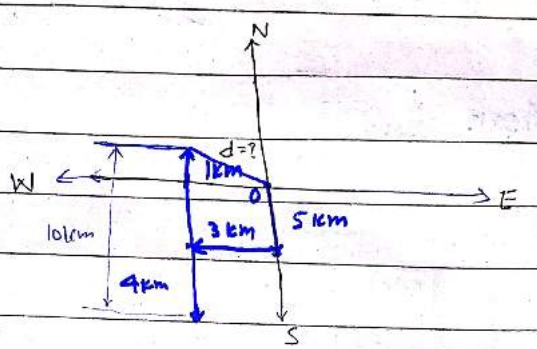
Ijaz Alam
Batch: 334

Section - II

Q No. 8:

a-



Applying Pythagorean Theorem, the distance of the man from its starting point can be found.

$$\text{Perpendicular}^2 + \text{Base}^2 = \text{Hypotenuse}^2$$

$$(1)^2 + 3^2 = d^2$$

$$1 + 9 = d^2$$

$$d = \sqrt{10} = 3.1\text{km}$$

→ The distance of the man away from his starting point is 3.1km.

→ The man is travelling towards the North.

b- Arthmatic Mean of First five prime numbers.

Let the numbers be:

1, 3, 5, 7, 11

Mean = $\frac{\text{Sum of all numbers}}{\text{Total numbers}}$

$= \frac{1+3+5+7+11}{5} = \frac{27}{5}$

Mean = 5.2

c-

By Using Arrow Method, the problem can be solved.

Men	Length of Road	Days
50 ↑	20 km	40 ↓
70	20 km	X

$\Rightarrow \frac{X}{40} = \frac{50}{70} \Rightarrow X = \frac{40 \times 50}{70}$

$\Rightarrow X = \frac{200}{7} \Rightarrow$ **X = 28.5 days**

Seventy men will complete the same task in 28.5 days.

d-

Property Worth = Rs. 175000

Debt Amount = Rs. 150,000

Remaining Amount = Rs. 25000

Son's Share = x $\quad x = 2y$

Daughters Share = y

Total Ratios:

= 2 + 1 = 3

Son's Share = $\frac{2}{3}$ (25000) = $\frac{50,000}{3}$

Son's Share = Rs 16666.6

Daughters Share = $\frac{1}{3}$ (25000)

Daughters Share = Rs. 8333.3

Q No. 7:

a-

Price of the Shirts = x

Amount increased = 20%

New Amount, N = Rs. 80

New Price = N = x + 0.2x

= 80 = x + 0.2x

=> 80 = 1.2x => x = 80/1.2

=> x = 66.6

The original Price of the Shirt: Rs. 66.6

b-

In a certain coding pattern, BROTHER is written as QDGSNQA. Basically, in this pattern, each alphabet has number of steps to produce the code. For instance, it has taken eleven steps back from 'B' to 'Q', twelve steps from 'R' to 'D', eight steps from 'O' to 'G', and so on so forth. In the same manner, eleven steps have been taken back from 'S' to H, and twelve steps from 'I' to U and so on.

Thus, the new code is as follows:

BROTHER → QDGSNQA

SISTER → HUKSKQA

C-

(i) Scalene Triangle

A triangle having none of the sides equal dimensions.

Example:

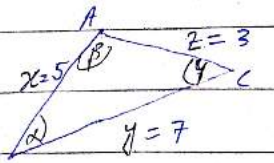


Diagram of Scalene Triangle

(ii) Equilateral Triangle:

A triangle having all the sides equal dimensions or lengths.

Example:

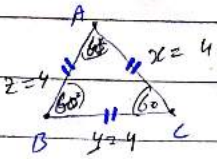
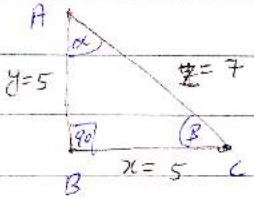


Figure of Equilateral Triangle

(iii) A triangle which is Isosceles and Right at the same time:

Isosceless Triangle:

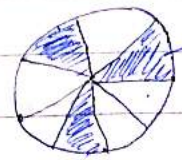
A triangle having only two sides equal dimensions.



Right Triangle:

The triangle which has at least one angle at 90°.

d-



Total sliced = 8
Slices with Raisan = 3

Pizza

Prob(Event) = Number of Occurrence of Event / Total Sample Space

Prob(raisan) = 3/8 = 0.37

Prob(raisan) = 37%

The probality of picking slices with raisan is 37%.

Section - I

QNo. 4:

a-

Land pollution:

The contaminnation of land by the addition of harmful substances such acids, chemicals, fertilizers and toxins due to human activities is termed as Land pollution. It results in the decline of fertility of land.

