of C
0	0	
0	1	
1	0	
1	1	

- (ii) What logic gate is represented by your truth table?

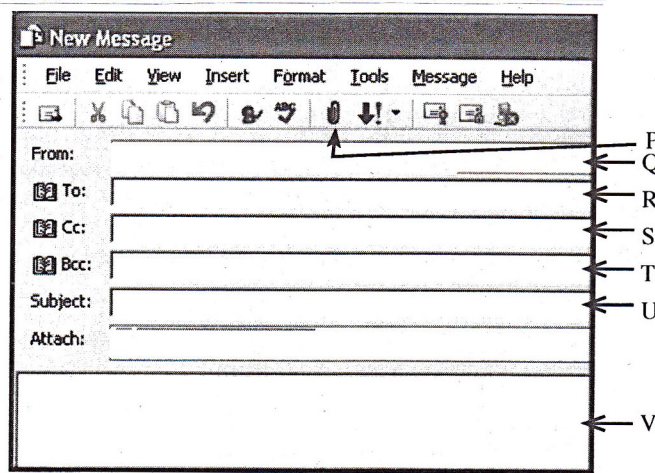
- (b) If a desktop computer, tablet PC and a laptop computer are available, suggest with **justifications** the most suitable computer for each of the following situations:

- (i) the school librarian lending books using a software
(ii) travelling salesman taking orders from shops

- (c) Operating systems contain utilities for tasks such as formatting disks. Write down **one** other operating system utility and its purpose.

- (d) Hardware is one of the components of a computer-based information system. List **two** other components.

2. (a) One of your friends has bought a laptop computer for home use. He intends to obtain an internet connection from an Internet Service Provider (ISP) using a wireless router with four ports.
- List **two** types of media that he can use to connect his laptop to the router.
 - If his family buys another laptop, can it be connected to the internet using the same router? Justify your answer.
 - Identify and write down a Local Area Network (LAN) and a Wide Area Network (WAN) in the above scenario.
- (b) The following is an interface of the email software that Kamala uses:



She has the following needs in an email communication:

- send an email to Mubarak (email: mubarak@testmail.com) with the 'specs.pdf' file as an attachment.
- copy the same email to Vignesh (email: vignesh@testmail.com).

Answer the questions (i) – (vii) using labels P – V where applicable.

- Where on the above interface should Kamala type Mubarak's email address?
- Where on the above interface should Kamala type Vignesh's email address?
- Where should Kamala type the heading of her message?
- What steps should she follow to attach the 'specs.pdf' file using the above interface?
- What is the use of the **Bcc** field labelled as T ?
- In which email folder will the copies of emails sent by Kamala be stored?
- Which email folder contains the new emails that Kamala receives?

- (c) Read the following paragraph:

"When a computer is switched on, a program called *boot loader* loads a very important software X for the computer after completing a self-test process. X starts several important processes that are needed for a computer to operate and provides an interface to the user. It manages the processes that are run on the computer so that the resources of the computer are efficiently used."

Write down the type of software referred in the above paragraph as X **without** using brand names.

3. (a) **Figure 1** shows a document formatted using a word-processing software.

