G.C.E. ORDINARY LEVEL

STUDENT SEMINAR SERIES - 2017

INFORMATION & COMMUNICATION TECHNOLOGY

QUESTION PAPER – II

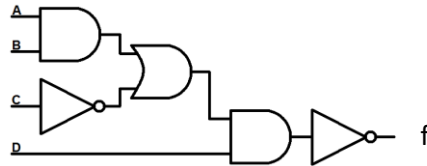**Ministry of Education**
E-learning and Nenasa Educational Program Unit
G.C.E. Ordinary Level Examination – Support Seminars - 2017

80 - Information & Communication Technology

Grade 11	English Medium	Time - 2 hours

- *Answer **five (05)** questions only, selecting the **first question** and **four** others.*
- *First question carries **20 marks** and each of the other questions carries **10 marks**.*

01.

1. Write the octal value of $2F1_{16}$.
2. Mention 2 differences between lossy compression and lossless compression.
3. Write 2 media resources which can be used by a web developer for a web page.
4.

   a. Write the Boolean expression of the above logic circuit.
   b. When all inputs are 0 what will be the output of the above circuit?

5. Match column A with column B and write matching letters with the correct number.

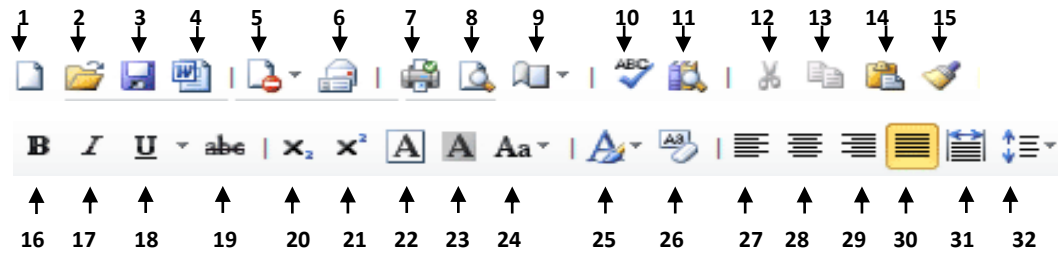|	Column A		Column B
A	Domain name	1	Yahoo
B	Search engine	2	www.e-thaksalawa.moe.gov.lk
C	Stage of web development process	3	Bluegriffon
D	Web authoring tool	4	Update and manage

6. Nowadays people are using online applications without installing required software to their devices and also, they are accessing their personal files which are stored at an online file sharing space.
   a. What can be the concept that they use according to the above scenario?
   b. Mention 2 limitations that they face when they are using it.

7. Read and put (✓) or (✗) sign in front of the statement.
   a. Bar code reader can recognize characters. ( )
   b. Line printer is slower than dot matrix and it produces quality printouts. ( )
   c. Blue ray→ DVD →CD represents the descending order of storage devices according to the capacity. ( )
   d. Serial/ USB port can be used to connect the external modem to the computer. ( )

8. Set of tools in a word processing software is given below. Write the number(s) of the appropriate tool(s) in front of the relevant task.

a. To open a new word document -
b. To correct errors in spellings -
c. To copy existing formatting styles to another text–
d. To capitalize all simple letters in a document–

9. A student needs to check the recently issued GCE O/L results online using his PC. First, he has to enter his index number in the space provided to check his result. If the given index number is valid, system will display the result for the given index number. He further needs to get a printout of the result sheet for an interview to select for GCE Advance level class of another school.
Read the above scenario and clearly mention the examples for input, process, and output

