Model Examination Paper for G.C.E. (O/L) – 2020

MIS ICT COLLEGE, JAFFNA

Information & Communication Technology (ICT) - I

Answer all the questions   **Time: 3 hours**

1. EDVAC computer was designed by…………………

(1) Ada Lovelace   (2) Charles Babbage   (3) John Von Neumann   (4) Blaise Pascal

2. Consider the following statements.

   A – The maximum marks obtained by 25 students for ICT examination in a class

   B – Last four digits of a telephone number

Which of the following is correct?

(1) Statement A is data and statement B is information

(2) Statement A is information and statement B is data

(3) Both statements are data

(4) Both statements are information

3. Which of the following is not the component of a Central Processing Unit?
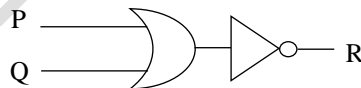
(1) Main memory   (2) L1 cache memory   (3) Register   (4) Arithmetic Logic Unit

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

(1) Harddisk   (2) Compact Disc   (3) Main memory   (4) Floppy disk

5. Which of the following statement is correct about the logic gate given below?

(1) If P = 0, Q = 0, the value of R is 1.

(2) If P = 0, Q = 1, the value of R is 1.

(3) If P = 1, Q = 0, the value of R is 1.

(4) If P = 1, Q = 1, the value of R is 1.

6. What would be the logic of the output in the given logic gate below?

(1) AND   (2) OR   (3) NOR   (4) NOT

7. If the character 'A' is represented as '1000001' in ASCII encoding system, what will the character 'D' be represented?

(1) 1000001   (2) 1000100   (3) 1000010   (4) 1000111

8. Which of the following is a valid BCD (Binary Coded Decimal) code?

(1) 1010_2 (2) 1100_2 (3) 1000_2 (4) 1111_2

9. Decimal equivalent of binary 10101 is.

(1) 21   (2) 28   (3) 19   (4) 45

10. The binary equivalent of hexadecimal number $A8_{16}$ is.

(1) 11101010_2 (2) 11001100_2 (3) 10101000_2 (4) 10100110_2

11. Consider the following statements about operating systems.

  A – Managing software installation   B – Managing hardware configuration

  C – Memory management

  Which of the above is/are correct?

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

12. Which of the following icons available in a word processing software can be used to apply the formatted text effect again into another text?

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

13. Consider the expression $(a+b)^n$ created in a word processing software. Which of the following feature should be used to type the character n?

(1) Subscript   (2) Superscript   (3) Hightlight   (4) Font face

14. Consider the following spreadsheet functions.

  A - =SUM(A1,A4)   B - =SUM(A1:A4)   C - +SUM(A1:A4,A5)

Which of the above is/are valid?

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

15. In a spreadsheet package, the rank in a certain cell range is to be calculated. Which of the following is correct form for it?

(1) =Rank (A$1:A$5)   (2) = Rank (A1, A1:A5)   (3) = Rank (A1, A$1:A$5)   (4) = Rank (A1:A5)

16. The cell C1 contains the formula = A1+B1.

	A	B	C
1	2	3	5
2	1	4	
3			

If the formula entered in cell C1 is copied to cell C2, what will be displayed in cell C2?

(1) 6   (2) 5   (3) 4   (4) 10

17. A teacher uses a presentation software in slide show mode and during the presentation she wants to draw the attention of the class towards her for a few seconds hiding the content of the current slide. Which key should she press?

(1) G   (2) F1   (3) F5   (4) W

18. " ……………………… view is used to control the look of entire presentation including colours, text, background, effects, and fonts ".

(1) Normal   (2) Slide sorter   (3) Slide master   (4) Slide design

19. Slide view used to see thumbnails of all the slides to easily rearrange them in an electronic presentation is.

(1) Normal view   (2) Slide sorter view   (3) Slide master view   (4) Slide view design

Consider the following database table to answer questions 20, 21 and 22. The table contains data about items in a shop.

