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 පොතුත් තකවල් ජෛතීත්‍යාලුප්ප පරිශේ, 2019, 2020, 2021, 2022(2023)
 General Information Technology Examination, 2019, 2020, 2021, 2022(2023)

ஸாமானிக் கொருப்பு கூக்குள்ளத்	I, II
பொதுத் தகவல் தொழில்நுட்பவியல்	I, II
General Information Technology	I, II

பூர்வ நூற்று
முன்று மணித்தியாலம்
Three hours

அம்தர கியலில் காலை - மினித்து 10 பி
மேலதிக வாசிப்பு நேரம் - 10 நிமிடங்கள்
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 in answering.

General Information Technology I

Instructions:

- * Answer all the questions.
 - * Write your **Index Number** in the space provided in 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 from (1), (2), (3), (4) which is correct or most appropriate and mark your response on the answer sheet with a cross (x) in accordance with the instructions given at the back of the answer sheet.

8. Which of the following applications requires a DBMS?
- (1) Recording of the visitors count of a website
 - (2) Identification of a fingerprint of a person
 - (3) Automatic control of an air conditioner
 - (4) Detection of a human face
9. Which of the following correctly describes the properties of a digital image?
- (1) Raster
 - (2) Vector
 - (3) Resolution
 - (4) Layers
10. Which of the following graphic design type uses text effects heavily?
- (1) Art designing
 - (2) Image designing
 - (3) Shapes designing
 - (4) Web designing
11. How can you identify whether a website has a valid digital certificate?
- (1) The padlock sign in the address bar looks normal
 - (2) The star sign in the address bar is coloured
 - (3) The address starts with 'www'
 - (4) It is free from advertisements
12. Which of the following statements is correct with respect to a web page?
- (1) A web page is a text only document on the World Wide Web
 - (2) An MS Word document can be saved as a web page
 - (3) Both web site and the web page are same
 - (4) A web page has a unique domain name
13. Which of the following statements correctly describes a hyperlink?
- (1) An image can have only one hyperlink
 - (2) A hyperlink in a web page always connects to an external web page
 - (3) QR codes are considered as paper-based hyperlinks
 - (4) A hyperlink always refers to a database server
14. Which of the following is a search engine?
- (1) Microsoft Edge
 - (2) Google Chrome
 - (3) Mozilla Firefox
 - (4) Microsoft Bing
15. Which of the following is true related to MOOCs?
- (1) MOOCs stands for Massive, Online, Opensource, Courses
 - (2) All MOOCs courses are available free
 - (3) To follow a MOOCs course, there are prerequisites to be completed
 - (4) People cannot work collaboratively in MOOCs Courses
16. Consider the following scenario:
- Imagine you had dinner with your friends at a restaurant not far from home. After dinner, the waiter who came to you gave you the detailed bill with the prices of each food item you ordered and the total amount. You checked the detailed bill and made the payment before leaving the restaurant.
- Which of the following statements regarding the above event is most appropriate to accurately describe the data and information?
- (1) The total amount of the bill is only an information, but it is not a data
 - (2) The total amount of the bill is only a data, but it is not an information
 - (3) The total amount was an information when the detailed bill was received, but it became a data at the time of payment
 - (4) It is not possible to determine whether the detailed bill is data or information based on the details provided

