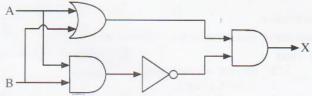
සියලු ම හිමිකම් ඇවිරිණි /	All Rights Reserved]			N.S.
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සාමානා තොරතුරු තාක්ෂණය பொதுத் தகவல் தொழினுட்பவியல் General Information Technology	I, II I, II I, II		පැය තුනයි ආශ්ඹු ගණිණු Three hours	

## 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.
- 1. In which of the following situation/s will a tablet computer be suitable?
  - A for a sales representative to use while he is travelling
  - B to be used in a school office to enter daily attendance data of students
  - C to enter data during a field visit
  - (1) A only
- (2) B only
- (3) A and B only (4) A and C only
- 2. Consider the following logic circuit diagram.



A	В	X
0	0	aith sai
0	1	a là di
1	0	
1	1	

The outputs X for the inputs given in the truth table for the above logic circuit are, respectively,

- (1) 0, 0, 0, 0
- (2) 0, 1, 0, 1
- \*(3) 0, 1, 1, 0 (4) 1, 0, 1, 0
- 3. Which of the following sentence(s) is/are correct?
  - A The hard disk has a larger capacity than main memory.
  - B The data in main memory are lost when the power is turned off while the data in hard disk are not.
  - C The data in main memory are stored in electronic circuits while the data in the hard disk are stored on magnetic media.
  - (1) A only
- (2) B only
- (3) C only
- (4) All A, B and C
- 4. Figures 1 and 2 below illustrate two circuits that use a battery and two switches (A and B) to operate a

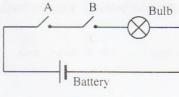


Figure 1

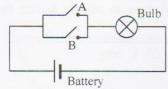


Figure 2

Which of the following logic gate combinations represent the operation of the above two circuits in figures 1 and 2 respectively?









5. Table 1 lists four files and their sizes.

Which of the files in the table could be stored in a flash memory drive having a total capacity of 4 GB, if 3GB of the flash memory is already used?

(3) B and C only

\*(1) A and B only (2) A and C only

(4) C and D only

Table 1 File Size (MB) 224 A В 770 C 815 D 1025

(1) 27	(2) 30	(3) 38	(4) 43
7. Which of the following (1) 1000101	binary numbers is (2) 1001001	equivalent to the decimal (3) 1010001	number 73? (4) 110000

6. Which of the following decimal numbers is equivalent to the binary number 100110?

8. Consider the following statements.

A - Infrared transmission is an example for the use of unguided media.

B - Microwave transmission generally used for long distance data communication is an example for the use of radiated media.

C - Fibre optic cables are examples for unguided media.

Which of the above statement/s is/are correct?

(1) A only

(2) B only

(3) A and B only

(4) B and C only

9. What is the most likely name of the folder that stores deleted messages in an email software?

(1) Drafts

(2) Inbox

(3) Sent

(4) Trash

10. Which of the following statement/s is/are correct?

A - IP addresses are used to identify computers on the Internet.

B - Internet and the World Wide Web (WWW) are two separate but related things: WWW is a service on the Internet while the Internet is the network infrastructure providing such services.

C - Large files such as videos which cannot be sent by e-mail as attachments can be sent to another computer via FTP (File Transfer Protocol).

(1) B only

(2) C only

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

11. Which of the following fields is most suitable as a primary key for a database table used for storing data about books in a school library?

(1) author name

(2) book title

(3) ISBN

(4) price

 Consider the following database table to answer questions 12, 13 and 14. The table shows data about items available for sale at a school canteen.