ItemID	ItemName	Quantity	UnitPrice
I001	Pencil	200	10.00
I002	Pen	350	20.00
I003	Eraser	100	10.00

20. Which of the following fields is most suitable as the primary key?
(1) ItemID   (2) ItemName   (3) Quantity   (4) UnitPrice

21. How many records are there in the table?
(1) 4   (2) 3   (3) 12   (4) 1

22. What is the most suitable data type for 'Quantity '?
(1) Text   (2) Boolean   (3) Number   (4) Currency

23. Consider the following stages about System Development Life Cycle (SDLC).
    A – Coding   B – System testing
    C – System analysis   D – System maintenance
    The correct order of the above stages is.
(1) A,B,C,D   (2) A,C,D,B   (3) B,A,D,C   (4) C,A,B,D

24. Which of the following may be considered as the system deployment techniques in System Development
    Life Cycle (SDLC)?
    A – Direct
    B – Parallel
    C – Gathering data
    D – Pilot
(1) A,B only   (2) B,C only   (3) A,C only   (4) A,B,D only

25. Consider the following statements.
    A – Fibre optic cables are examples for guided media
    B – Co-axial cables are examples for unguided media
    C – Microwave transmission is generally used for a longer distance communication
   Which of the above is/are correct?
(1) A only   (2) B only   (3) C only   (4) A, C only

26. Which of the followings is the correct precedence of operators of 2 - 4*1 + 5/2 in the evaluation?
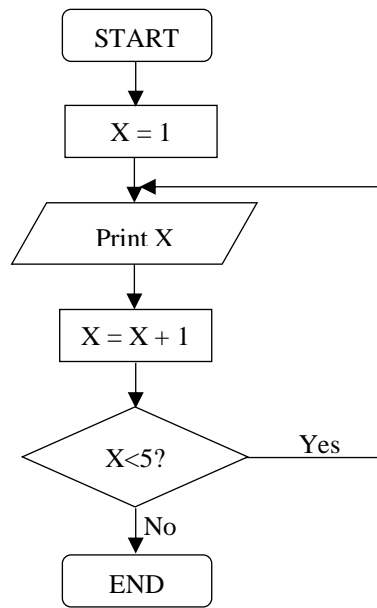(1) -, *, +, /   (2) /, *,-, +   (3) +, -, *, /   (4) *, / , -, +

27. What is the result of the following Pseudo code?

```
A=2
WHILE A< 8
    A=A+2
END WHILE
PRINT A
```
(1) 2   (2) 4   (3) 6   (4) 8

28. Consider the following flowchart.

```
        ┌──────────┐
        │  START   │
        └──────────┘
             │
        ┌──────────┐
        │  X = 1   │
        └──────────┘
             │
             ▼  ◄──────────────┐
        ╱──────────╲           │
        ╲  Print X  ╱          │
         ╲────────╱            │
             │                 │
        ┌──────────┐           │
        │ X = X + 1│           │
        └──────────┘           │
             │                 │
          ╱──────╲    Yes      │
         ╱ X<5?   ╲────────────┘
          ╲──────╱
             │ No
        ┌──────────┐
        │   END    │
        └──────────┘
```

What are the control structures used in this flowchart?

(1) Sequence only   (2) Selection only

(3) Sequence and selection only   (4) Sequence, selection and iteration all

29. Which of following is a valid Pascal programming identifier?

(1) if   (2) a-b   (3) a_b   (4) #a

30. Which of the followings is/are the activities of a typical web content management system (CMS)?

   A – Creating web pages.

   B – Managing the contents of a web site.

   C – Creating a new Internet connection.

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

31. Which of the following HTML tag is used to display an image on a web page?

(1) h1   (2) br   (3) img   (4) hr

32. Consider the following HTML code segment.

   <OL type="i">
       <LI> Java </LI>
       <LI> Pascal </LI>
       <LI> Python </LI>
   </OL>

How would be rendered the above mentioned HTML Code on the web browser?

(1)	(2)	(3)	(4)
1. Java	i. Java	a. Java	A. Java
2. Pascal	ii. Pascal	b. Pascal	B. Pascal
3. Python	iii. Python	c. Python	C. Python

G.C.E. (O/L) ICT – 2020 Model Paper

33. Consider the following URL (Uniform Resource Locator).

   http://www.gov.lk

 Where, lk represents.