17. Which of the following statements is true with respect to ASCII and Unicode?
- (1) ASCII has more characters than Unicode
 - (2) ASCII was developed to overcome the problems of Unicode
 - (3) Unicode supports multilingual computing, but ASCII is limited only to English language
 - (4) Unicode and ASCII use 4 bytes to represent each character
18. What happens when you press the 'Alt' and 'Down Arrow' keys at the same time in an empty table in a document of a word processor?
- (1) Inserts a new column
 - (2) Inserts a new row
 - (3) The cursor moves to the next column
 - (4) The cursor moves to the next row
19. You are given a spreadsheet with values 1, 2, and 3 in E1, E2 and E3 cells respectively. The cell F1 has the formula $=\$E1+E2+\$E\$3$.
Which of the following will be the value of F2 when the formula in F1 is copied to F2?
- (1) 6
 - (2) 7
 - (3) 8
 - (4) 9
20. A science teacher has given a group assignment to prepare a presentation about the advantages and disadvantages of different energy sources. Shamith and his group are searching for a suitable layout in MS PowerPoint for this purpose.
Which of the following is the most suitable layout for this?
- (1) Blank Slide
 - (2) Comparison
 - (3) Title and content
 - (4) Content with caption
21. Which of the following statements is correct with respect to a Database Management System?
- (1) Primary key is used to identify data in a table while a foreign key is used to link to a different table
 - (2) Foreign key is used to identify a record while primary key links between tables
 - (3) Foreign key identifies a set of records in the linked table while primary key identifies a record in the main table
 - (4) Foreign key enforces controls over the data that can be stored in the main table
22. Which of the following graphic designing software works in both vector and raster workspaces?
- (1) Adobe Illustrator and Corel Painter
 - (2) Affinity Designer and CorelDRAW
 - (3) Affinity Designer and Xara Designer PRO X
 - (4) Corel Painter and Xara Designer PRO X
23. Which of the following provides functions related only to audio editing?
- (1) Cutting and blurring
 - (2) Mixing and fading
 - (3) Fading and blurring
 - (4) Mixing and coloring
24. Which of the following options show the transmission media according to ascending order of their data transmission speed?
- (1) 4G, Wi-Fi, UTP
 - (2) UTP, Optical Fibre, Wi-Fi
 - (3) Microwave, UTP, Optical Fibre
 - (4) Wi-Fi, Microwave, 4G

25. The natural eye movement of visitors who arrive on a web page tends to follow the shape of either F letter or Z letter pattern. Therefore, F-shaped and Z-shaped web page layouts have been widely used in web page designing.

Which of the following statements correctly explains the usage of F-shaped and Z-shaped layouts?

- (1) F-shaped layout is more effective for text-heavy pages such as blog posts and search results while Z-shaped layout is good for minimal text pages such as landing pages and home pages
- (2) Z-shaped layout is more effective for text-heavy pages such as blog posts and search results while F-shaped layout is good for minimal text pages such as landing pages and home pages
- (3) Both F-shaped layout and the Z-shaped layout are equally effective in designing text-heavy or minimal text web pages
- (4) The selection of F-shaped or Z-shaped layout is totally depended on the designer and irrelevant to the content of the page

26. Ordered lists in HTML

- (1) rearrange its items in alphabetical order
- (2) display their items with numbers by default
- (3) show items with bullets
- (4) are also called bulleted lists

27. Which of the following is correct?

- (1) HTML is a programming language
- (2) HTML can directly access MySQL databases
- (3) HTML provides the basic building blocks of the webs
- (4) HTML is compiled into byte code before execution

28. Which of the following describes only the role of system analysts?

- (1) Studies the present system, analyzes systems, define system requirements, designs system, evaluate and update the system
- (2) Design user interface, write and review code, integrate multimedia content to the website, testing web application
- (3) Create layouts, position artwork and text into layout, edit graphics, convert files for printing
- (4) Obtain requirements from the clients, design and implement software programs, testing and evaluating systems, developing quality assurance procedures

29. Consider the following components of a computer:

- A – Intel Core i5 Processor
- B – 24" LCD monitor
- C – 802.11ac 2.4/5 GHz wireless network adapter
- D – JeDEL Standard USB Keyboard K11 Black
- E – 40 GB solid state drive

Which of the following combinations of components is most helpful in considering a computer as a system?

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

30. Consider the following Boolean expression and four statements A, B, C and D:

Boolean Expression: $X + (\text{NOT } Y + Z)$

- A – ($X = 0, Y = 1, Z = 0$)
- B – ($X = 1, Y = 1, Z = 0$)
- C – ($X = 0, Y = 1, Z = 1$)
- D – ($X = 0, Y = 0, Z = 0$)

Which of the following would give the value of the above Boolean expression as 0?

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

31. Consider the following statements:

- A – Command line interfaces are faster than graphical user interfaces
- B – All features accessible through CLI can also be accessed through GUI
- C – The programming language used in a command line interface is called a shell language

Which of the following statements is valid for command line interfaces?

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

32. Consider the following statements:

- A – Text documents such as letters, resumes and reports can be created using a word processing software
- B – MS Word and LibreOffice Writer are two examples of word-processing software
- C – Word processing is not possible on smartphones

Which of the following is correct with respect to word processing software?

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

33. Consider the following statements:

- A – Misspellings are identified with reference to the incorporated dictionary
- B – Grammatical errors are identified using a list of rules of proper usage of grammar
- C – New words can be inserted into the incorporated dictionary

Which of the following is true about a spelling and grammar checker in word processing software?

