

Final Mock - GSA

QUESTION 7:-

(a)

Given:-

$$\text{Loan amount} = 1200$$

$$\text{Interest amount} = 432$$

$$\text{Rate of interest} = ?$$

To do:-

$$\text{Rate of interest} = ?$$

Solution:-

Using the formula for Simple interest

$$\text{Simple Interest} = \frac{P \times R \times T}{100}$$

$$432 = \frac{1200 \times R \times T}{100}$$

$$\frac{432 \times 100}{1200} = R \times T$$

$$\sqrt{x^2} = \sqrt{36}$$

$$x = 6$$

44.5

Good

The rate of interest is 6.

(b)

Given:-

Average visitors = 510 on Sundays

Other days = 240

Average

To do:-

Average number of visitors per day in a month beginning from Sunday = ?

Solution:-

Total number of Sundays in a month of 30 days

beginning from Sunday = 5

Sum of people on Sundays

$$S = \text{Avg} \times n$$

$$S = 510 \times 5$$

$$S = 2550$$

Sum of people on other days

$$\begin{array}{r} @240 \\ \underline{125} \\ 41200 \\ \underline{4800} \\ 6000 \end{array}$$

$$S = \text{Avg} \times n$$

$$S = 240 \times 25$$

$$S = 6000$$

Total Sum of people visiting in a month of 30 days

$$S = 2510 + 6000$$

$$S = 8510$$

Now the average of people visiting in a month with 5 Sundays and a total of 30 days is

$$S = \text{Avg} \times n$$

$$8510 = \text{Avg} \times 30$$

$$\frac{8510}{30} = \text{Avg}$$

$$\text{Avg} = 285$$

85

So, the average number of people visiting in a month is 285.

(c)

~~To do:~~

Given:-

40% of a number equals $\frac{2}{3}$ of another number

To do:-

Ratio of first number to second number = ?

Solution:-

Let x be the first number

Let y be the second number

As given,

$$40\% \text{ of } x = \frac{2}{3} \text{ of } y$$

$$\frac{40}{100} \times x = \frac{2}{3} \times y$$

$$\frac{x}{y} = \frac{2}{3} \times \frac{5}{40}$$

$$\boxed{\frac{x}{y} = \frac{5}{3}}$$

The ratio between first number

and second is $\frac{5}{3}$ ✓

(d)

Given:-

Two dice thrown simultaneously.

To do:-

Probability of two numbers
whose product is even = ?

Solution:-

6^2
36

* The maximum even number would
be 12 combined by both
the dices.

Probability of a number with whose
a product is even =

$$\frac{12!}{3!3!} = \frac{1}{3}$$

$\frac{1}{3}$ is the probability.

(b)

Given:-

Sold balls = 17

Total price = 720 Rs

Loss equal to cost of 5 balls

To do: ?

Cost Price of ball = ?

Sol:-

~~(Each ball was sold at =~~

$$\frac{720}{17} = 42.35 \text{ Rs}$$

~~Loss incurred = cost price (5))~~

On selling 17 balls for 720 Rs

it there was a loss of

cost of 5 balls that means

the selling price covered the

cost of $17 - 5 = 12$ balls

So, the cost of balls is

$$= \frac{720}{12} = 60$$

lost of each ball is 60Rs

(c)

Given:-

Man 24 years older than son

Two years hence, man's age
will be twice of son

To do:-

Present age of son = ?

Sol:-

Let ^{present} age of man = x

Let present age of son = y

As given

$$x = 24 + y \rightarrow (1)$$

After 2 years,

$$x + 2 = 2(y) \rightarrow (2)$$

$$\frac{x + 2}{2} = y \rightarrow (3)$$

Put value of y in eq (1)

$$x = 24 + \left(\frac{x + 2}{2}\right)$$

$$x = \frac{48 + x + 2}{2}$$

$$2x = 48 + x + 2$$

$$2x = 50 + x$$

$$2x - x = 50$$

$$x = 50$$

Now put value of x in eq (1)

$$x = 24 \quad 50 = 24 + y$$

$$50 - 24 = y$$

$$y = 26$$

The current age of son would be ~~24~~ 26.

(d)

- Given:-

Rashid takes = 6 hours to type 32 pages

Kamran takes = 5 hours to type 40 pages

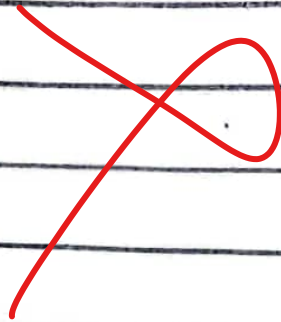
Total pages = 110 pages

To do:-

Total time taken by

both to complete assignment = ?