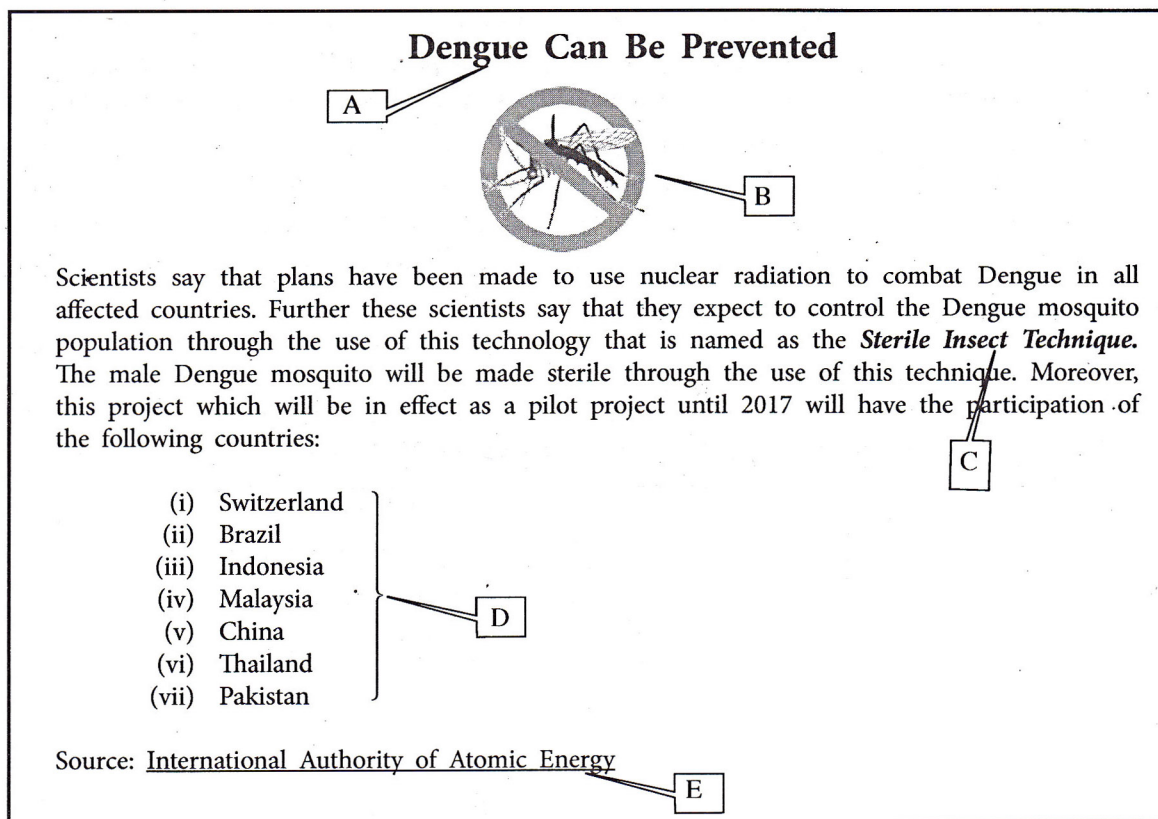


Figure 1

Formatted elements are labelled as A - E in **Figure 1**. Formatting was done by using some common tools labelled 1 to 17 in **Figure 2** available in the word processing software.

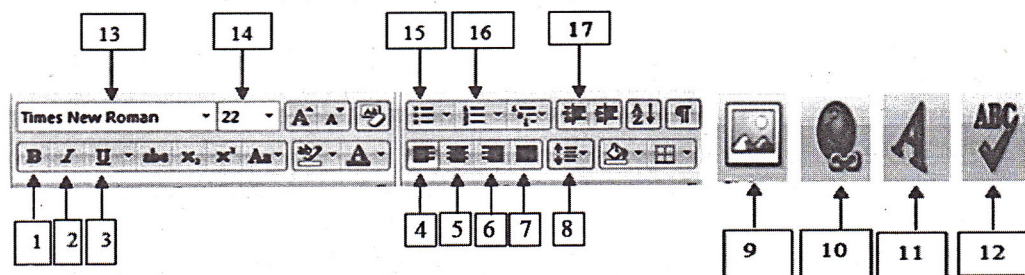


Figure 2

Using the above labels (1 to 17) in **Figure 2**, write down the tool(s) used to complete the following tasks. (Note: No marks will be awarded if more than the required number of labels are written.)

- (i) Format the title of the document as shown by label A.
- (ii) Insert the image as shown by label B.
- (iii) Obtain the appearance of the phrase as shown by label C.
- (iv) Format the text shown by label D into a numbered list.
- (v) Convert the text area shown by label E into a hyperlink.

