



**ST. LAWRENCE HIGH SCHOOL**  
**A Jesuit Christian Minority Institution**  
**Selection Test Examination- 2019**



**Sub: Computer Application**

**Class: 12 B, D**

**F.M.: 90**

**Duration: 3 Hours & 15 Minutes**

**Date: 20<sup>th</sup> November, 2019**

**SOLUTION**

**GROUP 'A'**

**(Multiple Choice Type Questions)**

**A. Choose the correct alternatives:**

**[1×21=21]**

- (i) In a star topology, UTP cable can be used up to a maximum length of:  
**Answer: (c) 100 m**
- (ii) A decimal to binary encoder circuit has how many input lines:  
**Answer: (c) 10**
- (iii) Correct HTML code for the largest heading is:  
**Answer: (d) <h1>**
- (iv) The logic gate represented by a triangle with a bubble at the trip is called a:  
**Answer: (c) NOT Gate**
- (v) The transmission mode which allow both communication devices to transmit and receive data simultaneously is:  
**Answer: (a) Full-duplex**
- (vi) Which media does not come under the guided media?  
**Answer: (c) Microwave**
- (vii) Which keyword is used to eliminate duplicate rows from the result of SELECT statement?  
**Answer: (c) DISTINCT**
- (viii) An example of a bounded medium is:  
**Answer: (d) All of the above**
- (ix) A \_\_\_\_\_ chart is used to compare values across categories.  
**Answer: (a) Column**
- (x) The slowest transmission speeds are those of:  
**Answer: (a) Twisted Pair Wire**
- (xi) LAN stands for:  
**Answer: (c) Local area network**

- (xii) The Internet is owned by:  
**Answer:** (d) None of the above
- (xiii) Choose the odd one out:  
**Answer:** (d) Cover page
- (xiv) Which one is not the language of Internet?  
**Answer:** (d) Cobol
- (xv) Which of the following is not a method of accessing the web:  
**Answer:** (d) CPU
- (xvi) Which of the following is related to Internet security?  
**Answer:** (c) Firewall
- (xvii) Mechanism developed to enforce users to enter data in required format is:  
**Answer:** (c) Input mask
- (xviii) Large collections of files are called:  
**Answer:** (c) Database
- (xix) What is relational database?  
**Answer:** (a) A place to store relational information
- (xx) The Select and Project are:  
**Answer:** (a) Unary operation
- (xxi) A \_\_\_\_\_ database does not use pointers or physical links, but instead finds related records by examining the contents of fields  
**Answer:** (c) Relational

#### GROUP 'B'

**B. Answer the following questions (Alternatives are to be noted): [1×14=14]**

- (i) What is a token and why it is used?

**Answer:** Token ring is mainly used in Ring topology. In token ring data is never send to two computers at a same time in order to avoid clashing.

OR

What is Frequency Modulation?

**Answer:** In FDM different frequencies are used to carry different signals generated by each transmitting device.

- (ii) Define DBMS.

**Answer:** In a DBMS, information related to the structure of a database is stored in a place called the Data Dictionary.

- (iii) Write down the full form of FDDI.

**Answer:** Fibre Distributed Data Interface.

(iv) What is 'functional dependency'?

**Answer:**  $(X_1, X_2, \dots, X_N) \rightarrow (Y_1, Y_2, \dots, Y_M)$

OR

Define 2NF.

**Answer:** A relation is said to be in 2NF, if it is in 1NF and all non key attributes in the relation are fully functionally dependent on the primary key of the relation.

(v) Write down the truth table XNOR gate.

A	B	F
0	0	1
0	1	0
1	0	0
1	1	1

(vi) Define Bandwidth.

**Answer:** The Bandwidth of a channel indicates the range of frequencies that a communication channel can handle with reasonable reliability.

(vii) What do you mean by the term 'Tuple' in DBMS?

**Answer:** Each row of the table in relational model is called a tuple.

(viii) What is a LAN?

**Answer:** Local Area Network

(ix) ASCII stands for **American Standard Code For Information Interchange**.

(x) What is Ordered List in HTML?

**Answer:** We can use bullets and numbering in an HTML document using the <ol> tag.

(xi) Define Primary Key.

**Answer:** A minimal super key, selected from the set of candidate keys as per user convenience to identify a tuple uniquely in a relation is called a primary key.

(xii) What is the full form of CSMA/CD?

**Answer:** Carrier Sense Multiple Access with Collision Detection.

(xiii) Define Encoder.

**Answer:** An Encoder is used to encode data in some other base like decimal, octal etc. to binary.

(xiv) Mention the role of a DBA.

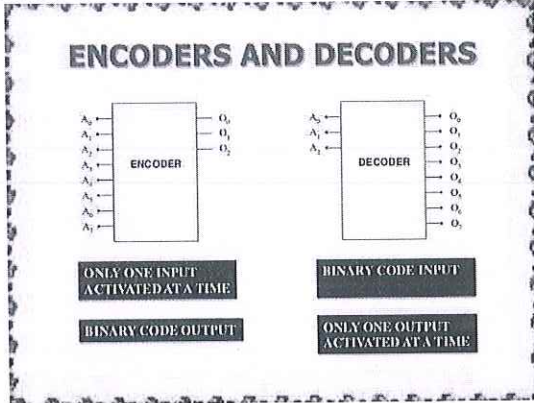
**Answer:** Schema definition, Storage structure & Access method definition, Routine maintenance, Schema modification, Data Access Authorization.

**GROUP 'C'**

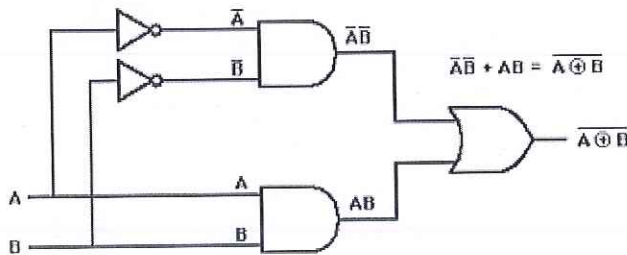
**C. Answer the following questions (Alternatives are to be noted):  
Maximum Word Limits: [4 marks: 80 & 5 marks: 100]**

**[7×5=35]**

**(i)(a)** Differentiate between Encoder and Decoder.



**(b)** Draw the circuit diagram of XNOR Gate.



**(c)** What do you mean by Multiplexer?

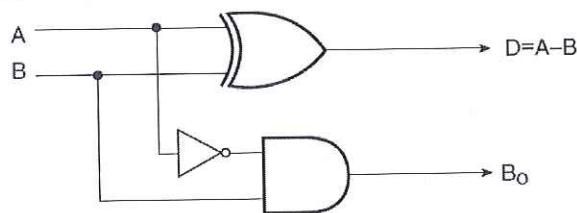
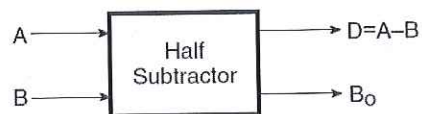
Hints: Many to one output.

OR

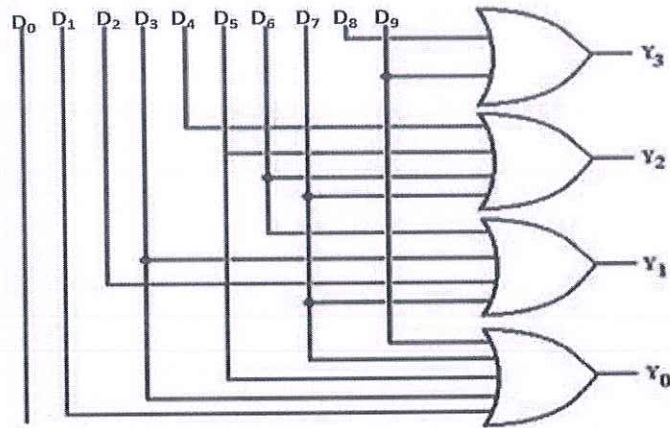
**(a)** Derive the expression of Difference and Borrow of a Half Subtractor Circuit.

