மாகாணக் கல்வித் திணைக்களம், வடமாகாணம்
Provincial Department of Education, Northern Province

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கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர) பரீட்சை, 2013 நவம்பர்
General Certificate of Education (Ordinary Level) Examination, 2013 November

தகவல் தொடர்பாடல் தொழினுட்பவியல் I
Information & Communication Technology I

ஒரு மணித்தியாலம்
One Hour

Information & Communication Technology I

Answer all questions.

Mark a cross (X) on the number corresponding to your choice in the answer sheet provided.

1. Difference Engine was invented by.

(1) John Von Neumann (2) Charles Babbage
(3) John V.Atanasoff (4) Ada Lovelace

2. Which of the following can be considered as information?

(1) Name of school
(2) Marks obtained by a student for ICT subject
(3) Average marks obtained for ICT subject by all the students of a class
(4) Marks obtained by two students for ICT subject

3. Consider the followings.

A – ALU B - CU C - RAM D – Register

Which of the above is/are the component(s) of CPU?

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

4. Which of the following contains the fastest access of data?

(1) RAM (2) Hard disk
(3) Register (4) Floppy disk

5. 8 MB =

(1) 2^{13} GB (2) 2^{13} KB (3) 128 bits (4) 128 Bytes

6. The binary equivalent of 19_{10} is.

(1) 10011 (2) 01010 (3) 01001 (4) 10101

7. $1011_2 + 110_2$ =

(1) 10101 (2) 10111 (3) 10011 (4) 10001

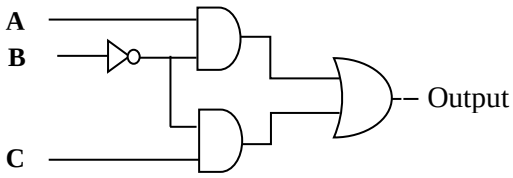
8. Output of the following logic circuit is.

(1) $\overline{B}\ (A + C)$

(2) $A.B + \ \overline{B}$

(3) $A.C + B$

(4) $A + B + C$



9. The result of the Boolean expression $x\ .\ y + z$ is 0 when.

(1) $x = 0\ , y = 0, z = 0$ (2) $x = 0, y = 1, z = 1$

(3) $x = 1, y = 1, z = 0$ (4) $x = 1, y = 0, z = 1$

10. Consider the following statements about operating system.

A – Handling files and folders B – Interfacing between user and hardware

C – Helping to run application software

Which of the above is/are correct?

(1) A only (2) B only (3) A,C only (4) A,B,C all

11. Which of the following statement is false regarding word processing software?

(1) Different header and footer for even and odd pages can be set

(2) Different page number formats for different sections can be set

(3) Different header and footer for first page of a section can be set

(4) Different header and footer for last page of a section can be set

12. Portrait and Landscape in a word processing software are called.

(1) Page Orientation (2) Paper Size (3) Page Layout (4) Margin

13. What is the purpose of inserting header and footer in document?

(1) Enhancing the overall appearance of the document

(2) Marking the starting and ending of page

(3) Making large document more readable

(4) Allowing page details on top and bottom on document when printed

14. Which one of the following function is available to find total numbers in a selected cell range in a spreadsheet software?

(1) Total() (2) Sum() (3) Add() (4) Count()

15. Consider the following worksheet.

	A	B	C	D
1		5	10	50
2			15	50
3			20	50
4				

Which of the following formula should be entered into the cell D1 to obtain the result in cell range D1:D3?

(1) B1 * C1 (2) B1 * C1 (3) B1 * C1 (4) B1 * C1

16. Which of the following is an absolute cell reference in a spreadsheet software?

(1) !A!2 (2) A2 (3) #A#2 (4) A2

17. The arrangement of elements such as Title, Subtitle, text, pictures, tables etc. in electronic presentation software is called.

(1) Layout (2) Transition (3) Design (4) Animation

18. Special effects used to introduce slides in a presentation are called

(1) Effects (2) Animations (3) Transitions (4) Template

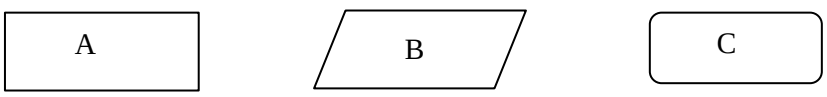
19. Database management systems are intended to.

(1) Eliminate data redundancy
(2) Establish relationship among records in different files
(3) Maintain data integrity
(4) All of the above

20. ……is a field or collection of fields in one table that uniquely identifies a row of another table.

