

Q2 (a)

i) Difference in Properties	RAM	ROM
Full-form	Random Access Memory	Read Only Memory.
Definition	RAM is the form of computer memory that can be read and change in any order, typically used to store working data and machine codes.	ROM is type of non-volatile memory used in computers and other electronic devices.
Speed And Capacity	RAM has higher speed and capacity, and its data can be easily modified and erased.	ROM has slow speed and lower capacity. Data in ROM can only be read, it cannot be modified or erased.

ii)

NETWORK FIND INTERNET.

OUTLINE:-

Definition

Connectivity

Objective.

Definition:-

Network is defined as a group of two or more connected computers that can share resources like a printer, an internet connection, Where as

Internet is a collection of interconnected devices which are spread across globe.

Connectivity:-

Network connects thousands of PC at one time Where as

Internet connects millions of PC at one time.

Objective :-

Network objective is to exchange data and collaborates with peers. Where as

Internet objective is to get knowledge and communicate over the internet.

iii) GPS And GIS.

GPS is a satellite based navigation system that enables users to determine their location by receiving signals from satellite in space.

Where as, GIS takes data about the Earth's surface and processes, It can be used for forecasting weather patterns, improving and enhancing research capacity in geology etc.

iv) Byte and Nibbles

A byte is the group of 8 bits where as

Nibble is the group of 4 bits

Byte can represent decimal values from 0 to 255

where as

Nibble can represent values from 0 to 15.

Natural Satellite and Artificial Satellite

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Artificial Satellite is man made satellite which is placed in orbit around the earth, moon or another planets like as

Natural Satellites are formed by nature, and are celestial bodies that orbit a planet.

Natural Satellites provide us information about the origin and evolution, but it cannot communicate on earth or with other planets like as:

Artificial satellite include communicative signals, and are used in carrying out scientific experiments.

v) Natural Satellite and Artificial Satellite

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Where as

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Where as:

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2 (b)

- Introduction:
- i) Elements of an Optical Transmission Link
 - ii) Block diagram of Optical fibers
 - iii) Characteristics of Optical fibers
 - iv) Advantages
 - v) Disadvantages

INTRODUCTION:-

An optical fiber is a thin, flexible, transparent fiber that acts as a waveguide or light pipe, to transmit light between the two ends of the fiber, widely used in fiber-optic communications, as signals travel along them with less loss and are also immune to electromagnetic interference.

ELEMENT OF THE OPTICAL FIBER TRANSMISSION LINK.

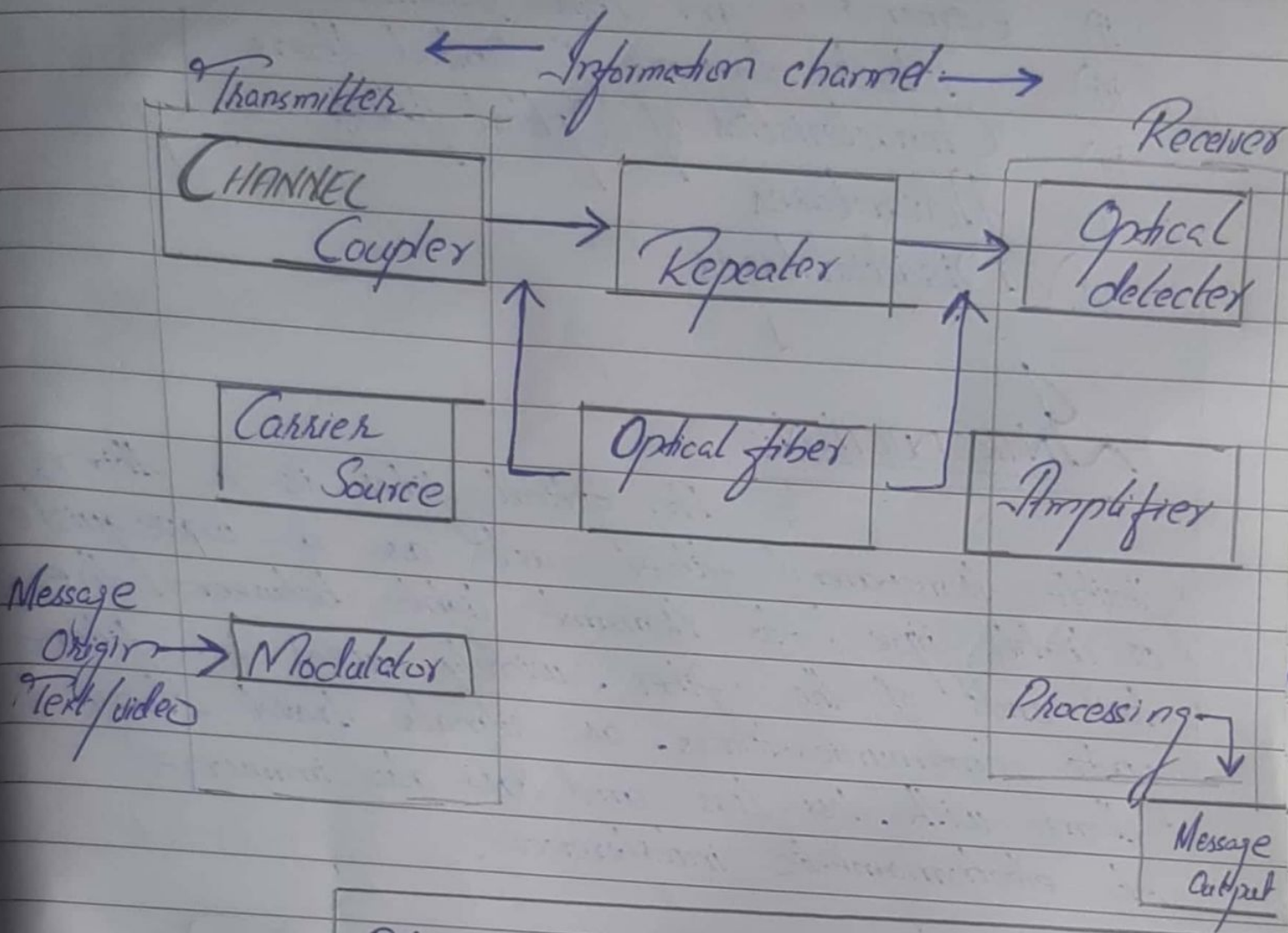
- i) Transmitters:- It emits light pulses (LED or lasers).
- ii) Information channel:- Connectors and cables passively carry the pulses

