



OR GOD AND COUNTRY

ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution

Pre Test Examination- 2018



Sub: Computer Science

Class: XII A1/A2

F.M.: 70

Duration: 3 Hours & 15 Minutes

Date: 8th August, 2018

[Special credit will be given for answers which are brief and to the point. Marks will be deducted for spelling mistakes and bad handwriting]

GROUP 'A'

(Multiple Choice Type Questions)

Choose the correct alternatives:

[1×21=21]

1. In case of Broadband transmission:

- (a) Used in LAN
- (b) Used in a WAN
- (c) TDM is used
- (d) Single channel is used

2. When a network is spread over a large geographic area it is called a:

- (a) MAN
- (b) CAN
- (c) LAN
- (d) WAN

3. Which media does not come under the guided media?

- (a) Optical Fibres
- (b) Coaxial Cable
- (c) Microwave
- (d) Twisted Pair

4. These allow networked computers to share one or more common printers:

- (a) Proxy Server
- (b) File Server
- (c) Print Server
- (d) CD Server

5. Satellite communication uses:

- (a) Radio waves
- (b) Infra red waves
- (c) Microwaves
- (d) uv rays

6. LAN stands for:

- (a) Long area network
- (b) Limited area network
- (c) Local area network
- (d) Local audible network

7. Large collections of files are called:

- (a) Fields
- (b) Database
- (c) Records
- (d) File system

8. The transmission mode which allow both communication devices to transmit and receive data simultaneously is:

- (a) Simplex
- (b) Full-duplex
- (c) Half-duplex
- (d) None of these

9. An example of a bounded medium is:

- (a) Coaxial Cable
- (b) Wave guide
- (c) Fibre optic Cable
- (d) All of the above

10. Mechanism developed to enforce users to enter data in required format is:

- (a) Data validation
- (b) Criteria
- (c) Input mask
- (d) Data verification

11. A device used to provide a common connection point for network devices:
 (a) Hub (c) NIC
 (b) Workstation (d) Printer
12. This is the most popular amongst all types of network cables:
 (a) UTP (c) Fibre optic
 (b) STP (d) Co-axial
13. This device serves as an interface between the computer and the network cabling:
 (a) NIP (b) NIC
 (c) NIT (d) NID
14. Correct HTML code for the largest heading is:
 (a) <head> (c) <heading>
 (b) <h6> (d) <h1>
15. This is the costliest of all types of network cables:
 (a) STP (b) Fibre Optic
 (c) Co-Axial (d) UTP
16. Which one of these is not a guided media:
 (a) Infra Red (b) Co-Axial Cable
 (c) UTP Cable (d) STP Cable
17. This topology usually has multiple connections between any two nodes:
 (a) Ring topology (b) Bus topology
 (c) Mesh topology (d) Star topology
18. The slowest transmission speeds are those of:
 (a) Twisted Pair Wire (c) Coaxial Cable
 (b) Fibre optic Cable (d) Microwaves
19. This Topology uses lesser amount of cable length compared to other topologies:
 (a) Ring (c) Star
 (b) Bus (d) Mesh
20. The full form of URL is:
 (c) Universal Resource Locator (c) Uniform Resource Locator
 (d) Ultimate Resource Locator (d) Unique Resource Locator
21. Which of the following is not a method of accessing the web?
 (a) ISDN (c) MODEM
 (b) DSL (d) CPU

GROUP 'B'

(Short Answer Type Questions)

Answer the following questions:

[1×14=14]

1. What is Bandwidth?

OR,

What is Synchronous Transmission?

2. Define Peer-to-Peer architecture.

OR,

Define Client Server architecture.

3. Write down the full form of FDDI.

4. What is Baud Rate?

5. What is a LAN?

OR,

What is a WAN?

6. Define TDM.

OR,

Define FDM.

7. Define DBMS.

8. What do you mean by the term 'Object' in OOP?

OR,

Define a 'Class' in OOP.

9. What is the full form of CRC?

10. What is the function of a Print Server?

OR,

What is the function of a File Server?