Sol:-



QUESTION 2

(a)

Introduction:-

Electricity is a very basic necessity of this day and age and is needed by all and to perform all the daily activities

of life. Artificial intelligence is also becoming as important as electricity due to its high utility in the fast growing technological world.

"Artificial Intelligence is the new electricity"

The statement that "Artificial intelligence is the new electricity" means that it is the new oxygen of technological activities taking place in the world. As all and every human activity involves electricity one way or another. With increase in tools and platform based on Artificial intelligence it will soon become as essential as electricity.

* High Utility:-

Artificial intelligence's ability has greatly increased in the recent times and projects to increase more with time.

* Diverse usage of AI:-

The diverse usage of AI qualifies it as being synonymous to electricity as electricity is consumed by all. The rapid and diverse offerings of AI makes it highly valuable in this day and age.

Conclusion:-

As the utilization and adoption of AI is similar to that of electricity in the fast growing technological world. It can be called the new tech electricity.

(b)

Introduction

Central Processing Unit (CPU) is the main part of computer. It resembles the human mind in its diverse features, importance and working of the computer.

Both are each other counterparts in respect systems.

CPU is brain of Computer:-

All the functions performed in a computer are commanded by the central processing unit (CPU) of the computer.

It resembles the human brain in multiple ways:-

Resemblance to Human brain :-

There are a number

of resemblances in the human brain and CPU. Some are as follows.

Commands

* Give functions to the computer.

Just like a human brain commands and give functions needed for the working of the body, CPU performs and gives functions to the computer.

* Data Processing takes place:-

All the critical thinking and data processing takes place in the CPU just like the human brain processes new information and undergoes a thought process.

* Keeps a check on smooth functioning:-

Human brain keeps a check on the smooth functioning of the

all of the organs of the body. Similarly CPU is the part of the computer that is responsible for the functioning and keeps a check on the proper functioning of all parts of computer.

Conclusion -

As CPU resembles the human mind in its basic functions of data processing, critical thinking, giving commands and checks on the functioning of the computer, they are the two most important parts of respective bodies.

(C)

Balanced Diet:-

Balanced diet means a diet that has all the

essential nutrients required by
the body for its proper
functioning. A diet that includes
the proper levels of proteins,
carbohydrates, fats, vitamins
and other minerals.

Necessary for smooth functioning
of human body:-

A balanced diet is essential
for the smooth functioning of
human body. To maintain a
healthy body, it should have
the essential nutrients on a
daily basis.

* Essential Nutrients:-

A balanced diet should have
the following essential nutrients

- 1) Carbohydrates
- 2) Proteins
- 3) Vitamins

- 4) Minerals
- 5) Fats and Oils
- 6) Lipids.

Deficiency of Vitamins:-

As vitamins are one of the most essential nutrients that are needed for smooth functioning of body. Their deficiency can lead to severe imbalances and problems in body.

* Deficiency of Vitamin A:-

The deficiency of Vitamin A affects the eyesight and can cause night blindness.

* Deficiency of Vitamin B:-

The deficiency of Vitamin B can lead to problems in the blood levels and muscles. It can cause beriberi or anaemia.

* Deficiency of Vitamin C:-

The deficiency of Vitamin C can affect the healing of wounds and can affect the teeth leading to bleeding gums and wakening of teeth and muscles.

(d)

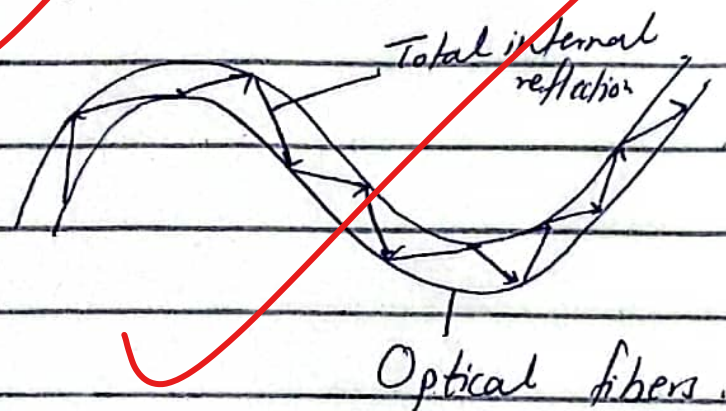
Working of Optical Fibers

Optical fibers are made of thin glass threads and are used to transmit data from one place to another.

Total Internal Reflection:-

Optical fibers work on the principles of Total internal reflection. The data signals

being transferred in the form of light waves do not leave the wire and are totally internally reflected inside the wire and reach the destination without leakages.