(b) A list of terms related to presentation software is given below:


{ animation / help window / new slide / slide transition / design template / slide show / slide sorter }

Write down the most suitable terms from the list above to fill the blanks in the following statements. (You are required to write down the question number and correct term from the given list.)

- (i) The shortcut key combination, Ctrl + M is used to insert a/an to a presentation.
- (ii) A/An can be displayed by pressing the function key F1 on a keyboard.
- (iii) refers to the movement from one slide to another during a slide show.
- (iv) The feature applies visual effects to individual items such as graphics, titles or bulleted items on a slide.

4. (a) A past estimate of mid-year population in Sri Lanka for 2013 by district (in 1000s) is given in the following table:

	A	B	C	D
1	District	Male	Female	Total
2	Cofombo	1145	1181	
3	Gampaha	1124	1189	
4	Kalutara	596	631	
5	Kandy	656	728	
6	Matale	236	253	
7	Nuwara-eliya	344	375	
8	Galle	513	555	
25	Ratnapura	543	554	
26	Kegalle	404	440	
27	Sri Lanka			
28				

- (i) A formula of the form $=function1(cell1:cell2)$ is to be used to calculate and display the total number of males in Sri Lanka in cell B27.
Write down the correct terms for *function1*, *cell1* and *cell2* in the above formula.
- (ii) It is necessary to find out and display the number of females in the district which has the lowest female population. A formula of the form $=function2(cell3:cell4)$ is written in cell C28 for this purpose.
Write down the correct terms for *function2*, *cell3* and *cell4* in the above formula.
- (iii) You are required to calculate and display the total population of Sri Lanka in cell D27.
The following steps ① to ⑦ show the required steps to achieve this. However, these steps are **not** in correct order.
Re-arrange and write down the steps ① - ⑦ in correct order.
 - ① Click on Cell D2
 - ② Click on Cell D27
 - ③ Click on the icon 
 - ④ Click on the fill handle of Cell D2
 - ⑤ Drag up to Cell D26
 - ⑥ Press 'Enter'
 - ⑦ Type the formula $=B2+C2$
- (iv) What is the most suitable chart type that could be used to graphically present the male-female ratio in the total population of Sri Lanka?

(b) Some books in the library of a certain school have multiple copies. A student can borrow two books at a time and keep them for a period of two weeks.

(i) Write down **two** data items the library should keep about a book.

(ii) Write down **three** essential data items that need to be recorded by the library staff when a student borrows a book.

(iii) The librarian manually prepares a list of books that have been borrowed by five or more students during the last month. Identify and write down 'data' and 'information' in this scenario.

(iv) Assume that currently the data about borrowing and returning of books are recorded manually. List **three** advantages of automating the current manual system into a computerized system.

5. (a) Consider the flow chart in **Figure 3** which shows the process of installing a software on a computer. Note that the contents marked by labels (A) to (C) are missing.

Select and write down the correct labels from the list given below against (A), (B) and (C).

{ Accept? / Copy Files / Enough disk space? }

Note: You are **not** required to copy the flow chart to the answer script.

