

# Mock # 8 GSA

## Part-II

### SECTION-I

Q: 2

Ans: 2(a)

### Conference of Parties (COP28):-

COP28 was held in UAE between <sup>November and</sup> December 2023 to discuss the progress that the world has made regarding mitigation of global warming and release of greenhouse gases. Key features of COP28 are as under:

#### 1) Creation of Loss and Damages (L&D) Fund:-

On the very first day of the conference, the countries agreed on the official creation of L&D fund. This fund was decided in COP27 but its creation had been in a limbo since then.

L&D fund will be housed in World Bank temporarily. Several first and second world countries have pledged money for the fund. Initial activities of L&D fund will focus on the creation of an executive body for



the fund that will decide the criteria for disbursement of the funds.

## ii) Woes of 3rd World Countries -

Developing nations have raised concerns regarding the creation of L&D fund under WB because WB is headed by the developed world -

Developing countries have also raised concerns over the phasing out of fossil fuels as the world has not pledged on phasing them out as of now -

Countries are also complaining that the pledged donations are not being released to them - Pakistan was able to get pledges of around \$9mn after the floods of 2022 - Sadly none of the amount has reached Pakistan.

Ans : 2 (b)

## Solid Waste Management :

Solid Waste Management refers to the collection, treatment and final disposal of solid waste that is generated from residential, commercial and industrial activities -



## i) Categories of Solid Waste :-

Solid waste is categorized into following categories:-

- a) Household or Municipal waste
- b) Industrial waste
- c) Commercial waste
- d) Agricultural waste
- e) Hospital waste
- f) Construction waste
- g) Treatment plant waste
- h) E-solid waste.

## ii) Methods of Solid Waste Management :-

a) Landfill :- This is the most popular method in which waste is buried into the ground after the removal of toxins and odor.

b) Incineration :- In this procedure municipal waste is burned to reduce it to ash and steam. This reduces the volume of waste by 20 to 30%.

c) Source Reduction

This idea is based on repair, reusing and recycling of used items to reduce the amount of waste produced.

d) Plasma Gasification



In plasma gasification, high temperature burning breaks the molecular bonds in solid waste and so it can be used to make new items.

### e) Recovery and Recycling

This refers to sorting of discarded products - some less damaged items are then recycled or used for energy production.

### f) Composting

This is a natural process of biodegradation of organic (kitchen waste) to nutrient rich food for plants.

### g) Waste to Energy (WTE)

In this process, non-recyclable waste is converted into fuel and energy through different methods.

Ans: 2(c)

### Balanced Diet :-

In nutritional biochemistry, a balanced diet refers to a diet that is constituted of all essential and non-essential nutrients in just the right amount such that it supports normal growth and development.

### Components of Balanced Diet :-

For a diet to be dubbed balanced, it needs to have



following nutrients sources:

a) Carbohydrates: These are the compounds having Carbon, Hydrogen and Oxygen. These are the primary energy providing molecules.

b) Proteins: Proteins are the organic Nitrogen containing molecules - They are implicated for structural and functional structures in the human/animal body.

c) Fats:

They contain fatty acids and glycerol. Fats have storage and protective functions.

d) Vitamins: Vitamins are divided into fat-soluble and water-soluble classes. These include Vit A, B, C, D & K.

e) Minerals: These are inorganic molecules that are required in minute amounts for normal functioning of human body.

f) Fiber: Fiber or roughage is the indigestible part of the diet that passes out of the GIT. It maintains bowel health and increases stool mass.

g) Water: Water is the most important part of human diet because 90% of human cell is composed of water.



Ans: 2(d)

### 3 Renewable Energy Sources Under CPEC:

Three renewable energy sources that are being developed under CPEC project are:-

- i) Wind Energy
- ii) Solar Energy
- iii) Hydel Energy

i) Wind Energy:- Wind energy is made using massive wind turbines connected to wind mill. This energy is generated mostly in coastal areas where wind blows frequently. Wind projects under CPEC include Sacchal Wind farm and Hydro China Dawood wind farm.

ii) Solar Energy:-

Solar energy is generated with solar panels that capture solar radiations and convert them to heat and/or light energy. This energy can be generated anywhere provided that it gets sufficient sunlight for 10 to 12 hours a day. Solar energy projects under CPEC include Quaid-e-Azam solar park at Bahawalpur.