(1) Service   (2) Protocol   (3) Web page   (4) Top-level domain

34. Consider the following two figures created in a typical graphics editing software.

Figure 1   Figure 2

Which of the following tool may be used to create figure 2 drawn from figure 1?

(1) Text tool   (2) Paint bucket tool   (3) Sub selection tool   (4) Selection tool

35. Consider the following statements regarding the Internet and World Wide Web.

 A – Every computer in the Internet should have a unique address called IP address

 B – World Wide Web is an interlinked hypertext documents accessed via the Internet

 C – Internet and the World Wide Web are the same

Which of the above is/are correct?

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

36. Which of the following can be the features of a typical sound editing software?

 A – Video editing

 B – Animation

 C – Echoing

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

37. "………………………is the act of stealing another's creative work and displaying it as one's own".

(1) Plagiarism   (2) Piracy   (3) Privacy   (4) Copyright

38. "………………………is a type of malware that can be installed on computers, and which collects small

 pieces of information about users without their knowledge".

(1) Virus   (2) Worms   (3) Trojan   (4) Spyware

39. Arun plans to protect files in his computer from unauthorized persons. Which of the following physical

 security system may be used for it?

(1) Data backup   (2) Password   (3) Encryption   (4) Locking of computer room

40. Consider the following statements about firewall.

 A – It may be a hardware

 B – It may be a software

 C – It is used for controlling unauthorized data access in the Internet

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

∗∗∗∗

Answer five questions only, including first question and four other questions
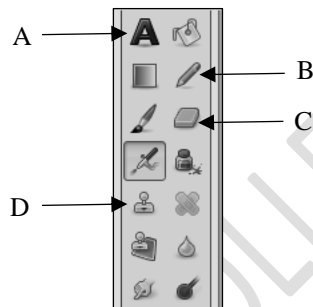
1.

  (i)   Convert the decimal number 108_{10} into hexadecimal equivalent. Show your method.

 (ii)   Write down two examples for computer network topology.

(iii)   Consider the following incomplete sentences.

   (a)   …………**A**……..tag is used to insert a line break.

   (b)   …………**B**……..tag is used to insert line space before and after a paragraph.

   (c)   …………**C**……..tag is used to create a hyperlink.

   (d)   …………**D**……..tag is used to make most important heading.

   Fill the blanks in using the items listed below.

   [hr, img, a, br, p, h1, font, h6]

(iv)   The following is a tool box extracted from a typical image editing software. Write down the labels marked by A,B,C and D and briefly explain them.

 (v)   Consider the following table.

Column 1	Column 2
A	The web content management system
B	IP address
C	Translates URL into corresponding IP address
D	e-mail client software

Select appropriate words form the list given below to write for column 1 according to the contents given in column 2.

[123.5.4.10, ict@gmail.com, Joomla, myway.html, Mozilla thunderbird, DNS server]

(vi)   Write down whether the following sentences is true or false.

   (a)   Cache memory is a volatile memory.

   (b)   The contents of the main memory is directly accessible by CPU.

   (c)   Online purchasing is always guaranteed for money security.

   (d)   In computer programming, variables are used to store data.

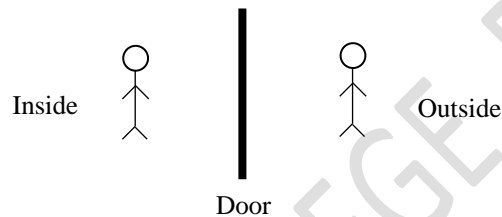(vii) The following incomplete Pseudo code is written to display first ten triangular numbers (1,3,6,10,............,55).

Begin

        Sum = 0

        Num = 1

        Do While Num <=…A…..

                Sum = Sum+…B…

                Num = …C….+ 1

                Print ….D……

        End While

End

Fill in the blanks for the labels A,B,C and D.

(viii) Write down two advantages of e-channelling system in which a patient could benefit from it.