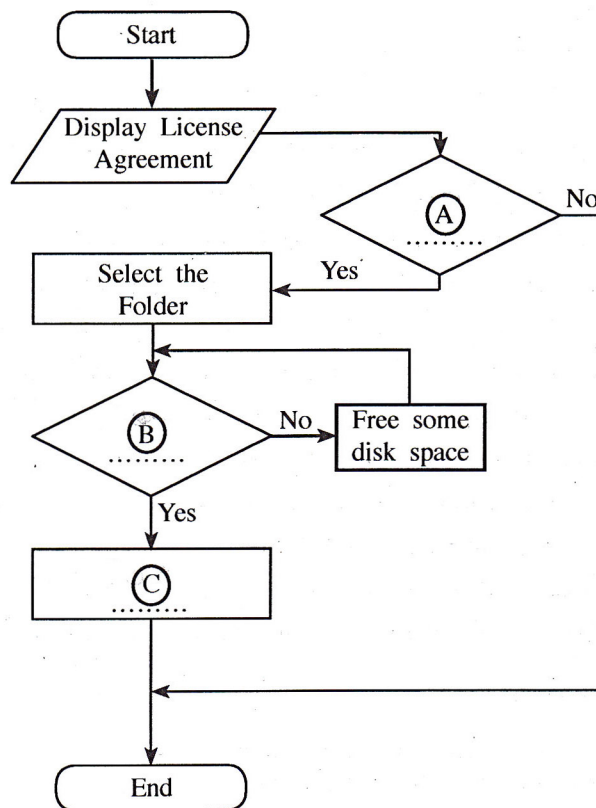


Figure 3

- (b) Consider the flow chart in **Figure 4** for reading a sequence of numbers to determine the largest and the smallest. The contents marked by labels **(P)** to **(T)** are missing in the flow chart.

Identify and write down the contents for the places **(P)** to **(T)** in the flow chart.

Note: Give the answers against **(P)** to **(T)**. You are **not** required to copy the flow chart in your answer.

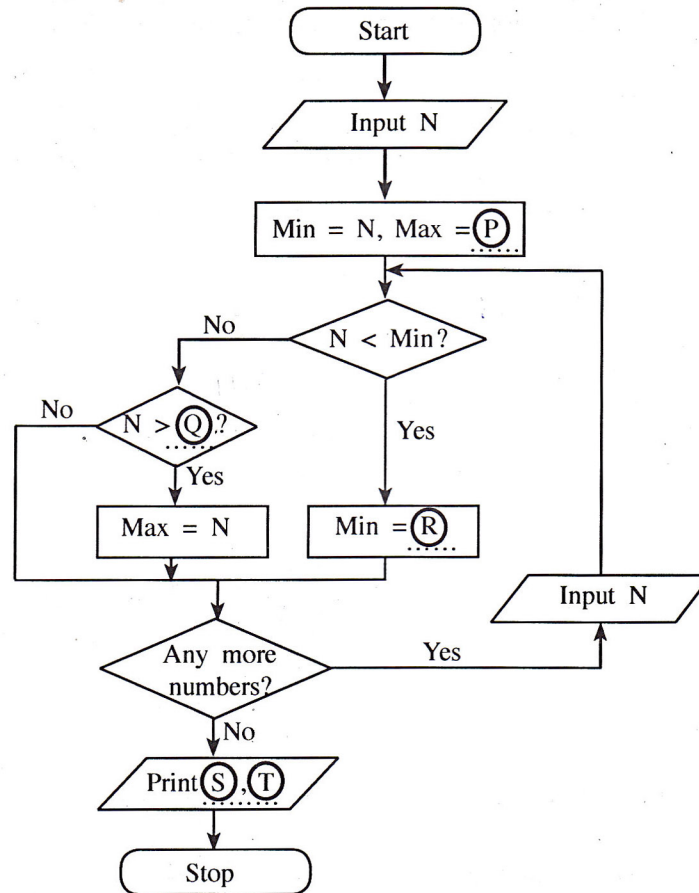


Figure 4

- (c) Draw a flow chart to read a sequence of numbers and to calculate the average.

6. (a) When buying a computer, hardware specifications and a few other factors are considered.
- List down **three** important items that you would consider in the hardware specifications of a computer for home use.
 - In addition to the hardware specifications, list **three** other factors that you would consider as important.
- (b) Suneth and Siva work in a certain company. Both of them hold ICT related job positions. Suneth uses a desktop computer to assist his manager with work related to office applications such as spreadsheet software. Siva has been assigned the task of maintaining and monitoring the activities of the computer network.
- Identify the most suitable job title for Suneth. Justify your answer.
 - Identify the most suitable job title for Siva.
 - Name **two** other types of application software that Suneth may use in addition to spreadsheet software in his office work.
- (c) The following are two of the legal and ethical issues in ICT:
- Privacy
 - Piracy
- Briefly explain each of the above terms.
- (d) The following can be used in protecting computer systems:
- Anti-virus software
 - Firewall
- Briefly explain the function of each of the above.