(1) Primary key (2) Foreign key
(3) Alternate key (4) Candidate key

21. Consider the following symbols used in a flow chart.



A,B, and C are respectively.

(1) Process, Input, Start (2) Process, Start, Input
(3) Data flow, End, Output (4) End, Process, Input

22. What is the output of **3 ^ 2 + 4 * 2** in a computer program?

(1) 17 (2) 15 (3) 74 (4) 16

23. Consider the followings.

A – Selection B – Sequence C – Iteration

Which of the above is/are called control structure(s) in programming?

(1) A, B only (2) B, C only (3) A, C only (4) A, B, C all

24. Which of the following group contains only arithmetic operators?

(1) +, >, * (2) +, /, ^ (3) /, mod, < (4) &, >, -

25. Consider the following pseudo code.

```
j = 1
Do While j < 4
   Print (j)
   j = j*j+1
End While
```

Which of the following is the output of this pseudo code?

(1) 1 2 3 4 (2) 1 (3) 1 2 (4) 3 4

26. The first step in the systems development life cycle (SDLC) is.

(1) Analysis (2) Design

(3) Problem identification (4) Deployment

27. Which one of the following is not considered as a fact finding technique in a software development?

(1) Testing (2) Interview (3) Observation (4) Questionnaire

28. Respiratory system of a human body is.

(1) Natural and open (2) Artificial and open

(3) Natural and closed (4) Artificial and closed

29. Which of the following best describes the parallel implementation used in SDLC?

(1) Operation of the current system is stopped and the new system is implemented

(2) The new system is implemented with the current system at the same time for a period

(3) The new system is implemented step by step

(4) One part of the system is implemented to test feasibility

30. Which of the following can be used to display web pages in the Internet?

(1) IP address (2) Domain name

(3) Web browser (4) URL

31. Domain Name Server (DNS).

(1) Is an e-mail server (2) Starts World Wide Web

(3) Is another name for IP address (4) Maps domain name into IP address

32. Consider the followings.

A – Using of hyperlink B – Inserting images

C – Using of audio/video

Which of the above is/are the features of a web authoring tool?

(1) A only (2) B only (3) A,B only (4) A,B,C all

33. Which of the following is displayed as a heading in HTML?

(1) <p> (2)
 (3) <h1> (4) <hr>

34. Consider the following about HTML.

A - <pre> defines preformatted text B - <table> defines a table

C - <caption> defines a table caption

Which of the above is/are correct?

(1) A only (2) B only (3) B,C only (4) A,B,C all

35. Which of the following can be used to insert an image into a web page?

(1)

(2)

(3) <a image="bird.jpg" alt=”parrot” width="104" height="142" />

(3)

36. Consider the following HTML code segment.

```
<ul>
    <li> Coffee </li>
    <li> Tea
        <ul>
            <li> Black Tea </li>
            <li> Green Tea </li>
        </ul>
    </li>
    <li> Milk </li>
</ul>
```

The output of the above HTML code segment would be.

(1)

- Coffee
- Tea
    - Black tea
    - Green tea
- Milk

(2)

- Coffee
- Tea
    - Black tea
    - Green tea
- Milk

(3)

- Coffee
- Tea
    - Black tea
    - Green tea
- Milk

(4)

- Coffee
- Tea
    i. Black tea
    ii. Green tea
- Milk

37. Consider the following.

A – A hospital reveals clinical history of a patient without the consent of that patient

B – A student using proprietary software without having license

C – A person stealing another person's credit card number

Which of the above can be considered as illegal or unethical?

(1) A only (2) A,B only (3) B,C only (4) A,B,C all

38. …….. is a system that prevents unauthorized use and access of computer through the Internet.

(1) Anti-virus (2) Firewall

(3) Data backup (4) Virus

.

39. A destructive program that masquerades as a useful application is called.

(1) Virus (2) Worms

(3) Trojan (4) Anti-virus

40. Which one of the following can be considered as a physical security for computer system?

(1) Password (2) Locked door

(3) Backup (4) Firewall

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தகவல் தொடர்பாடல் தொழினுட்பவியல் II
Information & Communication Technology

இரண்டுமணித்தியாலங்கள்
Two Hours

- Answer **first** question and, **four** other questions only.
- First question carries 20 marks and each of the other questions carries 10 marks.

01.

i) Write down two pointing devices.