(ix) Write down two advantages of an e-mail system comparing with traditional postal system.

(x) An electronic automatic door fixed in a building works with the help of two sensors. Door is opened automatically when persons, from inside or outside, come nearest to that door. The illustration is given below.

Inside   Outside

Door

The door logic works as follows. Inside sensor (I) and Outside sensor (O)

Boolean values:

Sensing persons = '1' and Not sensing persons = '0'

Door open = '1' and Door closed = '0' (X)

   (a) Construct truth table

   (b) What is the single logic gate for this logic?

2. The following spreadsheet segment shows the analysis of students sat for G.C.E. (O/L) and G.C.E. (A/L) for five years (Source: http://www.statistics.gov.lk).

	A	B	C	D	E	F	G	H
1								
2		G.C.E (O/L) and G.C.E (A/L) Examination - Analysis						
3								
4		2011	2012	2013	2014	2015	Total	Maximum
5	School Candidates sat for the GCE(O/L)	348,143	352,475	287,040	277,414	290,929		
6	Private Candidates Sat for the GCE(O/L)	95,155	98,564	21,014	21,135	23,706		
7	All Candidates Sat for the GCE(O/L)	443,298	451,039	308,054	298,549	314,635		
8	School Candidates sat for the GCE(A/L)	203,928	196,954	209,906	207,304	210,340		
9	Prrivate Candidates sat for the GCE(A/L)	35,847	36,680	31,723	40,072	44,851		
10	All Candidates Sat for the GCE(A/L)	239,775	233,634	241,629	247,376	255,191		
11								
12								

Use the above spreadsheet segment to answer the following questions:

(i) Write down the **formula with a single function** that has to be entered in cell G5 to display the total number of school candidate sat for GCE (OL) from the year 2011 to 2015.

(ii) Write down the **formula with a single function** that has to be entered in cell H5 to display the maximum number of school candidate sat for GCE (OL) in the range of year 2011 to 2015.

(iii) Using cell references F7 and F10, write down the formula, without using function, to calculate difference between total number of candidates sat for GCE (OL) and GCE (AL) examination in the year 2015.

(iv) Write down two charts that are used to compare total number of candidates sat for GCE (OL) and GCE (AL) from the year 2011 to 2015.

3. Consider the following two data tables in a relational database. These are extracted from a school management system in a school and Student table contains students' details and House table contains House details.

Student

AdmissionNumber	StudentName	HouseID
S01	Sahana	H01
S02	Sampavi	H02
S03	Vijith	H01
S04	Janakan	H03

House

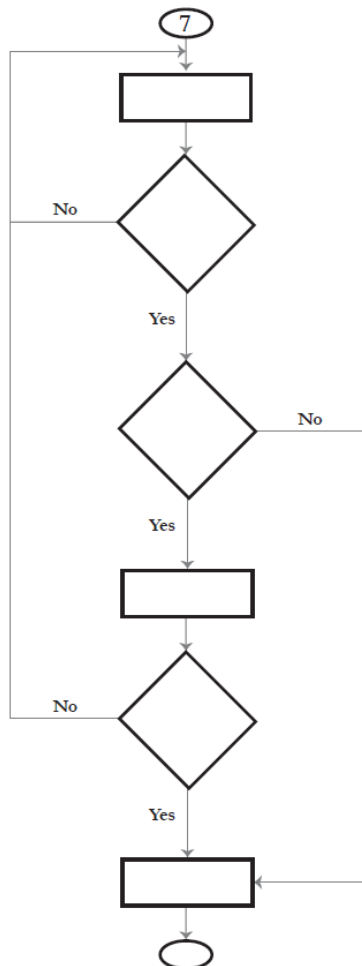| HouseID	HouseName
H01	Yellow
H02	Green
H03	White
H04	Red

A student belongs to a house and a house may have more than one students.

(i) What is primary key? Give example for primary key with corresponding table name.

(ii) What is foreign key? Give example for foreign key with corresponding table name.

(iii) By referring the table 'Student' or in other ways, write down what type of relationship used between tables.