Causes of Land pollution:

a- Excessive Use of Fertilizers

Using excessive and detrimental fertilizers in view of increasing the productivity of the land, farmers often cause land

pollution.

b- Acid Rains Reduces Fertility of Land

Most of the time, rains are highly acidic due to the presence of Green House Gases in the atmosphere. Consequently, rains become acidic and aggravate the soil quality and fertility, reacting with soil due to acidic nature. In fact, acidity of rain reduces necessary chemicals and elements in soil for the growth of plants.

c- Industrial Wastes spoil Quality of Soil

Industries produce a huge amount of chemicals as a waste product after their daily operations. Such chemicals contaminate soil and add harmful elements into the lands. This also affects the quality of soil when industries dispose of their wastes on land without proper mechanism of disposal.

d- Radioactive Substances and Their Effects

Radioactive materials, having been used for radioactivity and nuclear processes, also generate nuclear or radioactive wastes. These wastes

have also catalysed the rate of land pollution by adding chemical and physical elements into the land.

b-

COP-27

"COP" stands for Conference of parties and '27' shows the number of meetings these parties have held as yet. Global communities have come together to collectively resolve the plight of climate change haunting the world.

Main Goals of COP-27

(i) Reduction of Green House Gases' Emission

This conference aims to reduce the emission of Carbon dioxide, Carbon Mono oxide, Methene, CFCs etc from the atmosphere through curbing industrial emissions. It obligates the member states to reduce their respective CO_2 emission to revive atmospheric order.

(ii) Reduction of Global Temperature

So far, the temperature of the planet has increased by 1.1°, Since Industrial Revolution the temperature of earth has been increasing due to addition of GHGs into the atmosphere. Consequently global warming has been a reality menacing the very existence of mankind. This conference tends to keep the temperature of earth well below 2°C to avoid the detrimental effects of global warming.

(iii) Implementation of Climate Related Policies

Realizing the gravity of the issue, the world has committed to implement Polices pertaining to reduce GHGs emission and ensure practical steps in this regards. For instance, reducing industrial emissions of CO_2, CFCs and plantation by states. Moreover, reduction of forests is also their aim.

(iv) Initiation of Climate Change Related Funds as Climate Justice

Creation of climate justice fund is also one of the goals of COP27. In fact, the major portion of GHGs' emission occurs in the developed states because of their rapid industrialization. Around 85 percent emissions are associated to USA and China alone; however, Pakistan merely produces 0.18 percent of the total emission. Hence, climate reparations and funds have been initiated to compensate the sufferers.

c- GIS System

'GIS' stands for Geographic Information System. It is a system which is used to collect, store, operate and prepare data pertaining to earth. The reports of GIS are used by organizations for information of masses and technical purposes.

Role of GIs in Environmental Science

(i) Collection of Data Regarding Enviroment

GIS System gathers data regarding mountains, oceans, forests, buildings and atmosphere. These informations are required to study

environment scientifically. Using these data, researchers can learn about atmospheric and climatic processes impacting human life.

(ii) GIS as an Information Bank for Environmental Science

Since GIS System preserves all available data relevant to environment in a digital form. This storage of data can act as a database for environmental science to use data as per need. Environmental Science can generate its literature by organising the information present in GIS.

(iii) GIS as an Analytical Tool for Environmental Science

Due to the digital and computerised nature of GIS, it can also assist researchers to use GIS for further analysis of the data collected through the system. Basically, the sole purpose of the acquisition of data is to analyse environmental processes happing in our surroundings. Therefore, it can be easily carried through GIS system.

d-

Artificial Intelligence (AI)

It is the ability of a computional device to mimic humain brain and resolve complex mathematical and analytical problems. 'AI' was first coined in 1954 and it is one of the Wanders of science, aiming to ensure automation in the operation of technological tools.

Fundamentals of AI

(i) Mathematical Model Acting as a Nueron

Since humain brain works on the principle of nerve system through the movements of nueons. Similarly, AI also has a mathematical model to ensure the immitation of nuexnic processes inside the Circuitry of AI devices to perform compudional processes

(ii) Dataset Required for Training the Model

To enable the mathematical model think and process like human brain, it needs a huge dataset at the training phase of the model. Through the dataset a model is trained for a specific purpose.

(iii) Suitable Computional Devices

AI requires a powerful computer to train, test and implement the mathematical model of AI. In case of failure to provide powerful device, Weak capacity powerful devices cannot serve the purpose.

(iv) Testing Phase After Training an AI Model

Testing phase of an AI model is also necessary because through this testing the quality of the trained devices can be ascertained. In other words, you check the functionality of the trained devices for the desired results.