GPS:-

GPS stands for Global positioning system. It is a radio transmission system that allows to locate the time, location and velocity at any time of the day. It uses satellites to send and receive data and allows to

~~use locate a certain place
any and location.~~

~~Uses:-~~

- ~~(1) It is used by the public through maps to locate a place.~~
- ~~(2) It is used by aircrafts to locate the exact position.~~
- ~~(3) It is used by in navigation, forecasting of weather and in automobiles.~~

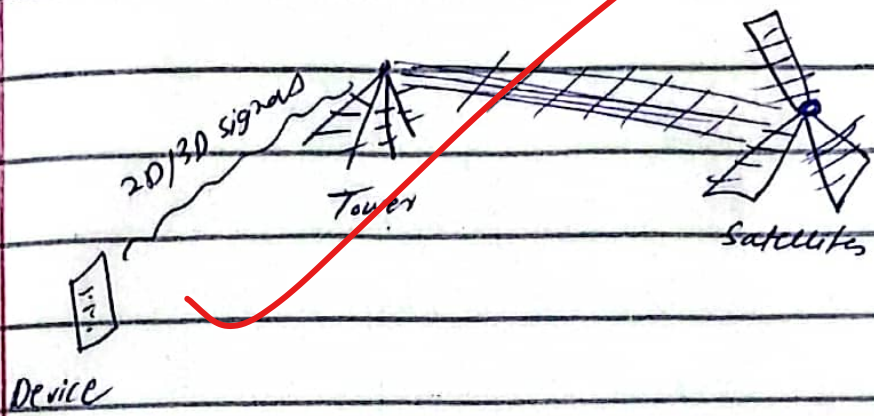
~~2D and 3D locations~~

~~are measured by satellites:~~

~~2D and 3D locations are measured by satellites by detecting the (time)ⁿ signals coming from a certain device. The satellite captures the 2D and 3D signals coming from a device and are transmitted and sent~~

2.5

back to the device to locate the exact position. The satellites capture the exact signals and consequently determine the exact location.



QUESTION 3.

(a)

Chemical Bonds:-

Chemical bonds are formed by atoms present inside elements. The bonds are formed as the atoms want to complete the outermost

shells to attain stability. The elements undergo chemical bonding to reach the closest possible configuration to reach stability.

To gain Stability:

Atoms and molecules undergo chemical bonds as they aim to achieve stability by completing their outermost shells by removing or adding electrons in their valence shells. They undergo different types of chemical bonds such as covalent bonds, ionic bonds and coordinate or covalent bonds.

Covalent bond in Water Molecules

The water molecules are formed when two ^{atoms} molecules of

hydrogen form a covalent bond
with one molecule of H_2O
Oxygen



Two atoms of hydrogen form
a covalent bond with oxygen
by sharing a pair of electrons
between them. One electron from
hydrogen comes in contact with
one electron from oxygen
and water molecule

(C)

Global Warming:-

Global warming is a
global challenge faced by the
world today. It is the
increase in the Earth's temperature
due to human activity and

due to the green house effect caused by the ozone depletion and use of hydrocarbons and CFCs chlorofluorocarbons. This is causing serious problems for the world.

Demerits of Global

Warming :-

The demerits of global warming are as follows

- ① The increase in earth's temperature leading to disruption in normal functioning of human body
- ② Melting of Polar ice caps creating floods and increase in sea levels.
- ③ Change and extreme changes in weather and climate leading to natural disasters.
- ④ Extreme temperatures from hot to

could leading to unbearable levels
to live.

(5) Destruction of natural habitat
leading to extinction of wild
animals and wild life

(6) Fatal effects on the marine
life with changes in temperature
and atmosphere levels.

Merits of GW:-

There are particularly no
merit of global warming as
it is leading to destruction of
wildlife and creating fatal
and critical environments for
human survival.

(a)

Polio:-

Polio is a disease that
is caused by a specific bacteria

that impact the body human body and dysfunctions many parts of the body leading to disabilities and to be effective, mostly babies are impacted by the bacteria of polio and are essential to receive vaccines of Polio in early ages of life.

Challenges in Eradication of Polio in Pakistan:

There are a number of challenges faced in Pakistan in eradication of Polio. Some of them are as follows:

- ① Stereotypes against the polio vaccines as being fatal and dangerous
- ② Consider the Polio vaccines considered haram to take due

to presence of harmful ingredients -
① lack of awareness among
the population about the
dangers and negative impacts
of polio

④ lack of vaccines and to
cater to the great population
of 220 million in Pakistan

⑤ Lack of medical officials
and volunteers to undergo
polio campaigns.

⑥ lack of structural plans
and management of polio
eradication

⑦ Poor population consensus and
management of population

⑧ Unable to reach all the
children either due to societal
pressures or lack of transport
infrastructure

Work on Paper
Presentation: