

Good for theory portion  
Keep length equal for all parts  
Draw diagrams  
Write complete logic and steps in math portion

Date

Day **M T W T F S**

PART - II

SECTION - I

Answer Question No: 05

Q.No: 5(a)

Block Diagram of input & output devices

Input devices :

Input devices are those devices which are used to take input data. Input devices takes input data from human or other source and transmit it to the computer. Different types of input devices are used such as mouse, keyboard, scanner, barcode reader, sensors etc. These devices send input data to the processor for the processing of data.

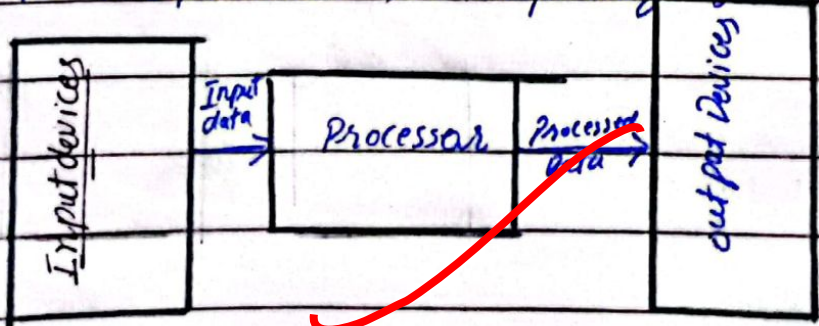


Diagram of the working of Computer

## Output Devices of Computer:

Output devices are those devices of the computer system which are used to present the processed data of the computer system. Different types of output devices are used in computer system for the data presentation. These devices are, ~~comp~~ Monitor, speaker, printer etc. These devices help the ~~computer~~ humans to visualize the processes and data on the computer system.

## Processing Devices of Computer

Processor is the brain of computer system which helps to process the given instructions and convert them into useful information.

Q. No: 5(b)

Define Optics:

Optics are the strand thin glasses which are used to transmit data in the form of light signals from source to receiver. These strands are very thin and can easily be broken so different of coating material is used to protect them from damage and from the loss of information.

These optics are in the core which is further cover by cladding, cladding is covered by buffer, and buffer is covered by plastic jacket.

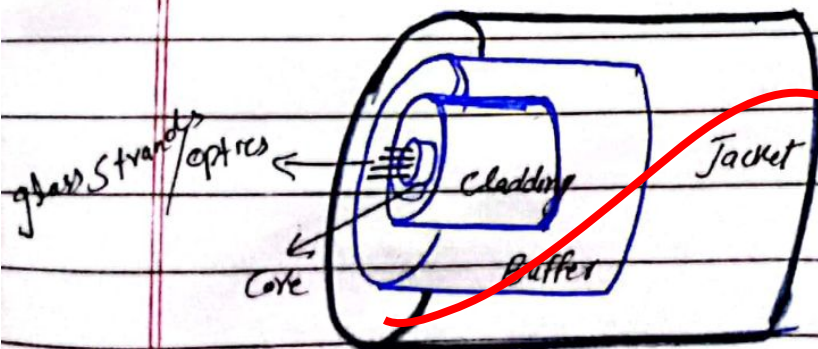
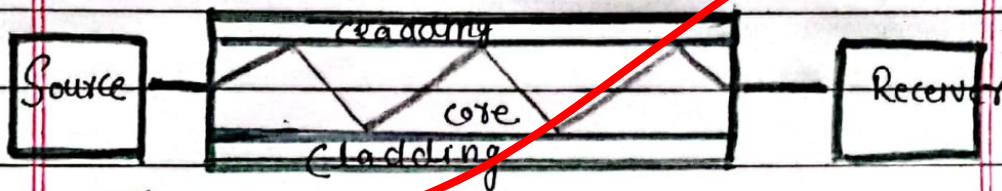


Diagram of optics and optical Fibers

How does an optical Fiber work.

Optical Fiber is a mode of information transmission which works on the principle of total internal reflection of light below the angle of  $42^\circ$ .



There is a source of light which take information in digital form and converts it into light. This light is sent by the ~~core~~ optical fiber, which is made up of glass, total internal reflection takes place inside the core of optical fiber. At the other end of optical fiber which receives light and converts it into meaning information and present it onto the receiving device.

Optical Fiber offer many advantages. It provide the facility of the fast data transmission. It also ensure the data is secured while transmitting.