Product_ID	Product_Description	Quantity	Unit_Price	Supplier_ID
P001	Yoghurt	25	30.00	S02
P002	Milk (Vanilla)	35	20.00	S02
P003	Milk (Chocolate)	25	20.00	S02
P004	Peanut Packs	55	10.00	S05

12. What is the most suitable data type for 'Unit\_Price'? (1) Boolean (2) Currency (3) Number

(4) Text

13. How many records are there in the table?

(1) 4

(2) 5

(3) 20

(4) 25

14. Which of the following fields is most suitable as the primary key?

(1) Product\_ID\_

(2) Quantity

(3) Supplier\_ID

(4) Unit\_Price

15. Which of the following is/are appropriate to be used as a password in an email software that you use?

A - your full name without spaces

B - a term which is more than eight characters long and has at least one capital letter, one simple letter, one digit and one special character such as %

C - your date of birth

(1) A only

(2) B only

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

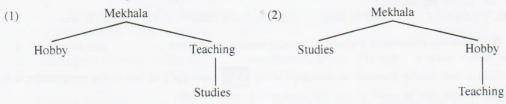
- 16. Which of the following is an operating system?
  - (1) Microsoft Powerpoint

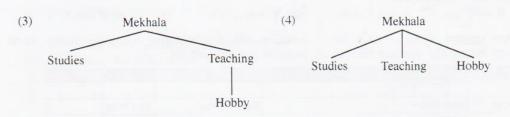
(2) Microsoft Word

(3) OpenOffice Impress

- (4) Ubuntu
- 17. Mekhala is a student studying English Literature, Western Music and Geography for her A/Level examination. She also helps some O/Level students in her village by teaching them English and Mathematics. Music is her hobby. She has a lot of files on the above areas that she wants to store in her computer using a suitable directory structure.

Which of the following directory structures would be the most suitable?





- 18. Which of the following statements are correct?
  - A A computer can be conveniently used without an operating system. X
  - B The disk defragmentation utility changes non-contiguous files on a disk to contiguous files to optimize
  - C The operating system interface could be used to control the basic settings in a computer.
  - (1) A and B only
- (2) A and C only
- \*(3) B and C only (4) All A, B and C
- 19. Consider the following statements.
  - A checking the spellings and grammar of a document
  - B controlling and operating the logic gates in the hardware
  - C managing resources and input output devices in a computer system

Which of the above are functions of an operating system?

- (1) A only
- (2) B only
- (3) C only
- (4) All A, B and C
- 20. Some menu headings and some sub-menus in a word processing package are listed in columns A and B respectively.

A

A1. Insert

A2. Page Layout

A3. View

- B1. Margins, Orientation, Size
- B2. Print Layout, Outline, Zoom
- B3. Table, Picture, Header, Footer

The correct matching between columns A and B is:

(1) A1:B1, A2:B2, A3:B3

(2) A1:B2, A2:B3, A3:B1

(3) A1:B3, A2:B1, A3:B2

- (4) A1:B3, A2:B2, A3:B1
- 21. Which of the following icons available in a word processing package can be used to create a bulleted list?









- 22. Consider the equation  $x = n_1 + n_2$ , in a word processed document. Which of the following features in the word processing package will help to display the numbers 1 and 2 as shown in the equation?
  - (1) Font face change

