

# **GIT 01 E I, II**

# Department of Examinations, Sri Lanka

கூடுமான கணிரத்துர் துக்ஷன வினாக்கள், 2017  
பொதுத் தகவல் தொழில்நுட்பவியல், 2017  
General Information Technology Examination, 2017

ஸாமாநிய தொரத்துறை தாக்குதலை	I, II
பொதுத் தகவல் தொழில்நுட்பவியல்	I, II
<b>General Information Technology</b>	I, II

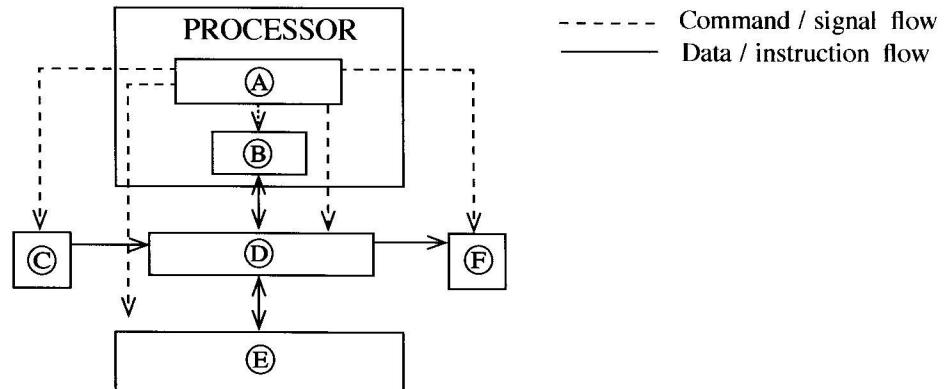
# **General Information Technology II**

*\* Answer four questions only.*

1. (a) Draw the symbol for the NOT gate and draw its truth table.  
(b) Draw the equivalent logic circuit diagram for the following expression:  
$$(P \text{ AND } Q) \text{ OR } (R \text{ AND } Q) = S$$
  
(c) Convert  $129_{10}$  to its binary equivalent. Show the steps.  
(d) Write down the most suitable type of computer for each of the following tasks choosing from the list given below:
    - (i) to run the library system software at the lending desk in a library
    - (ii) for a student to work on her software programs while she is travelling
    - (iii) for a driver's assistant to advise the driver about roads with lesser traffic

**List:** {a desktop computer, a laptop computer, a palmtop / tablet computer}

  
(e) The following is a sketch of a computer block diagram:



Write down the components labelled **A**, **B**, **C**, **D**, **E** and **F** in the above block diagram choosing from the list given below.

**List:** {Arithmetic and Logic Unit (ALU), auxiliary storage, control unit, input, main memory, output}

- (f) An automated cooling system (Z) needs to be developed for a school computer laboratory. The room has two temperature sensors A and B. The cooling system should operate when the temperature indicated by either or both of these sensors exceeds a predefined value **and** the user switch C is also in the ON position.

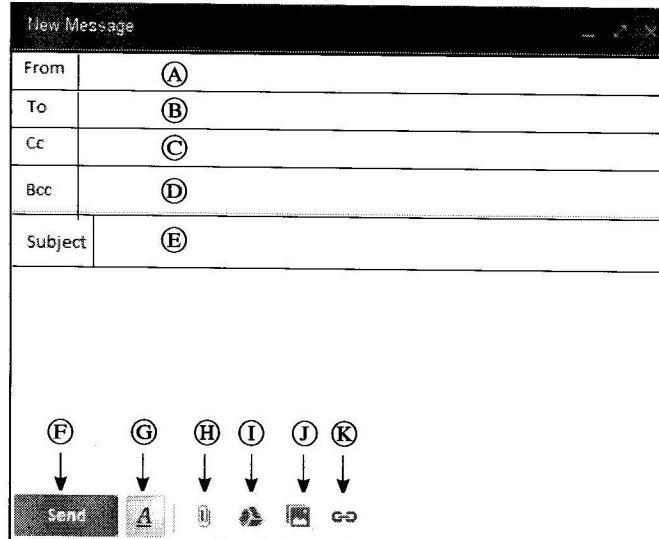
Consider the following state indicators:

Scenario	State
Temperature in a sensor exceeds the predefined value	'1'
Temperature in a sensor does not exceed the predefined value	'0'
User switch C is ON	'1'
User switch C is OFF	'0'
Cooling system Z operates	'1'
Cooling system Z does not operate	'0'

Write down the binary values for the states indicated by Z1 to Z8 to reflect the expected Z output for the corresponding A, B, C input combinations.