Q. No: 5(d)

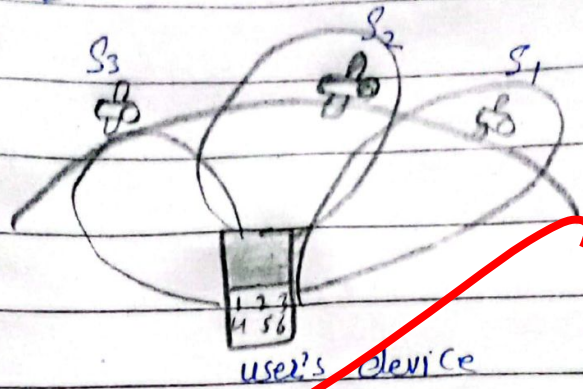
GPS vs GIS

GPS:

GPS stands for Global positioning system. It is a system which allows a person to identify its location in everywhere in the world. GPS consist of three components: satellite, control system, and user segment. It identify the user location by identifying the location of user device.

For the exact determination of location three or satellites works together to determine the location.

User



S = satellite.

### Working of GPS

If user's device is equipped with screen then it can also see the map on its screen.

### GIS:

GIS stands for Geographical Information system. This system is used to collect, store, and analyze the geographical data.

GIS consist of several components. Its components are, Hardware, software, people, procedure, and data. GIS information is being used since the mid of the twenty century. GIS is being used for

Different purposes such as to find the area of particular disease etc

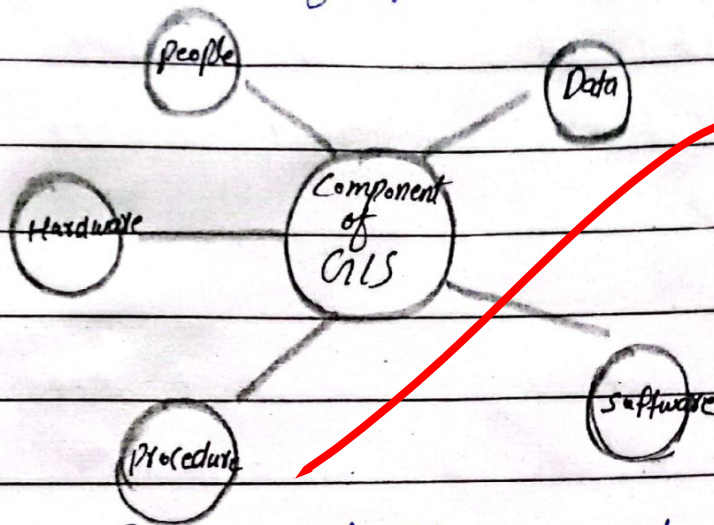


Diagram of the component of GIS

### Answer Question No: 5(c)

Different methods of solid waste Management:

Solid Waste Management:

Solid Waste Management is a collection, transporting, disposing, and treatment of waste. It is a method by which waste material can be used to gain further benefits such as methane gas.

ProcedureMethod of Solid Waste Management.Collection:

In this process the garbage is collected from different cities of city.

Sorting:

The next step is, in which ~~data~~ waste is collected in an organized.

In this step, ~~data~~ garbage is sorted according to its composition.

Transporting:

The next step in which ~~data~~ Garbage is transported to the site where it is being dumped.

Dumping:

The next step is dumping. ~~data~~ Waste is placed inside the box which is covered by a lid.

Disposed off.

The remaining waste material is disposed off.

Methods of Solid Waste ManagementSanitary Landfill:

In this type of landfill, all the sanitary waste or waste of



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construction is placed.

Industrial Landfill:

In this type of landfill, all the waste material related to industries is disposed off here.

Domestic Landfill:

In this type all kind of domestic waste material disposed off.

Hospital Landfill

In this type of landfill all types of hospital waste is stored there.

Radioactive landfill.

In this type of landfill, all kinds of radioactive landfill is disposed off.



## Answer Question No: 03

Q. No: 4(d)

Advantages and Disadvantages of AI

### Advantages of AI

- i) AI machines and robots are performing humans' daily tasks.
- ii) AI is being used in the medical field for the treatment of many diseases such as cancer.
- iii) AI is used to perform administrative tasks swiftly and easily.
- iv) AI is used in the education system to provide fast and easy access to every type of content.
- v) AI can be used to combat the climate change problem.
- vi) AI is being used in agriculture to increase the crop yield within limited available resources.

## Disadvantages of AI :

- i) eAI is being used to spread misinformation and disinformation.
- ii) eAI is being used to destroy the democratic values.
- iii) eAI is being used in arms race, which can ~~destroy~~ destroy the humans.
- iv) eAI machines are trained on gender biased data; so, AI is also gender biased.
- v) AI is the big cause of unemployment in this era.
- vi) eAI can develop intimate relationship with humans and can hack and can corrupt humans mind.