Also show the circuit diagram.

A	B	D	B <sub>0</sub>
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0



(b) Establish a Decimal to Binary encoder.



(ii) (a) What is a Workbook?

**Hints:** In Microsoft **Excel**, a **workbook** is a collection of one or more spreadsheets, also called worksheets, in a single **file**.

(b) What is Macro?

**Hints:** If you have tasks in Microsoft **Excel** that you do repeatedly, you can record a **macro** to automate those tasks. A **macro** is an action or a set of actions that you can run as many times as you want. When you create a **macro**, you are recording your mouse clicks and keystrokes.

(c) How can you create a pie chart in Ms-Excel?

1. In your spreadsheet, select the data to use for your **pie chart**. ...
2. Click **Insert > Insert Pie or Doughnut Chart**, and then pick the **chart** you want.
3. Click the **chart** and then click the icons next to the **chart** to add finishing touches.

OR

(a) How can you apply a border to a cell in Excel?

1. Select the **cell** or range of **cells** that you want bordered.
2. Select the **Cells** option from the Format menu. You will see the Format **Cells** dialog box.
3. Click on the **Border** tab. ...
4. In the **Border** section of the dialog box, select where you want the **border** applied. ...
5. Select a line type from the Style area.
6. Click on OK.

(b) Mention three advantages of using Ms-Excel.

Build great charts. **Excel** allows business users to unlock the potential of their data, by **using** formulas across a grid of cells. ...  
 Use conditional formatting. ...  
 Help identify trends. ...  
 Bring data together. ...  
 Online access.

(c) What is the use of Wrap text option in Excel?

In a worksheet, select the cells that you want to format.  
 On the Home tab, in the Alignment group, click **Wrap Text**. Notes: Data in the cell **wraps** to fit the column width, so if you change the column width, data **wrapping** adjusts automatically.

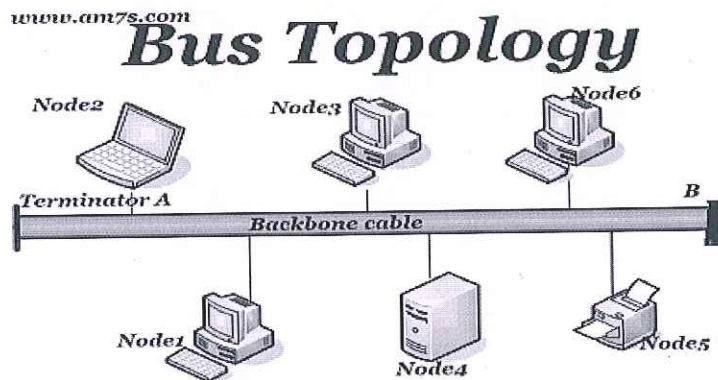
(iii) (a) Discuss briefly the TCP/IP Model.

TCP/IP model	OSI model
Application	Application
	Presentation
	Session
Transport	Transport
Internet	Network
Link	Data Link
	Physical

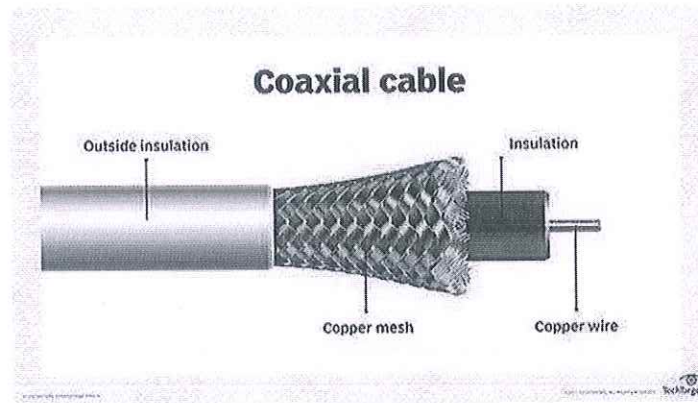
(b) Write a short note on 'Gateway'.