(2) Font size change

(3) Subscript

(4) Superscript

GI	T/201	5/01-E-I	,II - 4 -			
23.	the at key sl			s by hiding the co	ontent of the	
	(1) A		(2) B (3) F1		(4) F5	
24.	A - B - C - Which	Slides sho It is good One shoul	llowing statements with respect to slide ruld be kept simple to ease the reader's to make each slide independent if post d use colour and text effectively. bove are correct?	understanding of sible.		
25.	Consid	der the fol	llowing statements with respect to prese	ntation software.		
			ot insert a video clip into a presentation			
	В -	To insert a	table into a presentation one could select	from the to	ol bar in the	presentation software
		-	ature can be used to run the presentation	on automatically.		
			bove are correct?	1.0	(4) A11 A D	1.0
	(1) A	and B on	aly (2) A and C only (3) B	and C only	(4) All A, B	and C
26.			egment which shows a list of books of			the literary month o
	2015	is given b	elow. The discount rate for all books i	s given in cell B9		
		A	В	C	D	E
	1				0.1.0.1	
	3	BookNo 0001	Book Title	Regular Price	Sale Price	
	4	0001	Baddegama(Village in the Jungle)  Madolduwa		200	
	5	0003	Space Odessy		100	
	6	0004	Clever Poet and Rice Grains		225	
	7					
	8					
	9	Discount	209	6		
	10			- Admin		
	11				La Carte de la Car	
	to the	range D4 itten in ce	ritten in cell D3 to display the sale prices:D6 to display the sale prices of other cell D3?  (2) =C2-C2*\$B\$9 (3) =C	books. Which of the	he following	is a valid formula to
27.	Which	of the fo	ollowing SUM function(s) is/are valid?			
	A	SUM(A2,	A3:A5) B SUM(A3:A7)	© SUM(A3,A4	4,A7)	
	(1) (A	) only	(2) <b>B</b> only (3) <b>A</b>	and B only	(4) All (A),	B and C
28.	$\triangle = A$	A3+A5	ollowing formula/formulae is/are valid?  UM(K1:K6)			
	_	JM(K1:K6				
			(2) <b>B</b> only (3) <b>C</b>	only	(4) (A) and (	R) only
29.			llowing spreadsheet segment.	Only	(4) (5) and (	<b>D</b> only
				d A B	C	D E
			in cell C2 is copied to the range			
			ll be the values in cells C2 and C5	saman		2,\$B\$2:\$B\$6)
	respec	tively?	3	anwar	67 RANK(m	umber, ref, [order])
	(1) 3,	5	(2) 5, 5	thabotharn	90	
-	(3) 34		(4) 34, 80	nazeer	68	

4	A	8		С	D	E
L	name	marks				
2	saman			=RANK(B	2,\$B\$2:\$B\$6	5)
3	anwar		57	RANK(m	umber, ref, [	order])
4	thabotharn		90			
5	nazeer		58			
5	Kamala	12000	30			
7						

- 30. Which of the following media uses light waves for communication?
  - (1) co-axial cable
- \*(2) optical fiber
- (3) twisted pair
- (4) USB cable

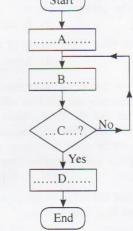
- 31. Consider the following media.
  - A twisted pair cable
  - B USB cable
  - C optical fiber

Which of the above media are suitable to be used to connect a laptop computer directly to a standalone printer?

- (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 are advantages of a computer network compared to a standalone desktop?
  - A sharing of data among machines on the network
  - B reduced risk of malware attacks on the machines connected to the network
  - C sharing of software applications on the central server
- (2) B only
- (3) A and B only (4) A and C only
- 33. The labelled flowchart below shows the steps to be followed for crossing the road safely. The relevant activities involved are listed as P, Q, R and S. Start
  - P Cross the road carefully
  - Q Stop near the Zebra crossing
  - R Look right, left and right again
  - (S) Is the road clear on both ways

Which of the following gives the correct matching?

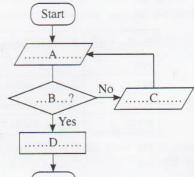
- (1) A: Q, B: P, C: R, D: S
- \*(2) A: Q, B: R, C: S, D: P
- (3) A: (R), B: (S), C: (Q), D: (P)
- (4) A: (S), B: (R), C: (Q), D: (P)



- 34. The labelled flowchart below shows the user login process in an online email system. The relevant activities involved are listed as (P), (Q), (R) and (S).
  - P Display error message
  - O Are the user name and password valid
  - R Enter user name and password
  - S Permit user into the system

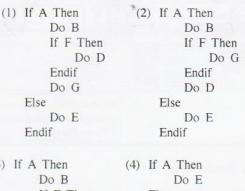
Which of the following gives the correct matching?

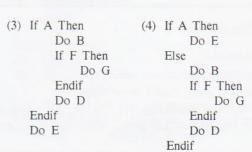
- (1) A:P, B:Q, C:R, D:S
- (2) A: Q, B: R, C: P, D: S
- (3) A: (R), B: (Q), C: (P), D: (S)
- (4) A: (\$\overline{S}\), B: (\overline{Q}\), C: (\overline{R}\), D: (\overline{P}\)

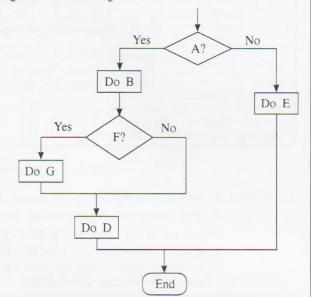


End

35. Which of the following represents the logic in the given flowchart segment?







36. Consider the following statement with blank spaces.

...... software has source code that cannot be modified by anyone but the person, team or organization who created it and maintains exclusive control over it while ...... software is licensed to be free to use, modify and distribute.

Which of the following phrases are appropriate to fill the above blank spaces respectively?

- (1) Closed source, commercial
- (2) Commercial, closed source
- (3) Free and open source, proprietary
- (4) Proprietary, free and open source
- 37. Consider the following statement with a blank space.

The job of a ...... could involve maintaining routers, switches, firewalls etc.

The most suitable job title to fill the above blank is

(1) desktop publisher.

(2) network administrator.

(3) software engineer.

- (4) systems analyst.
- 38. Consider the following related to the use of web.
  - A Deleting e-mails that are more than two months old
  - B Avoiding meeting face-to-face, people whom you have only met in a social media site
  - C Sending confidential information such as credit card numbers in e-mails

Which of the above are appropriate measures in using web in a safe manner?

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) All A, B and C
- 39. Saman says that downloading files from the Internet to his home computer is slow. One of his friends suggests the following to improve the speed.
  - A Fix an external hard disk to the computer.
  - B Install a better graphics card on the computer.
  - C Obtain the services from an Internet Service Provider (ISP)who provides a higher bandwidth in the area.

Which of the above recommendations is/are suitable?

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

- 40. Consider the following.
  - A Hardware specification of the computer
  - B Reputation of the seller
  - C Warranty period and quality of after sales service

Which of the above aspects are important in purchasing a computer?

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

கேவு இ குடுக்கு முழுப் பதிப்புரிமையுடையது / All Rights Reserved]

இலங்கைப் புரி சைத் தீணைக்களம் இலங்கைப் பிறுத் திறைக்கும் இதி இருக்கைப் புரி சைத் தினைக்களம் இலங்கைப் புரி கைத் தினைக்களம் இலங்கைப் புறி கைத் தினைக்களைப் புறி கைத் தினைக்களை கணைக்களைப் புறி கூறி கைத் தினைக்களைப் புறி கூறிக்கள் கூறி கணிக்கள் கூறி கூறிக்கள் கூறி கணிக்கள் கூறி கூறிக்கள் கூறி கூறி கூறி கூறி கூறிக்கள் கூறி

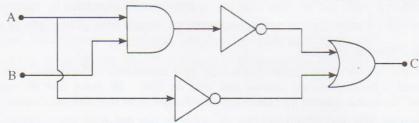
## General Information Technology II

- \* Answer four questions only.
- (a) A toy musical instrument has two buttons P and Q to select and play a song. If any one of the buttons
  is pressed, the respective song is played. When both buttons are pressed at the same time, a song is
  not played. Consider the following states.
  - A button (P, Q) is pressed or not
    - o button is pressed
- state '1'
- o button is not pressed
- state '0'
- A song is played or not (Y)
  - a song is played
- state '1'
- o a song is not played
- state '0'

Copy the following truth table on to your answer script and complete the column Y.