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

34. Consider the following chart types available in a spreadsheet software:

- A – Clustered Column Chart
- B – Line Chart
- C – Stacked Column Chart
- D – Pie Chart

There is a requirement to compare the total value of a sale of a product and the amount bought by different segments of customers (For example, the total sales of product A is Rs. 650. Out of which Rs. 450 sales by high income customers and remaining sales of Rs. 200 were purchased by low income customers).

Which of the following charts is best suited for the above task?

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

35. Consider the following statements:

- A – Animation combo and custom motion are two ways of creation in custom animation
- B – Animation Pane or Custom Animation gives the total control over the animations in the PowerPoint slide
- C – Custom animations can be applied to text, shapes or pictures
- D – Primary concept of using animations is to make content interactive

Which of the following is correct regarding custom animations?

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

36. Consider the following statements:

- A – Change the graphic's color, orientation, position and shape are some activities in graphic editing process
- B – Image editors can change the pixels to enhance the image in vector graphics
- C – Graphic editing software broadly grouped into vector graphics editors, raster graphics editors and 3D modelers
- D – Vector graphics can be resized without losing any resolution

Which of the following is correct regarding digital graphics editing?

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

37. Consider the following items:

- A – Virtualized computing resources
- B – Application development tools
- C – Virtualized hardware

Which of the following gives cloud computing services only?

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

38. Consider the following statements:

- A – An MP4 video can be embedded into an HTML file
- B – An MP3 audio can be embedded into a web page
- C – A YouTube video can be inserted into another web page

Which of the following is correct with respect to inserting an audio or a video into a web page?

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

39. Consider the following requirements of an organization:

- A – Employees shall have sufficient hardware and software tools which enables communication and performing their task
- B – Should invest on effective communication tools required for assessing the performance of employees
- C – Should train employees to work in virtual mode
- D – Should have a companywide policy on digital adaptation

Which of the following is required for the organization to adopt work from home concept successfully?

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

40. Maneesha is a school leaver and just started her own business. She opened several social media accounts to promote her business. However, after seeing some media posts on social media misuse, she needs your advice on how to secure her social networking accounts.

Consider the following statements:

- A – Setting up strong passwords
- B – Always maintain a soft copy of all your passwords in your PC
- C – Link your account with a phone number
- D – Always keep sign-in with the accounts

Which of the following would be your advice to Maneesha?

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

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GITE I, II



සාමාන්‍ය තොරතුරු තාක්ෂණ වියාගේ, 2019, 2020, 2021, 2022(2023)
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 General Information Technology Examination, 2019, 2020, 2021, 2022(2023)

ஸாமாநா தொரணரை காக்ஷனை	I, II
பொதுத் தகவல் தொழில்நுட்பவியல்	I, II
General Information Technology	I, II

General Information Technology II

* Answer four (04) questions only.

1. Mr. Shan is a science teacher. He teaches biology to G.C.E. A/L students using a blended micro-learning approach. He wants to create his own digital content (videos) for his teaching. He intends to buy a computer and a video camera for this purpose. But he has no idea about the right specifications for a suitable desktop computer for video editing.

Mr. Shan asked one of his friends to help him buying a desktop computer. The friend gave him three specifications as shown below for a desktop computer and asked him to select one. Now he wants your support to select the right specification for a desktop computer.

	Specification 01	Specification 02	Specification 03
Processor Model	Intel Core i5	Intel Core i3	Intel Core i5
Processor Generation	3rd Generation	4th Generation	3rd Generation
RAM	4GB	4GB	8GB
Memory Type	DDR3	DDR3	DDR3
Hard Disk Type	HDD	HDD	HDD
Hard Disk Capacity	500GB	320GB	500GB
Graphics	Intel HD Graphics	Intel HD Graphics	Intel HD Graphics
Operating System	Windows 10 Pro 64Bit	Windows 10 Pro 64Bit	Windows 10 Pro 64Bit
Screen Size	Dell 20" LED Monitor	19" Dell Monitor	Dell 22" LED Monitor

- (i) What are the factors you consider for a desktop computer for video editing? (10 marks)

(ii) Select **one** of the three specifications given and justify your answer. (09 marks)

(iii) Write at least **150** words article to a newspaper encouraging every citizen to have an understanding on basic computer hardware. (06 marks)

2. The Virtual Information Technology University (VITU) is a degree awarding institution. Currently it offers a Bachelor of Science Honours in Information Technology (B.Sc. Hons (IT)) degree. The following admission criteria for this degree was published on their website in an announcement inviting a new batch of students for the degree.