State of A	State of B	State of C	State of Z
0	0	0	Z1
0	0	1	Z2
0	1	0	Z3
0	1	1	Z4
1	0	0	Z5
1	0	1	Z6
1	1	0	Z7
1	1	1	Z8

2. (a) Kamal has purchased a laptop computer with an operating system. List **two** other requirements he would need in order to send an email using his laptop.
- (b) Kamal decides to send an e-mail to his father (somasiri@xmail.com) about his current studies at the university with a copy to his brother Nimal (nimal@xmail.com). He also needs to send some digital photos which he took during the weekend with this e-mail. Further, he wants to send a copy of the email to his uncle Sam (sam@xmail.com) without the knowledge of other receivers of this email.
- The figure given below shows the interface of the email software that Kamal uses with labels Ⓐ - Ⓙ.



- (i) In which fields should Kamal type the email address of his:  
 (I) father?      (II) brother?      (III) uncle Sam?
- (ii) Where should Kamal type the heading of the email message?
- (iii) Which button should Kamal select in order to attach the digital photographs?
- (iv) Write down the general name of the folder which contains copies of emails sent by Kamal.
- (v) One of the e-mails sent by Kamal was returned.  
 (I) Write one possible reason for returning this email.  
 (II) In which email folder would Kamal find the returned email?

- (c) Consider the following paragraph with nine blank spaces numbered from (1) to (9).

XYZ company has made their business information publicly available on the .....(1)..... .The .....(2)..... of the website is <http://www.xyz.com>. The .....(3)..... of the company is xyz.com. The website of the company consists of a collection of .....(4)..... . The website was developed by a web development company using .....(5)..... . The web pages were linked using .....(6)..... to allow users navigate from one web page to another. The company purchased a .....(7)..... to host the website. They also subscribed to a 10Mbps Internet connection from a(an) .....(8)..... . The public can access the website through .....(9)..... software.

Identify and write down the most suitable terms to fill the blank spaces using the list of terms given below.

List: {domain name, HTML, hyperlinks, Internet Service Provider, server machine, URL, web browser, web pages, World Wide Web}

(d) State whether the following statements relating to operating systems are **true or false**.

**(Note:** Indicate only 'true' or 'false' against the relevant statement number. You are **not** required to write the statement.)

- (i) Operating system provides an interface to the users.
- (ii) Operating system manages resources of the computer efficiently.
- (iii) A directory can contain files and other directories.
- (iv) Process management is an important task of the operating system.

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

**A**

### Social Media

About 90% of teens have used some form of social media and 75% have a profile on a social networking site, experts say. More than half of all American teens visit social networking sites every day. These numbers are way up from just a few years ago, and there's almost no chance of them ever coming down again.

There are plenty of good things about social media—but also many potential dangers and things that you want your kids and teens to avoid. They don't always make the smartest choices when they post something to a site like Facebook or YouTube, and sometimes this can lead to problems.

So it's important for parents to teach their kids how to use social media wisely.

**B**

### The Good

Social media can help kids:

stay connected with friends and family

**C**

volunteer or get involved with a campaign or charity

enhance their creativity through the sharing of ideas, music, and art

meet and interact with others who share similar interests

**D**

### The Bad

The flipside is that social media can be a hub for things like cyberbullying and questionable activities. Without meaning to, kids can easily share more online than they should.

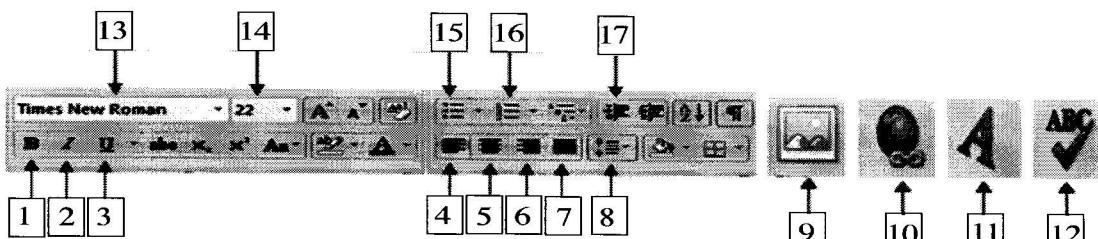
One study showed that 9 out of 10 teens post photos of them online or use their real names on their profiles; 8 out of 10 reveal their birth dates and interests; and 7 out of 10 post their school name and the town where they live. Actions like this can make kids easy targets for online predators and others who might want to cause them harm.