10. ICT is used for various fields in different ways. Select the correct terminology from given words to fill in the blanks given below.
a. Health field uses ……………….. to see parts of the body in different dimensions.
b. ……………. are used to get data to decide on the crop cultivation & harvesting times.
c. In car production, ……………….. can be used to get an efficient & accurate output.
d. ……………………. Which are located in the sea can be used by sea travelers to get information they need.
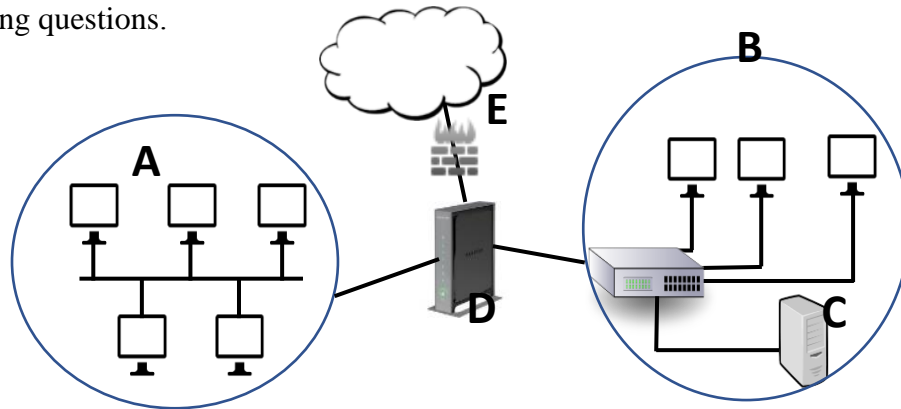
   (Sensors / 3D image / Meteorological Devices/ Robots / RFID)

02.
A. Using Information & communication technology brings us a smooth life. But currently we can see many issues associated with the use of ICT in the society.
   i. Plagiarism is a major issue which is related to values of the society. But there are some accepted ways to prevent from this issue. Write 2 ways that you can use to prevent from the above mentioned social issue.
   ii. Write 2 security mechanisms which can be applied for logical security of computer data.

B. Ergonomics is very important concept nowadays which is beneficial for an organization.
   i. Briefly explain two benefits of having ergonomics in an organization.
   ii. Which problems will occur due to an incorrect posture of a computer user?

C. Write an advantage and a disadvantage of digital games and cartoon films for school children with respect to using ICT for entertainment.
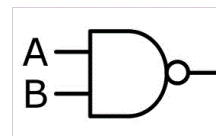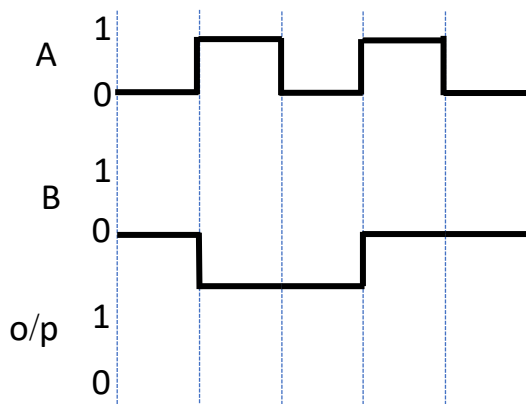
03.

    A. Millennium traders are going to computerize their organization & the diagram of the suggested network for the proposed system is given below. Study the diagram & answer the following questions.

      i. A and B are 2 LANs in the above organization. Mention the topologies used in those two LANs & write a disadvantage of using that topology.

     ii. Name suitable devices for C, D, E and mention one usage of each device.

   iii. Write an example for a suitable communication media for the above network A.

    B. Following timing diagram represents the input values of the given logic gate.

Draw the output of the gate in the timing diagram.

04. The salary sheet of Perera and brothers company is given below. The company is giving an allowance for every one and the allowance will be mentioned in cell B13. And Overtime pay will be calculated according to the number of overtime hours they worked. If they have worked more than 40 hours, an overtime rate of Rs 500.00 per hour will be paid for additional hours. Loan interest and EPF rate are also given.

	B	C	D	E	F	G	H	I	J	K	L
1											
2					**Perera & brothers Company**						
3					**Salary System**						
4	Emp no	Emp name	Grade	Loan	No of hours	Basic salary	Allowance	Loan interest	EPF	Deductions	Total salary
5	22211	Binushi	III		46	35,000	5000.00	0.00	2,450.00	2,450.00	37,550.00
6	22212	Vishen	III	100,000	50	40,000	5000.00	11,000.00	2,800.00	13,800.00	31,200.00
7	22232	Mithaara	II		40	45,000	5000.00	0.00	3,150.00	3,150.00	46,850.00
8	22343	Kaminda	II	150,000	60	50,000	5000.00	16,500.00	3,500.00	20,000.00	35,000.00
9	22234	Janul	I		78	60,000	5000.00	0.00	4,200.00	4,200.00	60,800.00
10											
11											
12	Allowance details					Loan Interest			EPF rate		
13	5,000					11			7		

1. Write the cell reference required for H5 to get the allowance. This should be able to use to get the others' allowance also.
2. Write the formula for I5 to calculate the loan interest for employees who has obtained the loan.
3. What is the suitable chart type to represent each one's salary.
4. Which cell formatting have been used to display "Perera & Brothers company" header as it is?
5. Mention 2 reasons for selecting spreadsheet software for the above task.
6. The values in G5:L9 cell range are required to format as separated rupees and cents values. Write the suitable numbering format for that cell range and Write the steps which should be followed to do that formatting.