11. What is the function of
 tag in HTML?

12. State one advantage of using UTP cable.

OR,

State one advantage of using Fibre Optic cable.

13. What is Baseband Transmission?

OR,

What is Broadband Transmission?

14. Mention two error handling methods in Communication.

GROUP 'C'

(Analytical/Descriptive Type Questions)

Answer the following questions (Alternatives are to be noted):

[7×5=35]

1. (a) Explain Bus topology with proper diagram. (4)

(b) Write a short note on Fibre optic cable. (3)

OR,

(a) What are the different modes of communication? Explain (4)

(b) Write a short note on Co Axial Cable. (3)

2. (a) Convert the following Infix expression into postfix form.

$$A + B \wedge C * (D + (E + F) / G) - H$$

Also find the value of the postfix expression using stack

If A=8, B=3, C=2, D=10, E=4, F=2, G=3, H=2.

(7)

3. (a) Differentiate between Peer-to-peer architecture and Client Server Architecture. (4)
(b) Mention the advantages of Database Processing System. (3)

OR,

- (a) Mention the characteristics of NOS. (4)
(b) Write a Short note on NIC. (3)

4. (a) Differentiate between (i) Bus Topology and Ring Topology.
(ii) Synchronous and Asynchronous Transmission. (2+2)
(b) Write a short note on Proxy server? (3)

OR,

- (a) Describe the Protocols used with email. (5)
(b) Define Workstation. (2)

5. (a) Define Polymorphism and Inheritance. (2+2)
(b) Write a short note on **Private** and **Public** Class in OOP. (3)

OR,

- (a) Describe Data Abstraction and Encapsulation. (4)
(b) Mention the utility of **iostream** and **Namespace std** in a C++ program. (3)



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SOLUTION

GROUP 'A'

(Multiple Choice Type Questions)

Choose the correct alternatives:

1. In case of Broadband transmission:
Answer: (b) Used in a WAN
2. When a network is spread over a large geographic area it is called a:
Answer: (d) WAN
3. Which media does not come under the guided media?
Answer: (c) Microwave
4. These allow networked computers to share one or more common printers:
Answer: (c) Print Server
5. Satellite communication uses:
Answer: (c) Microwaves
6. LAN stands for:
Answer: (c) Local area network
7. Large collections of files are called:
Answer: (b) Database
8. The transmission mode which allow both communication devices to transmit and receive data simultaneously is:
Answer: (b) Full-duplex
9. An example of a bounded medium is:
Answer: (d) All of the above
10. Mechanism developed to enforce users to enter data in required format is:
Answer: (c) Input mask
11. A device used to provide a common connection point for network devices:
Answer: (a) Hub
12. This is the most popular amongst all types of network cables:
Answer: (a) UTP
13. This device serves as an interface between the computer and the network cabling:
Answer: (b) NIC
14. Correct HTML code for the largest heading is:
Answer: (d) <h1>

15. This is the costliest of all types of network cables:
Answer: (b) Fibre Optic
16. Which one of these is not a guided media:
Answer: (a) Infra Red
17. This topology usually has multiple connections between any two nodes:
Answer: (c) Mesh topology
18. The slowest transmission speeds are those of:
Answer: Twisted Pair Cable
19. This Topology uses lesser amount of cable length compared to other topologies:
Answer: (b) Bus
20. The full form of URL is:
Answer: (c) Uniform Resource Locator
21. Which of the following is not a method of accessing the web?
Answer: (d) CPU

GROUP 'B'

(Short Answer Type Questions)

Answer the following questions:

1. What is Bandwidth?

The concept is usually used in telecommunication theory to indicate the range of frequencies that can be transmitted through a channel.

OR,

- What is Synchronous Transmission?

The whole data is transferred in a single session.

2. Define Peer-to-Peer architecture.

This architecture allows a client computer to bypass servers and to directly communicate with other computers.

OR,

- Define Client Server architecture.

In this architecture clients need to go through a server, which usually controls access to other clients.

3. Write down the full form of FDDI.

Fibre Distributed Data Interface

4. What is Baud Rate?

The concept is used to indicate the signaling speed of a digital communication line.