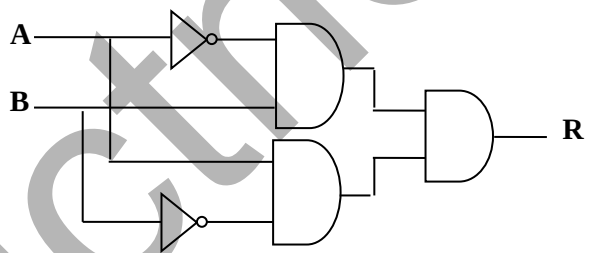
ii) Covert $AB9_{16}$ into binary equivalent.

iii) Table 1 contains generations of programming languages and Table 2 contains the details related to the contents of Table 1. Match pairs by drawing lines.

Table 1	*Table 2*
1GL	Assembly code
2GL	Natural Language
3GL	BASIC Language
4GL	Machine code

iv) Write down two ways that can be used to identify a host in the Internet.

v) Write down the output R of the following logic circuit if A=1, B = 0 and A = 1, B = 1 each separately.



vi) Consider the following paragraph.

In graphic animation software, a ……(A)…… can be considered as a place where you put all your elements or objects to appear on the screen for animation. The ……(B)…… Organizes and controls a document's content over time in layers and frames. The ……(C)……. is the colour of the outline of an object. The ……(D)…is the colour that fills the inside area of closed objects such as a rectangle.

Fill in the blanks by using the following terms appropriately.

[Fill Colour, Stroke Colour, Time Line, Stage, Frames, Layers]

vii) Write down briefly the main purpose of having software testing during software development.

viii) The following pseudo code is used to obtain the sum of ***even numbers*** ranging from 1 to 10. Fill in the blanks.

```
Begin
        Total = 2
        For count = …….to ……
            If (count is even)  Then
                Total = ……
            End If
        Next count
        Display ……
End
```

ix) Write down the role of a web server in a web development.

x) Consider the following HTML code.

```
<……..>
<head>
<title> The sample web page <……>
</head>
<body>
<……..> Welcome </h1>
<…….>
</html>
```

Copy this code in your answer sheet and fill in the blanks appropriately.

02. A school launches a web-based library information system. Each member (student) of this library is allowed to access web site through separate login account given by school.

(i) List two advantages, students would get by using of this web site.

(ii) List two advantages, teacher-in-charge of this library would get by using of this web site.

(iii) Write down three essential items of data stored by the library staff when student obtains membership.

(iv) Write down briefly the steps needed to publish this web-based information system for students' access.

03. The following part of a worksheet of a spreadsheet is extracted from a popular book shop in Sri Lanka. Particulars of books sold in first six months of 2013 are given below.

	A	B	C	D	E	F	G	H
1		**Books Sold in first six months - 2013**						
2	**Category**	**January**	**February**	**March**	**April**	**May**	**June**	**Total**
3	Computer	78	67	87	45	67	34	
4	Physics	89	56	76	67	45	87	
5	Mathematics	102	78	98	34	87	67	
6	Biology	45	34	100	54	99	23	
7								
8	**Maximum**							
9					***Total number of books sold in 6 months***			

(i) Write down a suitable function in cell H3 to represent Total books sold in computer category.

(ii) Write down a suitable function in cell B8 to find out Maximum Books sold in the month of January.

(iii) Write down a formula in cell H9 to represent Total number of books sold in 6 months.

(iv) Give two appropriate chart types to compare the sales in the months of January and February.

(v) Give a chart type that is most suitable to represent books sold in percentages of each category in the month of January.

04. Consider the following three data tables which are used to store details of students, and subjects they sat for an examination. The result also has to be stored in this digital database. One student can sit for more than one subject and a subject is being taken by more than one student.

Students

StudentID	Name
101	Vimal
102	Tharsa

Subjects

SubjectID	SubjectName
ICT01	ICT
Phy02	Physics

Results

StudentID	SubjectID	Results
101	ICT01	A
101	Phy02	B
102	ICT01	B

(i) What is primary key? Explain the answer with the help of Students and Subjects tables.

(ii) What is foreign key? Give examples using given tables above.

(iii) If the field "**Results"** is added with **Students table** or **Subjects table**, what would be the problem?

(iv) If these three tables are combined into one table, briefly explain the major disadvantage.

05. Nimal purchased a computer and installed operating system and office package by using his friend's software writing in compact disc which are purchased by his friend for his usage.

(i) Is Nimal's activity right or not? Give reasons.

(ii) Nimal is continuously using computer. List two health related issues that Nimal would get by using computer for a longer period.

(iii) Write down two precautions that can be followed by Nimal to reduce such health related problems.