P	Q	Y
0	0	
0	1	
1	0	
1	1	1 - 22

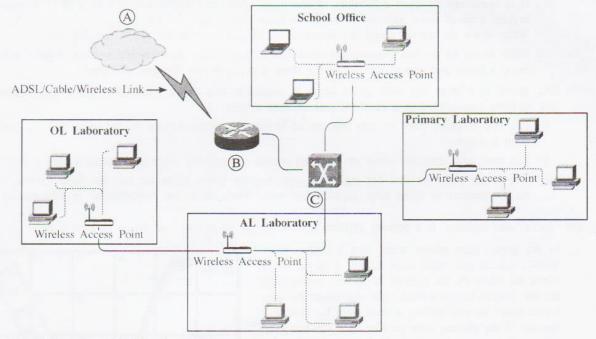
(b) Draw the truth table for the logic circuit in the following diagram.



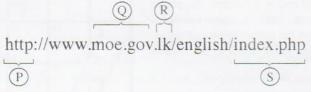
- (c) State two advantages of a laptop computer when compared with a desktop computer.
- (d) Utility programs help to manage, maintain and control computer resources. Which of the following can be considered as utility programs?
  - (i) Search engines

- (ii) Spreadsheet software
- (iii) Disk defragmenters
- (iv) Disk Scanners
- (v) Graphic design software
- (vi) Backup software
- (e) The fruit juice manufacturing company 'Pure Juice' requests a software developing organization to develop two software applications to automate its accounting activities and stock control activities. The Pure Juice company purchases a pay-roll application to process salaries and an office automation software for word-processing and spreadsheet activities from a software vendor.
  - (i) From the two types given below, what is the term used to describe the type of software required by *Pure Juice* from the software developing organization? {tailor-made software, packaged software}
  - (ii) From the two types given below, what is the term used to describe the type of software that *Pure Juice* bought from the software vendor? {tailor-made software, packaged software}
  - (iii) Give one advantage of packaged software over tailor-made software.

2. (a) The following diagram shows a part of a school computer network which is connected to the outside world. Identify and write down the relevant items labelled as (A), (B) and (C).



(b) (i) Consider the following URL.



Match the labels P-S used to denote different parts of the above URL with the correct letters in the list given below.

 $\{A: File\ name,\ B: Protocol\ used\ in\ the\ communication\ between\ the\ web\ browser\ and\ web\ server,\ C:\ Sub-domain,\ D:\ Top\ level\ domain\}$ 

(ii) Consider the following image showing an email that is being prepared to be sent to five recipients Amara, Rakesh, Kamala, Nazeer and Sama by the school IT teacher.



List the email addresses that will appear in the mail received by each of the following.

A - Nazeer

B - Kamala

C - Amara

- (c) State whether the following statements related to operating systems are true or false.
  - (i) Files may contain directories and other files.
  - (ii) One of the functions of an operating system is to interact with input/output devices such as keyboard, display and printer.
  - (iii) A key function of an operating system is to provide a command-based or graphical user interface to operate the computer.
  - (iv) An operating system facilitates user account management by providing separate logins for users.

3. (a) Figure 1 shows a text document partially formatted using a word processing software. Elements to be formatted in this document are labeled as (A) - (E).

## The Three R's of Waste Reduction

The waste disposal of most people is haphazard. Garbage is routinely thrown to road sides in polythene bags. In addition to the waste in their contents, polythene bags themselves, due to their non-degradable nature, will clog drains creating flash floods even from a slight drizzle. They may also create breeding areas for deadly mosquitoes. Some of the waste that is dumped

- They may also create breeding areas for deadly mosquitoes. Some of the waste that is dumped is highly toxic. Some waste like cloth and aluminum may take many years to decompose. Glass has been found in perfect condition even after thousands of years on earth. Many toxic liquids from industry and vehicle service stations are allowed to get absorbed into the earth. Heaps of garbage is unsightly too. The serene environment is under threat.
- To ensure a healthy and a livable environment for our future generations we have to stop spoiling our environment and start protecting it. An accepted way of environmental protection is to follow what is known as the 3R method. The Three R's denote reduce, reuse and recycle respectively.

Descriptions of these three techniques are shown in Table 1.