A. Q. No: 3(d)

Diagrams?

What is Eclipse:

Eclipse means cast of shadow.  
So different types of eclipse  
is observed on the earth.

There are two types of eclipse;

① Solar Eclipse

② Lunar Eclipse

Solar Eclipse

Lunar Eclipse

① It occurs when  
moon cast shadow on  
the earth.

It occurs when  
earth blocks sunlight  
of the sun.

a

(ii) It occurs when  
moon is new

Lunar Eclipse occurs  
when moon is full.

(iii) Solar eclipse must  
not see with  
naked eye because  
it can damage eye  
permanently

It is safe to look  
at lunar eclipse  
with naked eye

(iv) It occurs after  
18 months

It occurs twice  
a years.

(v) It is visible only in

It can be seen

a small part of earth

anywhere on the earth

A. Q. No: 3 (b)

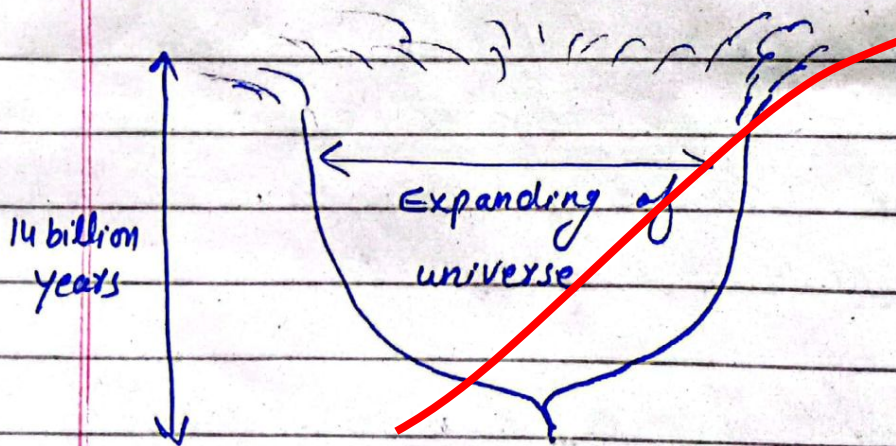
Origin of Universe:

Big Bang theory explains the origin of universe. According to this theory 13.7 billion years ago, universe inside a bubble which is thousands times smaller than a ~~at~~ atom and it is so dense and hot that ~~nothing~~ can imagine. Suddenly, it exploded and within no time, it expanded to the size of galaxy after 30,000 years after, when molecules became little bit cool, then they come to each other and forms of atoms. Our solar system is 4.5 billion years old approximated. The universe is still expanding according to this theory.

Study its theories

How the age of universe is collected.

The age of universe is collected by observing the ~~cosmic~~ cosmic microwave background radiation and by observing the radioactive decay material which helps to determine the age of universe.



Big Bang Theory.

Q. No : 3(a)

## Global Warming

Global Warming is a phenomena, according to which earth mean temperature is continuously increasing day by day.

Global warming is the recent phenomena of human history.

~~The heat is~~ The earth is heating very quickly due to human activities.

Global warming is a wild beast and we all are poking at it which sticks.

It means that Global warming is increasing day by day so rapidly that within <sup>Headings</sup> a few years, all humans will suffer everywhere in the world. The world Meteorologic Organization has declared July 2023 as the world most hottest month of the human history. The world has experience the

incidents of wildfires in the Europe & Asia has experienced the unprecedented patterns of rains and also faced the aftermaths of floods. It means that if the world does not take any step to stop and reduce this phenomena than no human will survive on this planet. Global warming will wipe out the name of human from this planet. So, the world leaders must think about it seriously.



Q. No : 3(a)

Semi-Conductors :

Semi-conductors is a type of material which is most wide used in electronics. It has changed the world. Semi-conductors are used in different



types of electronic machines  
such as computers, television,  
, cars, airplanes, buses etc.

Semi-conductor has two  
types; (i) P-type semiconductor  
(ii) N-type semi-conductors.

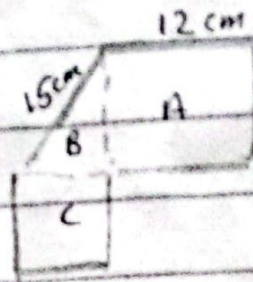
P-type - semi-conductors are  
those atoms which gives one  
electron, and N-type ~~is~~  
semi-conductors are those  
atoms which take one  
electron from other devices.

P-type has positive charge,  
while N-type material has  
negative charge. Semi-conductors  
are mostly produced by Taiwan.

## SECTION - II

Answer Question No: 08

A.No: 8(c)



Shape A is a square whose one side is equal to 12 cm. It means that its all sides length is 12 cm.

