

(General Knowledge - I)

GSA.

(Part - I)

- 1- All of these
- 2- moisture content in air
- 3- Resistances
- 4- Parabolic Concave
- 5- Jupiter
- 6- Carbon Dioxide
- 7- Disorder of Joints
- 8- Elongation of Eyeballs
- 9- Kidneys
- 10- Hailstorms
- 11- Earthworm
- 12- Tocopherol
- 13- Nitrogen
- 14- Feldspar
- 15- Yellow Dwarf
- 16- Slightly Basic
- 17- Epicenter
- 18- Communication
- 19- 21%.
- 20- Electrical signals.

(Part - II)

(Q NO. 7)

Part (a)

Sol:-

avg. of seven consecutive no.'s is = 20

largest no. = ?

Suppose:- the largest no. = x .

So,
$$\frac{x + (x-1) + (x-2) + (x-3) + (x-4) + (x-5) + (x-6)}{7} = 20$$

$$7x - 21 = 140$$

$$7x = 140 + 21$$

$$7x = 161$$

$$x = 23$$

So, the largest number is 23.

Part (b)

As per statements:-

A told B that C is his father's nephew

So, A and C are cousins.

D is A's cousin but not brother of C.

So, D and A are cousins

D and C are not brothers.

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relationship between D and C = ?

Since:-

A is cousin to C and D is cousin to A and D and C are not brothers.

There are two possibilities:-

Either :- ① D is sister to C.

Or :- ② D and C are cousins.

Part ②

i)

4, 18, 48, 100, 180, 294, 448.

ii)

1, 2, 10, 37, 101, 226.

iii)

11, 17, 39, 85, 161.

iv)

13, 24, 46, 90, 178, 354.

v)

4, 36, 144, 400, 900, 1764.

Part (d)

Given :-

$$A : B = 1 : 2 \Rightarrow \frac{A}{B} = \frac{1}{2} \Rightarrow 2A = B \quad \text{--- (i)}$$

$$B : C = 3 : 2 \Rightarrow \frac{B}{C} = \frac{3}{2} \Rightarrow 2B = 3C \quad \text{--- (ii)}$$

$$C : D = 3 : 4 \Rightarrow \frac{C}{D} = \frac{3}{4} \Rightarrow 4C = 3D \quad \text{--- (iii)}$$

$$-A + D = 2240 \Rightarrow \del{A = 2240 + D}$$

$$D = +A + 2240$$

share of B = ?

Use (iii) equation :-

$$C = \frac{3}{4} (A + 2240)$$

$$2B = 3 \left(\frac{3}{4} (A + 2240) \right) = \frac{9}{4} (A + 2240)$$

$$B = \frac{9}{8} (A + 2240)$$

using (i)

$$2A = \frac{9A + 20160}{8}$$

$$16A - 9A = +20160$$

$$7A = +20160$$

$$\boxed{A = 2880}$$

putting in (i)