**E**

Source: <http://kidshealth.org/en/parents/social-media-smarts.html>

**Figure 1**

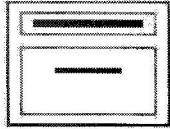
**Figure 2** shows the formatting tools provided by a generally used word processing software. Selecting from labels **1** - **17**, write down the label of the tool required to complete each task given on the next page. **(Note:** No marks will be awarded if you write more than one label for each task.)



**Figure 2**

- (i) Center justify the title of this document labelled as *A*.  
(ii) Change the font size of the title from 10 to 32.  
(iii) Change the appearance of two sub-titles labelled as *B* to boldface.  
(iv) Change the appearance of sentences labelled as *C* to a numbered list.  
(v) Change the appearance of the word labelled as *D* to italics.  
(vi) Remove the hyperlink in text labelled as *E*.  
(vii) Check the spellings of the document.

(b) Given in the labelled list below are some slide layout options available in a presentation software:



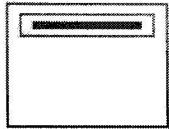
(A)



(B)



(C)



(D)

Write down the relevant term from the list given below for each layout option labelled ① - ④.

**List:** {Blank, Title and Content, Title Slide, Title Only, Two Content}

**(Note:** You are required to write only the label ① - ④ and the relevant term from the list on your answer sheet.)

(c) Read the following statements given below. Indicate whether these statements are **true** or **false** with respect to presentation software. **(Note:** Write only the statement number and whether the statement is true or false on your answer sheet. Do not copy the statements to your answer sheet.)

- (i) *Slide transitions* are the animation-like effects that occur in *Slide Show View* when you move from one slide to the next.
- (ii) *Slide Show View* takes up the full computer screen, like an actual presentation.
- (iii) In *Slide Show View*, you see your presentation the way your audience will.
- (iv) *Two content* slide layout option can be used to add both text and an image to a slide.
- (v) Visual effects applied to individual items of a slide or to an entire slide in presentation software are called *animations*.
- (vi) Rearranging or deleting slides is easy to do in *Slide Sorter View*.
- (vii) A possible extension for an electronic presentation file name is .exe.

4. (a) Temperature and rainfall data collected for a 24 hour period in several meteorological stations are given in the spreadsheet below:

	A	B	C	D
1				
2	Meteorological Station	Maximum Temperature (°c)	Minimum Temperature (°c)	Daily Rainfall (mm)
4	Anuradapura	31.8	22.0	48.5
5	Badulla	30.0	17.5	0.0
6	Bandarawela	24.1	15.3	0.3
7		24.4	0.0	
21	Ratnapura	33.1		
22	Trincomalee	31.0	22.9	77.5
23	Vavuniya	32.0	23.0	11.9
24	Minimum			
25	Maximum			
26	Average			

Source: Department of Meteorology

- (i) Write down the necessary formula in the form of =function 1(cell1:cell2) which should be entered to the cell B24 to display the lowest value of the maximum temperature in all 20 stations.
- (ii) Write down the necessary formula in the form of =function 2(cell3:cell4) which should be entered to the cell B25, to display the highest value of the maximum temperature in all 20 stations.

- (iii) Write down the necessary formula in the form of `=function3(cell5:cell6)` which should be entered to cell B26 to display the average maximum temperature of all 20 stations.
- (iv) If the formula entered to cell B24 is copied to the cell D24 what will be the formula stored in cell D24?
- (v) If the formula in cell B25 is copied to cell D25, what **information** is displayed in cell D25?
- (vi) Give **two** types of charts which can be used to show the maximum and minimum temperatures of all 20 stations.
- (b) A school library maintains a database consisting of three tables, namely *Book\_Details*, *Student\_Details* and *Borrowing\_Details*, to provide services to the students. A sample of data in the three tables are given below.