Date _____

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iii) Receiver.

Receiver detects the light pulses.



BLOCK DIAGRAM OF OFC Systems

CHARACTERISTICS OF FIBER:-

i) WIDER BANDWIDTH:-

The optical carrier frequency is in the range 10^{13} Hz to 10^{15} Hz.

ii) SIGNAL SECURITY:-

The transmitted signal through the fibers does not radiate, so the signals cannot be tapped from a fiber in an easy manner.

ADVANTAGES:-

i) FASTER SPEEDS:-

Fiber optic cables have a core that carry light to transmit data. This allow fiber optic cables to carry signals at speed that are only 31 percent slower than the speed of light.

ii) THINNER AND STURDIER:-

Compare to copper cables, fiber optics are thinner and lighter in weight. Fiber can withstand more pull pressure than copper and is less prone to damage and break.

Disadvantages .

- i) High investment cost
- ii) Affected by chemicals .
- iii) Require special skills .

Q2 (c)

Vitamins

These are the nutrient which our body doesnot make on its own , and are essential for providing good health and necessary for many life functions .

^{Types} Distinguish between water soluble and fat soluble vitamins .

Difference in properties	Water Soluble Vitamin	fat - Soluble Vitamin
Definition	Vitamins that can dissolve in water	These dissolve in fat .
Exemple	Vitamin B, C	Vitamin A, D, E, K
Site of Absorption	Small intestine	Small intestine .

Introduction:-

Kidney are a pair of organs shaped like kidney beans, each about the size of a fist and located just below the rib cage one on each side of spine.

WORKING OF KIDNEY.

Kidney is made up of million filtering units called nephrons. Each nephron includes a filter called the glomerulus and a tubule. The nephrons work through a two-step process.

First the glomerulus filter the blood, then the tubule returns needed substances to blood and removes wastes.

DS (a)

DEFINITION:-

It is a form of energy that is generated when electrically charged particles move through matter or vacuum.

USES:-

i) In MEDICINE:-

It is used in cardiology to treat heart disorders and in oncology to treat tumors.

ii) In Agriculture :-

In agriculture, these are used to disinfect various foods and non-food materials include soil.

iii) In Communication:-

Radio waves are widely used in broadcasting and communication.

iv) In decorative Pieces:-

These are widely used in fluorescent lamps.

v) Sterilization:-

Gamma rays are used for sterilizing food and medical equipment.

Q5 (b)

DEFINITION:-

Light-emitting diode (LED) is a semiconductor device that emits light when an electric current flows through it. When current passes through an LED, the electrons recombine with holes emitting light in the process.

LEDs allow the current to flow in the forward direction and blocks the current in reverse direction.

Q5 (d)

POLIO

Polio also called as Poliomyelitis, is a viral disease that destroys the nerve cells present in spinal cord, causing paralysis.

It is a contagious disease that is caused by Picornaviridae.

Types:-

There are 3 types of polio.

- i) Subclinical.
- ii) Non-paralytic
- iii) Paralytic.

Os (c)

Definition:-

It is an inorganic compound consisting of a metal and one or more non-metals.

Uses :-

Ceramics products are used to make pottery, bricks, tiles, cements and glass.

Os (d)

Semiconductors are materials which have a conductivity between conductors and non-conductors.

Uses:-

Semiconductors are used in manufacturing of electronic devices, integrated circuits, diodes etc.

Q7 (A)

Sol

Ans

Q7 (A)

Data:-

Average of 7 consecutive number = 20.

find largest No. ?

Solution:-

Formula

$$\text{Average} = \frac{\text{Sum of Numbers}}{\text{Total Numbers}}$$

By putting values.

$$20 = \frac{x}{7}$$

$$x = 7 \times 20$$

$$x = 140$$

∴

The largest Number is 140

Q7 (b).

A told B that C is his father's nephew.
D is A's cousin but not the brother of C.
What relationship is there between D and C.

Solution.

A told B C father's nephew.

D \rightarrow A's cousin.

C and D not brothers.

\therefore the relationship between D and C is father and son relation.

Q7(c)

c) find the next number in the sequence

$$7, 12, 19, 28, 39, \dots$$

$$+5 \quad +7 \quad +9 \quad +11 \quad +13$$

Ans: Next number in the
 \therefore sequence is 52

K.w

$$7, 12, 19, 28, 39$$

$$+5 \quad +7 \quad +9 \quad +11$$

Q7(d)

Solution:-

Let the share of A, B, C and D be Rs. $5x$, Rs. $2x$, Rs. $4x$ and Rs. $3x$.

\therefore C gets Rs. 1000 more than D

$$\therefore 4x - 3x = 1000$$

$$\boxed{x = 1000} \Rightarrow \text{eq. (i)}$$

$$B's \text{ share} = 2x$$

By putting x 's value we get;

$$\boxed{B's = Rs. 2000}$$

Ans