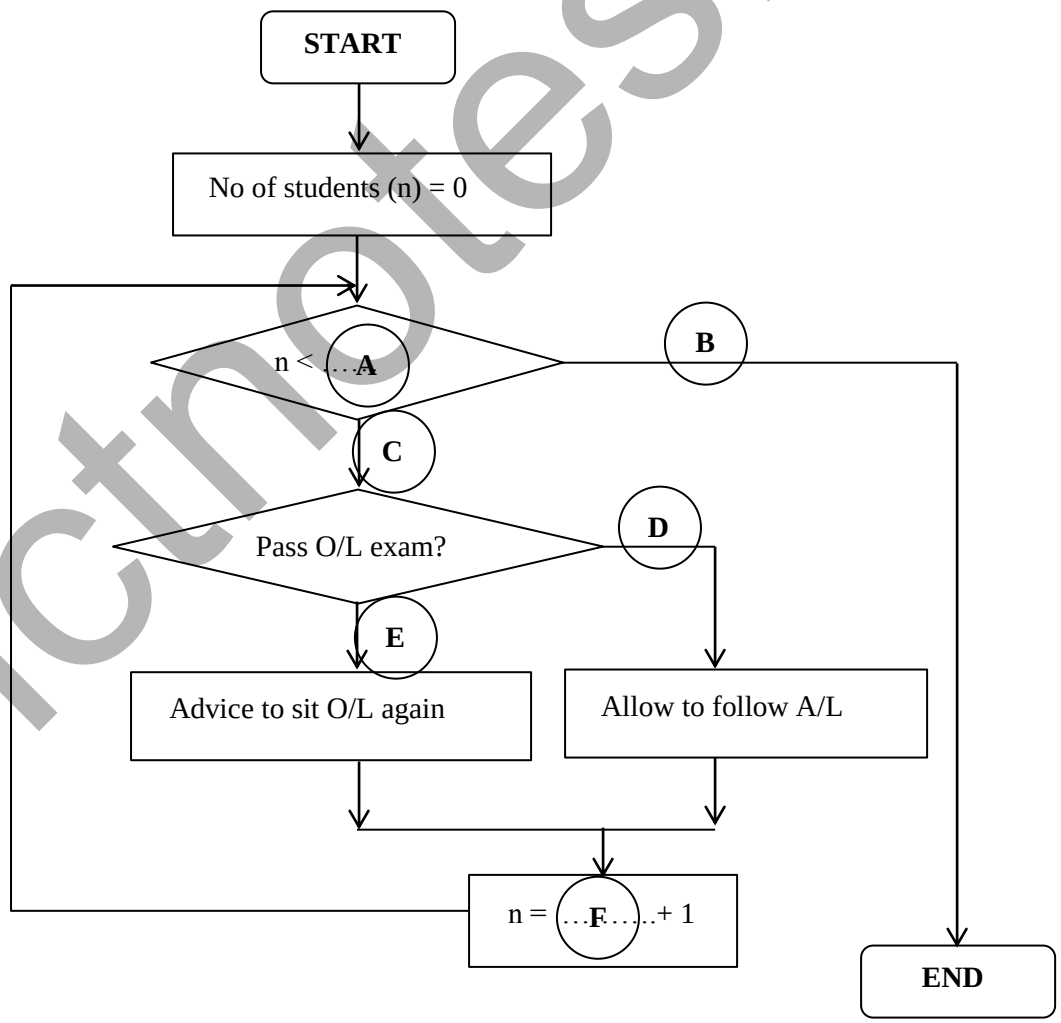
(iv) Nimal wishes to get the Internet connection. List devices and services which are necessary to get the Internet connection.

06.

(i) Construct pseudo code for the following scenario.

If it is raining, tell your friend to get an umbrella. Otherwise, say it is sunny.

(ii) In a school, principal checks the application forms of 100 students who applied to follow G.C.E. (A/L) in that school. Each student's application is checked one by one for qualification. If a student is passed G.C.E (O/L) examination, he/she is allowed to follow G.C.E. (A/L). Otherwise, he/she is advised to sit for G.C.E. (O/L) examination again.



(iii) Write a pseudo code for the logic in the flowchart given above in (ii).

07.

(i) Write down two suggestions that can be applied to reduce the digital divide in Sri Lanka.

(ii) Briefly describe the role of each of the following.

(a) Software developer

(b) Database administrator

(iii) List two security methods that may be used to protect e-mail messages from unauthorized access when sending it via the Internet.

(iv) How the printing industry could use ICT to increase productivity?

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