5. What is a LAN?

Local Area Network

OR,

- What is a WAN?

Wide Area Network

6. Define TDM.

Time Division Multiplexing

OR,

Define FDM.

Frequency Division Multiplexing

7. Define DBMS.

DataBase Management System

8. What do you mean by the term 'Object' in OOP?

In OOP, objects are the elements through which we interact with the world.

OR,

Define a 'Class' in OOP.

Using a class definition we can have instances of that class. Each such instance forms an object with some physical and functional properties as defined by the class.

9. What is the full form of CRC?

Cyclic Redundancy Code.

10. What is the function of a Print Server?

Print servers are used to allow networked computers to share one or more common printers.

OR,

What is the function of a File Server?

These are usually used to store files created by application programs and allow these to be accessed by two or more clients.

11. What is the function of
 tag in HTML?

It is used for a line break.

12. State one advantage of using UTP cable.

UTP costs less per meter than any other type of LAN cable.

OR,

State one advantage of using Fibre Optic cable.

Single mode fibres can transmit data for about 10km without using repeaters.

13. What is Baseband Transmission?

The entire bandwidth of the communication channel is used to send only one signal.

OR,

What is Broadband Transmission?

Multiple signals share the communication channel at a time.

14. Mention two error handling methods in Communication.

Parity Check Method and Cyclic Redundancy Code Method.

GROUP 'C'

(Analytical/Descriptive Type Questions)

Answer the following questions (Alternatives are to be noted):

1. (a) Explain Bus topology with proper diagram.

Hints: Structure, Operation, Types, Advantages & Disadvantages.

- (b) Write a short note on Fibre optic cable.

Hints: Structure, Operation, Types, Advantages & Disadvantages.

OR,

- (a) What are the different modes of communication? Explain

Hints: Simplex, Half Duplex & Full Duplex. With Diagram.

- (b) Write a short note on Co Axial Cable.

Hints: Structure, Operation, Types, Advantages & Disadvantages.

2. (a) Convert the following Infix expression into postfix form.

$$A + B \wedge C * (D + (E + F) / G) - H$$

Also find the value of the postfix expression using stack

If $A=8, B=3, C=2, D=10, E=4, F=2, G=3, H=2$.

Postfix: $ABC \wedge DEF + G / + * + H -$

Value: 114

3. (a) Differentiate between Peer-to-peer architecture and Client Server Architecture.

Hints: Server based and without server. Administration process.

- (b) Mention the advantages of Database Processing System.

Hints: Minimized Data duplication, Data remains together, Data Independence.

OR,

- (a) Mention the characteristics of NOS.

Hints: Maintain connectivity, Sharing of data and network resources, Data security.

- (b) Write a Short note on NIC.

Hints: Network Interface Card. Structure, Operation.

4. (a) Differentiate between (i) Bus Topology and Ring Topology.

Hints: Single long cable & Loop, Use of terminator.

(ii) Synchronous and Asynchronous Transmission.

Hints: Transferring bulk data, use of token, Synchronisation.

(b) Write a short note on Proxy server?

Hints: Grants Internet Access selectivity, Blocks specific services, Track Individual internet usage, Hides user identity.

OR,

(a) Describe the Protocols used with email.

Hints: SMTP, POP, IMAP, MIME

(b) Define Workstation.

Hints: Computers that basically share network's resources are called clients. A client is sometimes also called a workstation.

5. (a) Define Polymorphism and Inheritance.

Hints: Inheritance is the capability of an object to inherit the properties of another object. Polymorphism basically means having 'many forms' and allows different categories of objects to respond to the same operation in different ways.

(b) Write a short note on **Private** and **Public** Class in OOP.

Hints: User Access, Hidden from the outside world.

OR,

(a) Describe Data Abstraction and Encapsulation.

Hints: Data Abstraction refers to the idea of hiding the implementation details of a concept from the user. The process of encapsulation is used to define such an object and combine the properties and functionalities of an object under a single heading or unit.

(b) Mention the utility of **iostream** and **Namespace std** in a C++ program.

Hints: The word iostream stands for 'input and output stream'