Shape B is triangle, its base is unknown, so its base will be:

$$\text{hypot}^2 = \text{base}^2 + \text{perpendicular}^2$$

Put value in above formula, we get

$$(15)^2 = (x)^2 + (12)^2$$

$$225 = x^2 + 144$$

$$x^2 = 225 - 144$$

$$x^2 = 81$$

$$\sqrt{x^2} = \sqrt{81}$$

$$x = 9$$

So base is equal to 9

As we know that the length of  
the one side of shape C is 9.  
And shape 'C' is also a square  
which means its all sides length is 9.  
So the perimeter of the give  
shape will be.

$$\text{Perimeter} = 9 + 9 + 9 + 9$$

$$\text{Perimeter} = 36$$



Q. No : 8 (d)

Definitions?

Edges of nine students are:

15, 15, 16, 16, 16, 17, 17, 18, 19

$$\text{Mode} = 16$$

$$\text{Median} = 16$$

Range = high value - low value

$$R = 19 - 15$$

$$R = 4$$

$$\text{Mean} = \frac{15 + 15 + 16 + 16 + 16 + 17 + 17 + 18 + 19}{9}$$

$$\text{Mean} = \frac{149}{9}$$

$$\text{Mean} = 16.5$$

Q. No : 8(a)

BROTHER is written as  
Q D G S N Q A,

The word SISTER would be  
written as —

Write complete logic and steps

B R O T H E R  
↓ ↓ ↓ ↓ ↓ ↓ ↓  
Q D G S N Q A

Then sister will be written as

S I S T E R  
↓ ↓ ↓ ↓ ↓ ↓ ↓  
Q D S R H R

Q. No : 8 (b)

Card Numbers = 12

Number Series = 1, 2, 3, 4, ..., 12

Probability of '2' is =  $\frac{1}{12}$

Probability of an even no =  $\frac{6}{12}$

$$= \frac{1}{2}$$

Probability of a perfect square =  $\frac{3}{12} = \frac{1}{4}$

Probability of a negative number =  $\frac{0}{12} = 0$

(3)

Probability of a number less than

$$13 \text{ is } \frac{12}{12} = 1$$



Answer Question No: 8

Q. No: 6(a)

Farmer's fence length = 300 ft

Fence cut in ratio = 1:4

$$\begin{aligned} \text{The length of first piece} &= \frac{1}{5} \times 300 \\ &= 60 \text{ ft} \end{aligned}$$

$$\begin{aligned} \text{The length of second piece} &= \frac{4}{5} \times 300 \\ &= 240 \text{ ft} \end{aligned}$$

Q. No: 6(d)

According to Quest -

$$3 : 2 :: x : y$$

$$4 : 5 :: x+2 : y+6$$

$$\frac{4}{5} = \frac{x+2}{y+6}$$

$$4(y+6) = 5(x+2)$$

$$4y - 24 = 5x - 10$$

$$5x - 4y - 10 + 24 = 0$$

$$5x - 4y + 14 = 0 \quad \text{--- (1)}$$

$$5x - 4y + 14 = 0$$

$$x = \frac{4y - 14}{5} \quad \text{--- (ii)}$$

put eqn (ii) in eqn (i); we get:

$$5\left(\frac{4y - 14}{5}\right) - 4y + 14 = 0$$

$$4y - 14$$

**Q. No: 6(c)**

Cricket team won 60% matches  
in a year.

$$\text{Lost matches} = 24$$

$$\text{Match drawn} = 0$$

It means.

$$\begin{aligned} \text{Total matches} &= \text{lost matches} + \text{won matches} \\ 100\% &= 40\% + 60\% \end{aligned}$$

$$100\% = 24 + 60\%$$

So find total matches by:

$$24 = \frac{40}{100} x$$

$$24 = \frac{2}{5} x$$

$$x = \frac{24 \times 5}{2}$$

$$x = 12 \times 5$$

$$x = 60$$

Total matches = 60

Won matches :

$$x = \frac{60}{100} (100)$$

$$x = 36$$

No. of Won matches 36

Q. No: 6 (b)

Rectangle parameter =  $2(l+w)$  — (1)

Rectangle Parameter = 20 inches.

Rectangle length =  $2w$

$$20 = 2(3 + 2w) + w$$

$$20 = 6 + 4w + 2w$$

$$14 = 6w$$

$$w = \frac{14}{6}$$

$$w = 2.33$$

put value w in first equation

$$20 = 2(l + 2.33)$$

$$20 = 2l + 4.66$$

$$14.44 = 2l$$

$\lambda = 7.22$  103