### iii) Hydel Energy:

Hydroelectric power is one of the most popular ways of energy generation that uses the potential energy of water flow to move the turbines. Recently constructed hydel energy power plant include Karot Hydropower plant in AJK/Punjab.

Q: 5

Ans 5 (a)

#### RAM

- i) It stands of Random Access Memory which is a temporary memory of computer system.
- ii) Changes can be made in RAM.
- iii) This memory is erased as soon as the CPU is turned off.
- iv) It stores data in MBs.
- v) It is used in normal computer operations.

#### ROM

- i) It is Read Only Memory which is a permanent memory of computer.
- ii) Changes cannot be made in ROM.
- iii) Data in ROM is saved even after CPU is turned off.
- iv) It stores data in GBs.
- v) It is used during computer startup.



Nibble: Nibble is a unit of measuring digital data - It consists of half a byte i.e., 4 bits - This means that a nibble consists of any of the 4 digits between 0 and 9.

A nibble is often called a semi-byte -

USB:

Universal Serial Bus is a type of computer port that is used to transfer data from one computer to another -

USB has a connector at one end which allows it to be connected to a computer system - Once the data is extracted from the system, the USB is connected to a second device to transfer data to it -

Ans: 5(b)

Revolution by AI:

AI has revolutionized the world in ways that we had never thought before - It is transforming every field of our life from e-Governance to biomedical science - Some of the



areas that AI has revolutionized. Include:

i) Law enforcement and governance: AI is being used by law enforcement agencies and government departments to monitor the localities that are prone to terrorist activities. It can help in locating high risk areas are preempting a possible incident.

ii) Climate Surveillance and Prediction:-

AI is being used in combination with GIS to monitor and predict climate-related natural disasters beforehand. It can also predict sources of pollutions.

iii) Biomedicine and telemedicine: AI-assisted cloud based applications are now being used by doctors and patients to streamline the process of teleconsultation.

AI-robots are also being tested to assist the surgeons during intricate surgeries.

iv) Economics:

Governments across the world are using AI to monitor their economic indicators and to predict economic disasters preemptively.

v) Creative Writing: AI has created the greatest impact for the people connected with writing and designing jobs - AI has



the potential to replicate their creative work within minutes - This has stirred job-insecurity for many across the world.

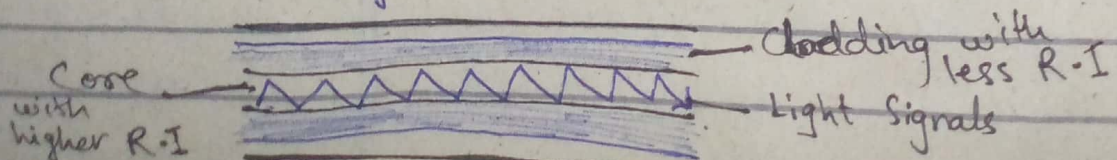
Ans: 5(c)

Fiber Optics: Fiber optics refers to a technology that is used for large-scale data transmission using light signals. These signals are transmitted along cables consisting of glass or clear plastic. The signal strength is maintained till the end without any signal loss.

Working:

A fiber optics cable consists of a core and a cladding. The choice of material for both core and cladding is based on the idea that refractive index (bending of light as it moves from one material to another) should be set in a manner that no light signal is able to escape the cable -

For this reason the refractive index of the core is kept slightly higher than the cladding.





## Advantages:

- 1) Fiber optics are used for transmitting mobile phone signals across long distances
- 2) They are used for: Internet connection
- 3) Fiber optics are used in biomedicine for performing endoscopy

## Ans: 5(d)

Critical Speed of Satellite:- It is the min. speed that is required to move a satellite in the orbit - The concept used for this purpose is centripetal force ( $F_c$ ).: Altitude needed for this is 200km (minimum) and the speed required is 29,000 to 36,000 km/h.

### Geostationary Satellites

i) These satellites are the ones that orbit the earth around its orbit.

ii) These move in anti-clockwise direction.

iii) These are used often for climate surveillance, spying, GPS communication and navigation

### Polar Satellites

These satellites hover or move around the poles from North to South.

ii) These move from North pole to South pole.

iii) They are used ~~not~~ rarely for climate monitoring



## SECTION: II

Q: 7

Ans 7(a)

Let the original price of 2 scooters be 100

$$\begin{aligned}\text{Profit ~~loss~~ on 1st sale} &= 20\% \\ &= 20\% \text{ of } 100 \\ &= 20\end{aligned}$$

$$\begin{aligned}\text{Loss on 2nd sale} &= 20\% \\ &= 20\% \text{ of } 100 \\ &= 20\end{aligned}$$

Hence her net gain/loss is zero



Ans: 7 (b)

9 men complete work in 20 days  
by working 10 hrs/day  
Men needed for completing same  
work by working 15 days for  
13 hrs/day = ?

Solution:-

Men	:	Days	:	Hours
↑ 9	:	↓ 20	:	↑ 10
↓ x	:	↓ 15	:	↓ 13

Correlation between men and days  
is indirect  
Correlation between men and hours  
is also indirect



By solving the correlation we get:

$$\frac{x}{195} = \frac{20}{15} \times \frac{10}{13}$$

$$\frac{x}{195} = \frac{200}{195}$$

Multiplying 195 on both sides

$$\cancel{195} \times \frac{x}{\cancel{195}} = \frac{200 \times \cancel{195}}{\cancel{195}}$$

$$x = 200 \text{ Men required}$$

200 men will be required to complete the work by working 13 hours/day within 15 days.

Ans: 7(c)

$$U' = U - A$$

$$= \{a, b, c, d, \dots, z\} - \{a, e, i, o, u\}$$

$$= \{b, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z\}$$



Ans: 7(d)

Volume of pyramid is =  ~~$a^2 \times h$~~   $\frac{a^2 \times h}{3}$

where  $a$  is base  
 $h$  is height

Putting value in the formula

$$V = \frac{a^2 \times h}{3}$$

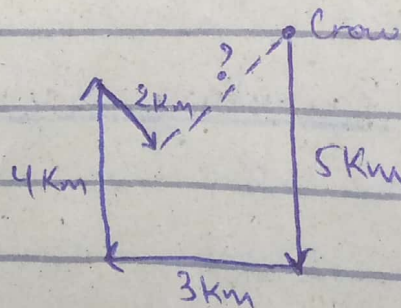
$$372 = \frac{a^2 \times \frac{300}{3}}{3} \quad (1 \text{ km} = 1000 \text{ cm})$$

$$\frac{372}{300} = a^2$$

$$\boxed{1.24 = a^2}$$

Q: 8

Ans: 8(a)





Q: 8

Ans: 8(b)

Total slices = 8

Slices containing raisins = 3

Shiza's chances of picking a slice containing raisins = ?

Using formula of Probability =  $\frac{\text{No. of desired outcomes}}{\text{Total Possible outcomes}}$

$$P = \frac{3}{8}$$

$$P = 2.66$$

Ans: 8(c)

Number of triangles in the following figure are = 16

Ans: 8(d)

Factors affecting IQ :-

Factors that can affect Intelligence Quotient are :-

i) Parenting Style : The style of parenting especially in the early years influences a child IQ by influencing cognitive development

ii) Home Environment : The environment that



a child is bred in determines how sharp, quick-minded he/she is -

iii) Learning Opportunities

Learning opportunities provided to the child influences his/her IQ -

iv) Health and Nutrition

Health and nutritional status of a child can make or break his intellectual development.

v) Education and Schooling

The formal schooling that a child is able to receive greatly affect his/her IQ -

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