#### **Book\_Details**

<b>Book_Code</b>	<b>Book_Name</b>	<b>ISBN</b>	<b>Author</b>	<b>Publisher</b>	<b>Published_Year</b>
T0013	Jana Katha 1	955-597-515-9	NIE	NIE	2000
M0029	Kumarodaya 1	955-21-0341-X	L.S.E. Amararatne	MD Gunasena	2015
S0107	World Famous Accidents	617-53-1152-4	Mast Ram Kapoor	Pustak Mahal	1997
T0019	Latha Mangeshkar A Biography	81-7476-023-7	Raju Bharatan	UBS Publishers	1995

#### **Student\_Details**

<b>Admission_No</b>	<b>Student_Name</b>	<b>Date_of_Birth</b>	<b>Gender</b>	<b>Admitted_Year</b>	<b>Admitted_Class</b>
100001	Nalanda	12/03/2002	M	2008	1
100002	Farzana	12/03/2002	F	2008	1
100003	Sriskanda	06/01/2003	M	2009	1
100004	Kamala	17/07/2005	F	2011	1
100005	Nalanda	09/04/2005	M	2011	1

#### **Borrowing\_Details**

<b>Admission_No.</b>	<b>Book_Code</b>	<b>Date_Borrowed</b>
100003	T0013	20/07/2017
100001	S0107	20/07/2017
100004	T0019	21/07/2017

- (i) The library acquires another copy of the book **Jana Katha 1**.

Explain why T0013 cannot be used as the Book\_Code when adding the new copy of this book to the Book\_Details table.

- (ii) Give a suitable field in the Book\_Details table to be selected as the Primary Key. Assume that, the new copy of Jana Katha 1 has been added to the Book\_Details table.

- (iii) Give a suitable field in the Student\_Details table to be selected as the Primary Key.

- (iv) Sriskanda borrows the book **Kumarodaya 1** on 22/07/2017. Show the added record of the Borrowing\_Details table.

- (v) In order to list all the books published before the year 2000 the following query is executed:  
*List Book\_Code of Book\_Details table having Published\_Year less than 2000.*

What is the output of this query?

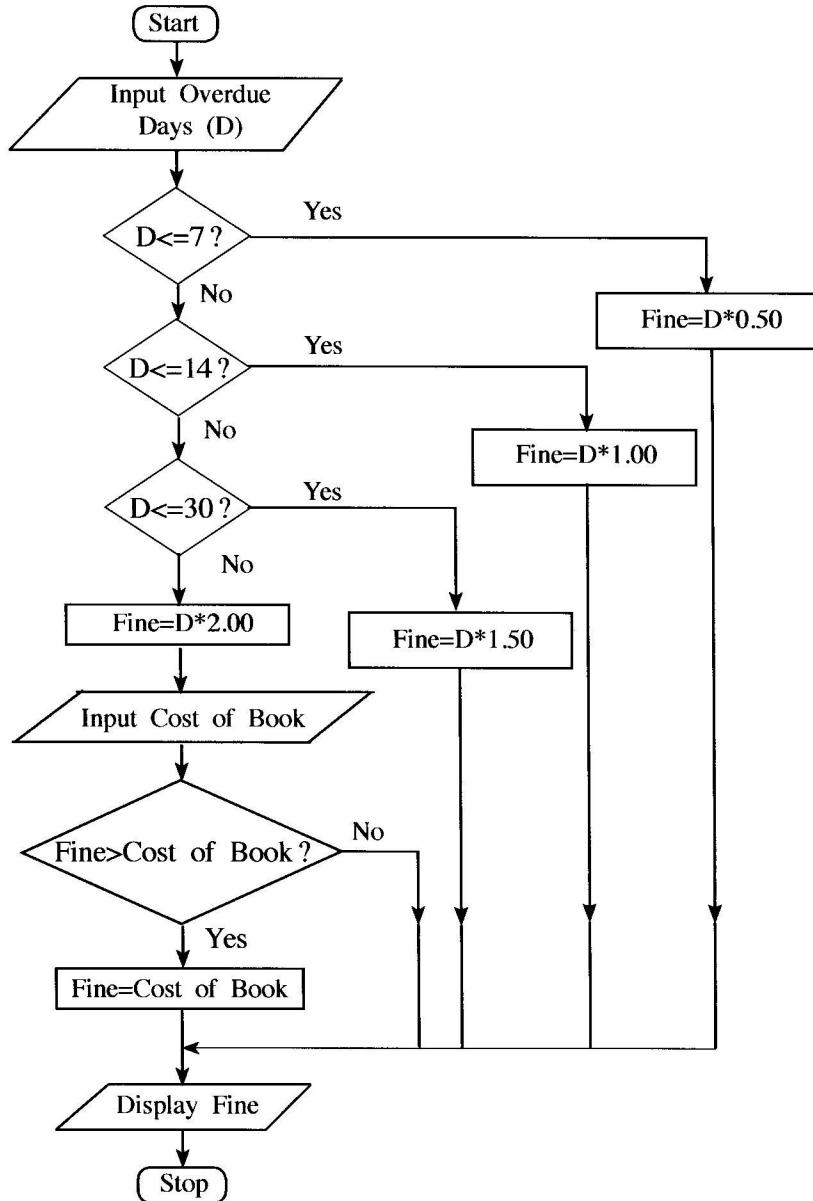
5. (a) Represent the following logic in a flow chart:

```

Begin
  Input studentGrade
  If studentGrade >= 75 Then
    display "A"
  Else
    If studentGrade >= 65 Then
      display "B"
    Else
      If studentGrade >= 55 Then
        display "C"
      Else
        display "F"
      End If
    End If
  End If
End