(iv) Write down suitable data types for the fields of 'Student' table.

4.

(i) Aruna is a software engineer. His working hours is 9.00 am to 9.00 pm weekdays. He continuously sits on chair and works. Write down three possible health related problems faced by Aruna.

(ii) Write down three precautionary actions that Arunal may follow to reduce these health related problems.

(iii) What is Telemedicine?

(iv) Write down limitations of Telemedicine.

5.

(i) Write down the stages of the System Development Life Cycle (SDLC) for the following activities.
   (a) Writing computer programs.
   (b) Modifying the newly developed and deployed system.
   (c) Checking programs written whether they are fit for user.
   (d) Gathering data related to the existing system.
   (e) Preparing user interfaces.
   (f) Studying about the current system.

(ii) Write down two feasibility studies that should be concerned when developing a software.

(iii) Write down any two testing methods to check the newly developed software.

(iv) Consider the following URL.
   http://www.ugc.ac.lk/2015/admissions/file1.pdf
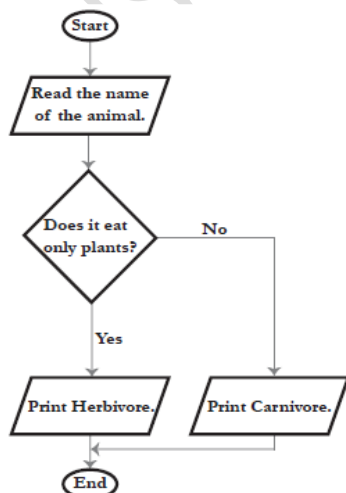   Write down domain name, protocol and service.

6.

(i) The following empty flowchart gives the steps to be followed while seeking admission to new school. The phrases to be filled in the boxes are also given. Complete the flowchart by filling in the number of the corresponding phrase, inside each box.

For example: the number corresponding to the first box in the flowchart is 7.

1. Search for a school
2. Prepare for the admission test and write the test.
3. Did you pass the exam?
4. Submit necessary documents and get admission.
5. End
6. Are seats available?
7. Start
8. Is there an admission test?

(ii) The following flowchart classifies animals as herbivore or carnivore. Write down the corresponding Pseudo code for the flowchart given.

G.C.E. (O/L) ICT – 2020 Model Paper

7.

(i) Fill in the blanks using the list given below.

    (a) ……………..is an e-commerce model.

    (b) A collection of web pages is called………………

    (c) …………………. is a numerical based computer identifier.

    (d) ………………………….is a web authoring tool.

    (e) A website which is maintained without any change over a period of time, is called ……………......

    (f) ……………..is a sound editing tool.

    [e-mail address, B2C, Kompozer, Static website, Audacity, Domain name, Website, IP address]

(ii) Consider the following web page and its HTML coding. Fill in the blanks using the following list given.

    [ul, h6, a, title, hr, h1, ol, br, caption, img, src]


```
<html>
<head>
 ❶ > Web Page for Linux  ❶ >
</head>
<body>
 ❷ > Linux Distributions  ❷ >

 ❸ >
        <li> Redhat </li>
        <li> Debian </li>
        <li> Fedora </li>

 ❸ >
<p> ❹   src="tux.jpg" alt="tux" width="200"
height="200"> <p>
Richard Stallman founded FOSS initiative and in 1991,
 ❺ >
Linus Trovalds from University of Helsinki, Pinland, <br>
created Linux operating system  GNU project was merged
<br>
with Linux later. <br>
<table border="1" width="30%">
 ❻  > <p> <b> Comparisons </b> </p> < ❻  >
 <tr>
   <th> Proprietary Software </th>
   <th> Open Software </th>
 </tr>
 <tr>
   <td> Expensive </td>
   <td> Cost effective </td>
 </tr>
 <tr>
   <td> Restricted </td>
   <td> Freedom </td>
 </tr>
</table>
 <p> For more lessons: < ❼  href
="http://www.tux.net/lessons/1.pdf " >
http://www.tux.net/lessons/1.pdf < ❼  >   </p>
</body>
</html>
```

****