$$B = 2A = 2 \times 2880$$

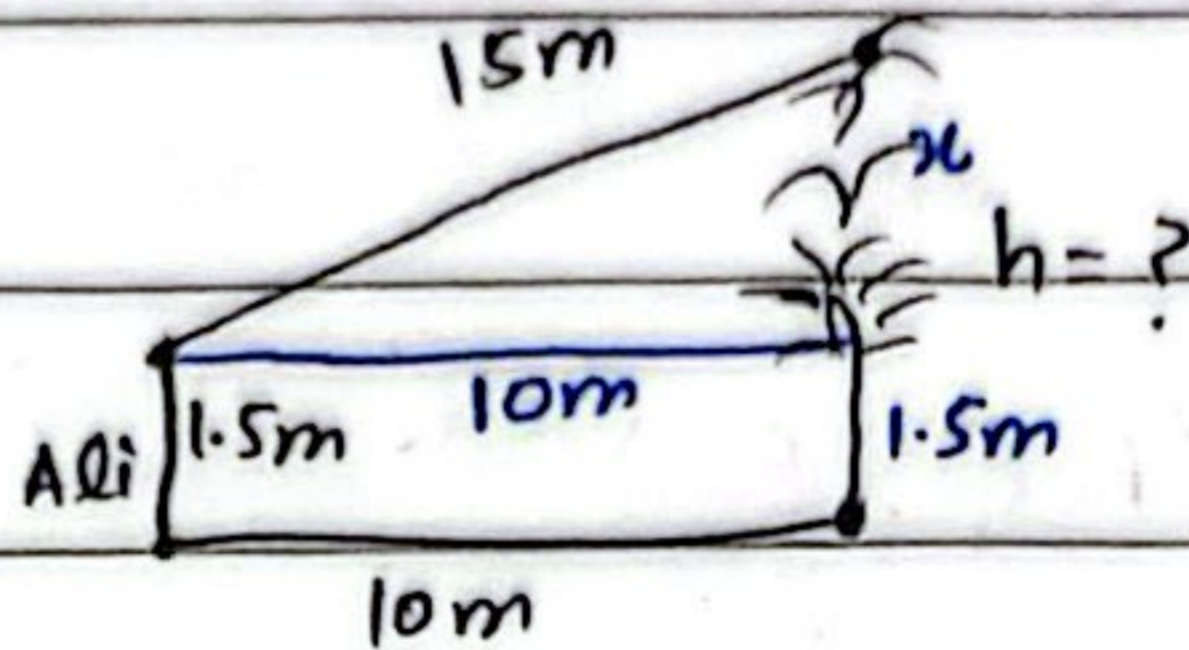
$$\boxed{B = 5760}$$

Ans.

(QNO.8)

Part ①

Given data :-



So,

$$\text{height of tree} = x + 1.5m$$

By using pythagoras theorem :-

$$c^2 = x^2 + y^2$$

$$(15)^2 = x^2 + (10)^2$$

$$x^2 = 15^2 - 10^2 = 225 - 100$$

$$\sqrt{x^2} = \sqrt{125}$$

$$x = 11.18$$

So, height of tree = $11.18 + 1.5$
 = 12.68 meters.

Part ②

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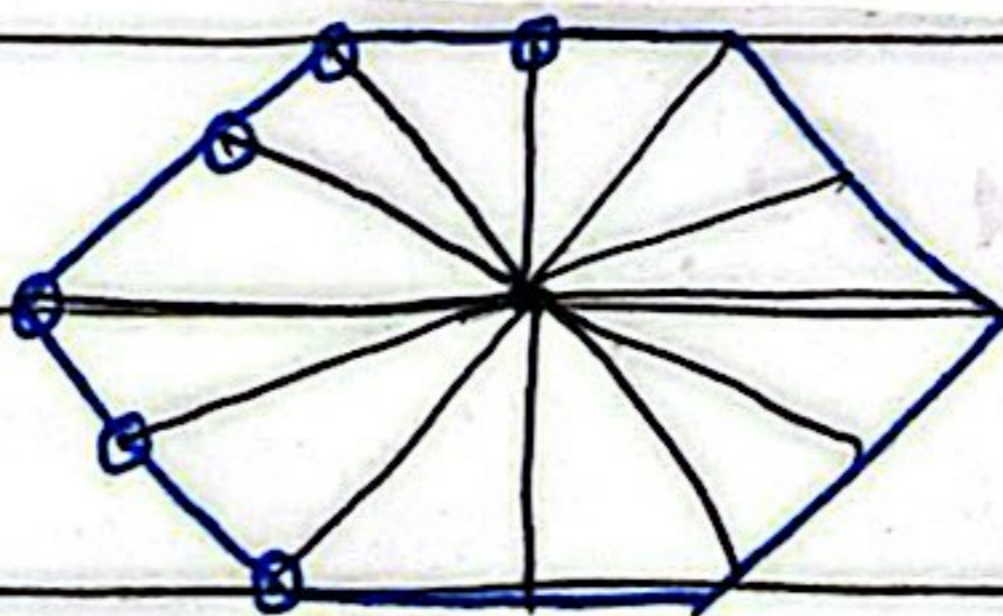
Part ©

Line of symmetry in a hexagon:-

A hexagon consist of 6 equal sides and angle.

It has six line of symmetry.

Three from each side and three from midpoint of each side.

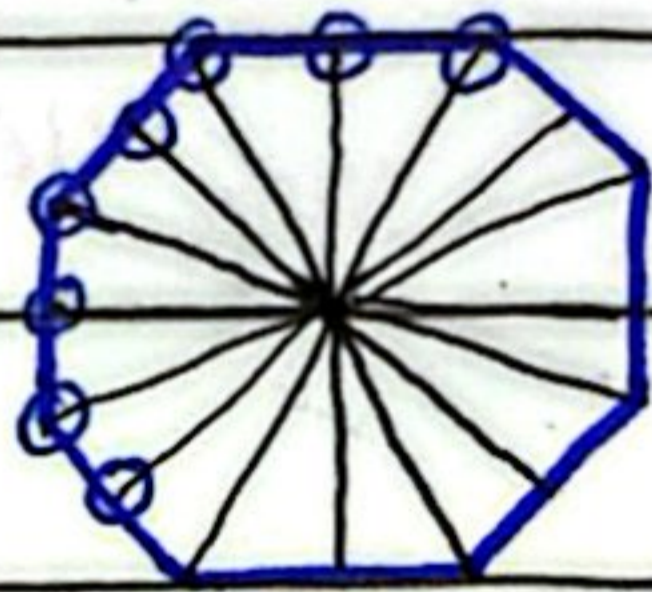


Line of symmetry of an octagon:-

. An octagon consists of eight sides and angles.