(i) Three passes in one attempt in the physical science stream of GCE (A/L)

OR

(ii) (a) Three passes in one attempt in any other stream of GCE(A/L)

AND

(b) Successfully completed an acceptable foundation course in Information Technology with Mathematics.

(i) Identify **three** logical connectives and explain their functionalities. (09 marks)

(ii) Draw a truth table for the above admission criteria. (10 marks)

(iii) Discuss the suitability of a truth table to represent the above admission criteria. (06 marks)

3. A young farmer who lives near the main road from Colombo to Anuradhapura has decided to sell his vegetables himself to tourists traveling along the road. He has realized that it is essential to inform tourists in advance about the types of vegetables to be sold, their quantities and prices to make this a successful business. He discussed this idea with his daughter who is sitting for GCE A/L this year. She recommended a web-based software application for this. However, she has no idea of how to develop such a web-based system using HTML, JavaScript and MySQL like tools. Still, she has a knowledge about using ICT including mobile applications.

(i) What is a web authoring tool? Explain. (08 marks)

(ii) Propose a web authoring tool known to you which can be used for this task and explain how you can develop this application using it. (12 marks)

(iii) Discuss the advantages of web authoring tools. (05 marks)

4. "Sri Lanka generates around 25,000 metric tons of e-waste per year of which 5,000 to 8,000 metric tons are exported to other countries for recycling, as recycling facilities are not available in Sri Lanka, said Assistant Director of Environment Pollution Control and Chemical Management Division of the Environment Ministry Sujeewa Fernando."

(Extract from Dailynews online, 14th October 2021)

(i) Define e-waste and state the major contributors to e-waste. (10 marks)

(ii) Explain negative impact of e-waste for the environment. (09 marks)

(iii) Explain how you can manage e-waste using 3R concept (Reduce, Reuse, Recycle). (06 marks)

5. Hewage Associates is a software development company catering for large international companies. When they undertake a system development assignment, they need to continually interact with different personnel in the clients' organization. These interactions can be one-to-one calls, small-group meetings, as well as large group trainings. In the process of system development, the company develops many electronic documents, which are usually confidential. These documents need to be sent to the client in a secure manner. During implementation stage some confidential information such as usernames and passwords also need to be sent in a secure manner. Hewage Associates makes all these communications on-line without any physical interaction.

- (i) Propose a suitable tool to conduct the above mentioned meetings. Justify your answer giving the supportive features of the tool you propose. (10 marks)
- (ii) Discuss different ways to send the electronic documents in a secure manner. (09 marks)
- (iii) What are the methods that you can use to send information such as usernames and passwords securely and quickly? (06 marks)

6. The Government of Sri Lanka has implemented a new Personal Income Tax from January 1, 2023. Annual tax calculation should be done using income tax percentages as per the table given below on "Annual income for Tax Calculation":

Income tax rates	
For the first Rs. 500,000	6%
For next Rs. 500,000	12%
For next Rs. 500,000	18%
For next Rs. 500,000	24%
For next Rs. 500,000	30%
For the balance	36%

(Source: INLAND REVENUE DEPARTMENT- Notice to Taxpayers, PN/IT/2022-03, 15.12.2022)

- (i) Explain the benefits of formulae in spreadsheets. (07 marks)
- (ii) Draw a sketch of spreadsheet to calculate the monthly income tax for a given total monthly income for tax calculation. Explain the content of each cell in your spreadsheet. (10 marks)
- (iii) Describe the formatting you applied in the spreadsheet. (08 marks)

7. A school near to where you reside has invited you to give a lecture on "Operating Systems" for their "IT Day". The organizing committee hopes to invite students from other schools in the area to participate. Therefore, the organizing committee has also decided to prepare a book containing the speeches of the guest speakers to be given to all those who will participate on that day. The Organizing Committee asks you to prepare a two-page document on "Operating Systems". Prepare the document incorporating the following three items.

- (i) Readers should be introduced to **three** commonly used operating systems. (06 marks)
- (ii) Introduce **five** functions of a modern operating system in such a way that readers can understand what is happening inside a computer. (10 marks)
- (iii) The role of a booting process of an operating system when booting a computer should be clearly presented. (09 marks)

* * *