05.
   A. Sarasavi library is a library which is serving facilities for university students. They face problems when they are handling each process manually. The library management asks you to develop an online system for the library to improve the efficiency of internal processes as well as the quality of the service for users of the library.

   i. Mention 3 ways that can be used to collect their needs.
   ii. Explain 2 advantages of having a computerized system for the administration of the library.
   iii. Mention 3 types of testing for finding bugs in this system while you are developing it.
   iv. "The library management needs to handle financial activities through the same system but their requirements are not clear. The waterfall method is being used for this development."
      a. Do you agree with this?
      b. If yes, why do you agree with that? If not, mention the reason & suggest a new method.
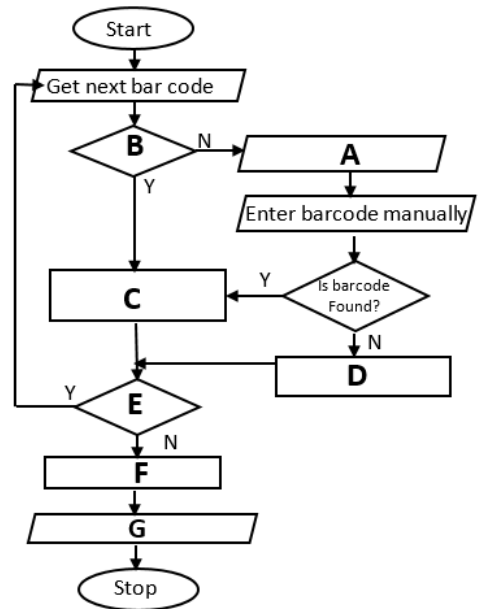
B. Your friend is going to do an online transaction using his credit card. Write two advises as precautions for security issues.

06.

A. The following flowchart is for supermarket cashier to read the bar code written on an item when product is on the cashier & it is to find the price, handle inventory & produce the bill.

Statements

1. Any more bar codes to read?

2. Is bar code found in the file?

3. Add to the bill

4. Display error message

5. Display the bill

6. reject the product

7. update the inventory file.

i. Statements are given and select the suitable statement from to match the letter in the flow chart.
Example - First one has done for you. A → 4

ii. Mention control structures that you can see in the above flow chart.

B. The following program is written to enter a value by the user and to print number range from 1 to that entered value. (Ex – User will enter 4. System will display 1 2 3 4)
The given program has errors. Correct them & re-write the correct program.

```
program numbers;
var
        x,num:integer;
begin
        writeln("enter a number");
        readln(num)
        x=0;
        while (x=<num) :
        begin
                print x;
                x:=x+1;
        end
end
```

07. Part of a database of an education institute is given below and it shows about lecturers, students and courses.

Student

Stno	Stname	Contact	City
St023	Divyani	0112343472	Colombo
St024	Gagani	0112345232	Kandy
St025	Buupa	0117323432	Colombo

Course

Course	Fee	Lec_id
Java	Rs. 20,000	L021
Python	Rs. 30,000	L023
Pascal	Rs. 15,000	L023

Student_Course

Stno	Course	Day	Time
St023	Python	Monday	8 am
St023	Java	Wednesday	10 am
St024	Pascal	Tuesday	10 am
St024	C++	Tuesday	2 pm
St025	Java	Friday	8 am

Lecturer

Lec_id	Lecname
L021	Mr.Ganesh
L023	Mrs. Perera
L041	Mr. Kosala

1. Why primary key of a relation is an important?
2. Show a composite primary key of this database.
3. Mention suitable data types for course fee, course day and course time.
4. Database administrator says "security of the database can be increased by applying security mechanisms for data". Briefly explain this by giving examples.
5. According to the above database, write the relationship type between following relations.
    a. Student - Courses
    b. Course - Lecturer
6. As earlier people used to have a flat table instead of having relational databases, data duplication was high. Write two disadvantages of having data duplication.