Table 1. The Three R's

Technique	Description		
Reduce	Reducing the amount of waste that is produced		
Reuse	Instead of throwing things away, reusing them again and again		
Recycle	Creating new products out of waste		

Figure 1

Figure 2 shows the tool bar of the interface of the word processing software that is being used to format the above document. Some tools on it are labelled  $\boxed{1}$  to  $\boxed{17}$ .

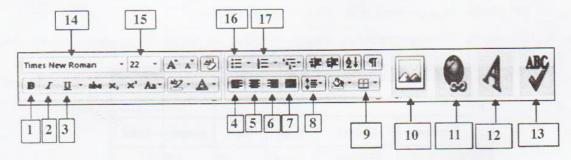


Figure 2

Write down how you could complete the following tasks using the necessary tools from those labelled in Figure 2. (Note: No marks will be awarded if more than the required number of tool labels are given.)

- (i) Center the title of the document shown by label (A).
- (ii) Increase the font size of the document title to 15. (Assume that the current font size is 12.)
- (iii) Make the document title bold.
- (iv) Justify paragraphs labelled B and C.
- (v) Make the text labelled D italic.
- (vi) Underline the text labelled E.
- (vii) Check the spellings in the document.
- (viii) Add a new table to the document after Table 1.

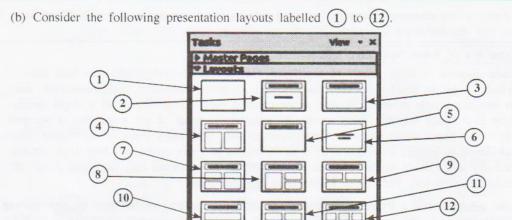


Figure 3

- (i) Which of the labelled slide layouts in Figure 3 is most suitable for a title slide in a presentation?
- (ii) Consider the following labelled interface of a presentation software tool bar.



Write down the label of the tool that you would use to achieve the following.

- (i) Run the presentation as a slide show. A
- (ii) Change the appearance of all slides in the presentation.
- (a) Consider the following spreadsheet segment containing the number of government schools classified by the gender of students for three provinces of Sri Lanka in 2013.

A	Leven	8	С	D	Ε	F
1	Number of Go	vernment School	ls By Gende	er 2013		
2	Province	District	Boys	Girls	Mixed	Total
3		Colombo	37	56	310	
4	Western	Gampaha	10	20	501	
5		Kalutara	6	12	387	
6		Total	Simple party			
7		Kandy	14	21	610	
8	Central	Matale	1	3	311	
9		Nuwaraeliya	2	5	538	
10		Total	17	29	1459	
11		Galle	7	10	409	
12	Southern	Matara	4	4	352	
13		Hambantota	1	2	313	
14		Total	12	16	1074	

(Source: http://www.moe.gov.lk/)

- (i) It is necessary to write a formula of the form =function1(cell1:cell2) in cell C6 to calculate and display the total number of boys' schools in the Western province.
  - Write down the appropriate terms for function1, cell1 and cell2 in the above formula.
- (ii) It is necessary to copy the formula entered in cell C6 to both cells D6 and E6. The steps followed for this purpose are labelled as A, B and C below. However, the order of steps is incorrect. Write down steps A-C in the correct order.
  - A Drag the fill handle to E6.
  - B Click on C6.
  - Click on fill handle.

- (iii) What formula would be displayed in cell D6 when the formula in cell C6 is copied to cell D6?
- (iv) It is necessary to write a formula of the form =function2(cell3:cell4) in cell C15 to display the highest total of boys' schools in the given three provinces.