A **gateway** is a network node used in telecommunications that connects two networks with different transmission protocols together. **Gateways** serve as an entry and exit point for a network as all data must pass through or communicate with the **gateway** prior to being routed.

(Or) Explain Bus topology with proper diagram.



(b) Write a short note on Coaxial cable.



(iv) (a) State the purpose of using Form in Ms-Access.

A **form in Access** is a database object that you can **use** to create a user interface for a database application. A "bound" **form** is one that is directly connected to a data source such as a table or query, and can be used to enter, edit, or display data **from** that data source.

(b) Write the steps to create a Report in Access using Report Wizard option.

OR

(a) Write the steps to create a Form in Access?

Click the **Create** tab.

In the **Reports** group, click the **Report Wizard** icon. ...

Click in the Tables/Queries list box and choose the table or query that contains the data you want to print in a **report**.

Click a field in the Available Fields box and then click the > button.

(b) What is the use of AutoNumber data type in Access?

**AutoNumber** is a type of data **used** in **Microsoft Access** tables to generate an automatically incremented numeric counter. It may be **used** to create an identity column which uniquely identifies each record of a table. Only one **AutoNumber** is allowed in each table.

(c) What is the use of report in Access?

A **report** is an object in **Microsoft Access** that is used to display and print your data in an organized manner. The Navigation Pane is where you can find all of the saved **reports** in the database. To view your **reports**, make sure that all objects are visible in the Navigation Pane.

(v) Consider the following tables:

**EMPLOYEE (Empname, Age, Street, City)**  
**WORKS (Empname, Companyname, Salary)**  
**COMPANY (Companyname, City)**

- (i) Find the names of employees who work for "XYZ" company and whose ages are greater than 30.
- (ii) Change the city of the "ABC" company to "Kolkata"
- (iii) Delete the Street column from the EMPLOYEE table.
- (iv) Find the name and age of the employees who are drawing salary greater than 15000.
- (v) Find the name and age of the employees who are drawing salaries less than 10000 from "ABC" company.
- (vi) Find the names of the employees who are living in the same city as the city of the company where they are working.
- (vii) Find the names of the employees who are **not** working in "Kolkata".

```
SELECT EmpName
FROM WORKS
WHERE CompanyName = 'XYZ' ;
```

```
UPDATE COMPANY
SET City = 'Kolkata'
WHERE CompanyName = 'ABC' ;
```

```
ALTER TABLE EMPLOYEE
DROP Street ;
```

```
SELECT EMPLOYEE.EmpName, EMPLOYEE.Age
FROM EMPLOYEE, WORKS
WHERE EMPLOYEE.EmpName = WORKS.EmpName
AND WORKS.Salary > 15000 ;
```

```
SELECT EMPLOYEE.EmpName, EMPLOYEE.Age
FROM EMPLOYEE, WORKS
WHERE EMPLOYEE.EmpName = WORKS.EmpName
AND WORKS.Salary < 10000
AND WORKS.CompanyName = 'ABC' ;
```

```
SELECT EMPLOYEE.EmpName
FROM EMPLOYEE, WORKS, COMPANY
WHERE EMPLOYEE.EmpName = WORKS.EmpName
AND COMPANY.CompanyName = WORKS.CompanyName
AND EMPLOYEE.City = COMPANY.City ;
```

```
SELECT WORKS.EmpName
FROM WORKS, COMPANY
WHERE COMPANY.CompanyName = WORKS.CompanyName
AND COMPANY.City <> 'Kolkata' ;
```



OR

(a) Write the proper code to create the following table in HTML.

Type	Rate	Available
Single Bed	1500/-	5
Double Bed	2500/-	8

Hints: Normal HTML code.

(b) What is the function of anchor tag?

An **anchor tag** is an **HTML tag**. It is used to define the beginning and end of a hypertext link. Search engines use the **tag** to determine the subject matter of the destination URL. Users click on the **anchor** text to reach the link target.

(c) How can you insert a moving text in a web page?

**Hints:** By using MARQUEE tag.