```

- (b) The following flowchart presents the method of imposing fines for members of a library for their overdue books:



The pseudo-code segment given below with missing labels **P**–**W** represents the logic of the previous flowchart:

```

Begin
  (P)
  If (Q)
    Fine = D*0.50
  Else
    If (R)
      Fine = D*1.00
    Else
      If (S)
        Fine = D*1.50
      Else
        (T)
        (U)
        if Fine > Cost of Book
        (V)
      End If
    End If
  End If
(W)
End

```

Select the correct statement/expression for each of the missing labels from the list given below. Write down the correct statement/expression against the label.

**List:** {D <= 7, D <= 14, D <= 30, Fine = D\*2.00, Fine = Cost of Book, Input Cost of Book, Input Overdue Days (D), Display Fine}

6. (a) Consider the following list labelled as **A** - **G** that contain some computer related specifications:  
**A** 1.9 GHz, **B** 8 GB DDR4, **C** 14 inch, **D** 500 GB SATA, **E** 24 ports, **F** 1.9 Kg, **G** 24 pages per minute  
Identify the suitable specification label from the above for each term given in the following list:  
**List:** {Display, Network switch, Printer, Processor speed, RAM, Storage, Weight}  
**Note:** Write down the term and the label for the relevant specification on your answer sheet.)
- (b) Consider the following paragraph that describes the development and implementation of an information system:  
**Buddhika** identifies requirements for a new student information system by studying the current system and discussing with users. Then he designs a system that satisfied requirements in such a way that **Raj** could add student data into the system easily. Based on the design created by **Buddhika**, **Geethmi** develops the student information system. **Sihan** installs and tests a new server so the new system could be run from it. **Krishna** updates the university website to inform users that the new Student Information System will be in use from next week.

The following list indicated by labels **H** - **L** gives some employment positions in the field of information technology:

**H** - Programmer, **I** - System Analyst, **J** - Systems Engineer, **K** - Data Entry Operator, **L** - Web master  
Based on the description, identify the suitable employment positions for **Buddhika**, **Raj**, **Geethmi**, **Sihan** and **Krishna** from the given list. Write down the name of the person and the label of the relevant employment position on your answer sheet.

(c) Consider the descriptions given in the following table:

Description no.	Description
①	Working with a computer while sitting and bent on a chair for a long time
②	Software that appears to be useful but is damaging once installed in the computer
③	Problems caused when looking at the display for long time while working with a computer
④	Downloading a copyrighted software without paying or permission

(i) The following terms labelled ⑩ – ⑪ are related to the descriptions given in the above table:

[⑩ - Piracy, ⑪ - Eye strain, ⑫ - Trojan Horse, ⑬ - Backache]

Identify and write down the suitable term from the above list for each of the descriptions given in the table.

(Note: Write down the relevant label of the term against the Description no. on your answer sheet.)

(ii) The following phrases labelled ⑭ – ⑯ represent the possible solutions for the issues described in the above table.

[⑭ - sitting with a correct posture, ⑮ - making public aware about copyright laws, ⑯ - focusing on a distant object time to time while using the computer, ⑯ - installing antivirus software]

Identify and write down a suitable solution from the above list for each of the issues described in the table.

(Note: Write down the relevant label of the solution against the Description no. on your answer sheet.)

\* \* \*