  Write down the correct terms for function2, cell3 and cell4 in the above formula.
- (v) What would be the most appropriate chart type to graphically represent the number of girls' schools, boys' schools and mixed schools in the three districts of the Western province?
- (b) XYZ Sports is a shop that sells sports items. It maintains data about sports items, suppliers, customers and business transactions in a database management system.
  - List two essential items of data that should be recorded when a stock of one sports item is received from a supplier.
  - (ii) List two most essential items of data that should be recorded when a customer makes a purchase.
  - (iii) The owner needs to find out the three most popular sports items for the last three months based on the number of items sold. Identify and write down 'data' and 'information' in this scenario.
- 5. (a) 'Snakes and Ladders' is a popular children's game played on a board as shown in Figure 1.

In the game, each player starts with a token on the START square and takes turns to roll a single die to move the token by the number of squares indicated by the die. Tokens follow a fixed route marked on the game board which usually follows a track from the bottom to the top of the playing area, passing once through every square. If, on completion of a move, a player's token lands on the lower-numbered end of a "ladder", the player must move the token up to the ladder's higher-numbered square. If the player lands on the higher-numbered square of a "snake", the token must move down to the snake's lower-numbered square.

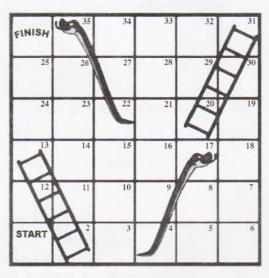
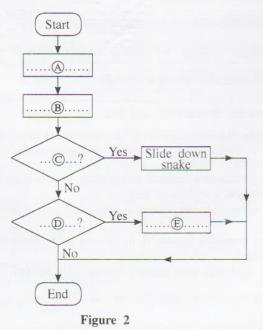


Figure 1

The flowchart shown below demonstrates the steps for **making a single move** in the game with some steps indicated by labels (A-E). Match the labels (A-E) in the flowchart with the phrases in the following list:

{Climb up ladder, Landed on snake head, Roll the die, At the bottom of a ladder, Move the token}



[See page twelve

(b) Consider the following flowchart for calculating the average of ten (10) numbers. The contents of labels P to T are missing in the flowchart.

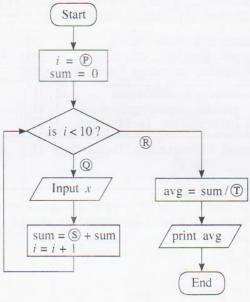


Figure 3

Identify and write down the appropriate contents for the labels  $\mathbb{P}$  to  $\mathbb{T}$  from the following list.  $\{0, i, x, yes, no\}$ 

- 6. (a) Select the correct term from the list of terms given below that appropriately matches the description given in statements (A)-(D). Write down the correct terms against statements (A)-(D) in your answer. {Virus scanner, Encryption, Firewall, Spam Filter, Device driver, Backup, Disk defragmenter}
  - A The primary purpose of this is to recover data after its loss, due to data deletion or corruption.
  - B This is a software or hardware barrier designed to prevent unauthorized or unwanted access to computer networks by hackers.
  - © This converts plain text or other data into a form that is unreadable by humans.
  - This prevents e-mails that are neither requested nor wanted from getting into an e-mail inbox.
  - (b) Consider the following scenario.

Assume that one of your friends offers you a copy of a commercial software that he bought from a shop that downloads software from the internet and sells on CDs. He states that the cost was significantly cheaper than the actual cost of the same software bought from the authorized agent.

State two reasons why you should not use the software CD that your friend offered.

(c) Consider the following.

"The digital divide is a division in the world population between those who are with and without access to ICT, knowledge of ICT and understanding of the opportunities presented by ICT. It consists of an infrastructure gap and a knowledge gap."

Write down two methods that can help to bridge the digital divide.

- (d) State whether each of the following statements is true (T) or false (F).
  - (i) Since there are no boundaries to the Internet, some content (such as gambling) found on the web may be legal in one country while the same may be illegal in other countries.
  - (ii) Privacy involves illegal copying and distribution of licensed software while piracy is concerned with the protection of personal information of individuals from unauthorized disclosure.
  - (iii) It is necessary to use an uninterrupted power supply (UPS) unit for a web server computer providing important information to general public while it is not essential for a new laptop used for personal work.