It has eight line of symmetry.

Four from each opposite side and four from midpoint of each opposite side.



Line of symmetry in a circle:-

Since, a circle is made up of infinite dots in its circumference so, it has infinite number of line of symmetry.

Part (d)

Given:-

$$\text{length} = 7\text{cm}$$

$$\text{width} = 5\text{cm}$$

$$h = 10\text{cm}$$

volume of pyramid = ?

Sol :-

The volume of pyramid = $\frac{1}{3} \times \text{Base Area} \times h$

$$= \frac{1}{3} \times (\text{Length} \times \text{width}) \times h$$

$$= \frac{1}{3} (7 \times 5) \times 10$$

$$= \frac{350}{3} = 116.67$$

volume of pyramid = 116.67 cm³

(Section-A)

(QNO.2)

Part (a)

Igneous rocks :-

Igneous rocks are formed by the cooling of molten lava or on the surface of earth or beneath the surface of earth.

Composition:-

Igneous rocks are mostly in the form of large or small crystals. It has the constituents of feldspar, mica etc.

It has two types:-

① Intrusive Igneous Rocks:-

It is formed by the slow cooling of magma beneath the surface of earth.

For example: Granite

② Extrusive Igneous Rocks:-

It is formed by the quick cooling of lava on the surface of earth resulting in small crystals:-

For example: Basalt

Metamorphic rocks:-

Metamorphic rocks are formed by the alteration of

existing metamorphic sedimentary or other metamorphic rocks under high pressure and temperature beneath the surface of earth.

Composition and texture :-

Its composition depends upon the composition of parent rocks. which it has layered or non layered in nature forming its two types.

Foliated metamorphic rocks :-

Foliated or layered metamorphic rocks are formed by the alignment of minerals under high pressure for example :- slate, schist.

Non-Foliated metamorphic rocks.

non foliated or non layered have no alignment of minerals.

For example :- marble.

Part 6

Smog :-

Smog is formed by the combination of smoke and fog.

This is a type of air pollution happens when smoky pollution and vehicle emissions interact with the sunlight.

Smog has harmful effects on the human health. Generally, it can cause respiratory problems, irritation in eyes and decreasing life cycle. As per the report of University of Chicago, the average life span has decreased by 7 years. In Lahore, life span is decreased by 3-5 years, while in Islamabad life span is decreased by 2-3 years. Smog is generally has two types.

- i) Classical smog
- ii) Photochemical smog.

Classical Smog:-

Classical smog is a London-type smog generally happens in the cold environment. It results by the interaction of sulphur dioxide like matter and moisture in atmosphere.

It is grayish haze and thick that reduces visibility.

1952 London smog incident is an example of classical smog.

Photochemical Smog:-

This type of smog generally happens in sunny environment by the interaction of sunlight with nitrogen oxides and volatile organic compounds produced by the vehicles.

It is typically yellowish brown in color.

Los-Angeles California generally experience this type of smog.

Part ①Risk management in DRM:-

DRM stands for Disaster Risk Management. It is important for understanding and assessing risk, preventing and mitigating risks, enhancing preparedness for effective response and creating resilience in communities and economic against disasters like floods, earthquakes, volcanic eruptions and wildfires etc.

The important points related to DRM are as following:-

Understand and assessing risk:-

By using systematic approach, DRM helps in understanding and assessing the upcoming risk and their severity.

Preventing and mitigating Risk:-

One of key aspect of DRM is reducing the potential severity of risk by creating hurdles in the

of risk such as building of walls in the way of flood or moisturing the areas where risk of wildfire.

Enhancing Preparedness and Response

If the disaster can't be protected, then creating disaster management plans and early warning to the stakeholders so the impact can be minimized as much as possible.

Promoting Resilience:-

Resilience is the key factor which refers to the ability of community to respond against the disasters and recover from the disaster. DRM helps in enhancing the resilience factors.

Hence, Risk assessment in DRM helps in creating and understanding risk, well response to the disaster and way forward to recover from the disaster.

Part (d)

Short sightedness :-

Short sightedness occurs when the eyeball is too long and cornea is too curved causing light to focus in front of retina.

Symptoms :-

Blurry visions for distance objects while clear vision for the short range objects.

Correction :-

Short sightedness can be corrected by using concave lens causing the light to focus it on the retina.

Laser surgery is also an option.

It is also called myopia.

Far sightedness :-

Far sightedness occurs when

the eye is too short and cornea is too flat causing the light to focus behind the retina.

Symptoms:-

The object near to the eye looks too blurry while the objects distant to the eye look clear.

Correction:-

Far sightedness can be corrected by using convex lens to focus the light on the retina instead of behind the retina.

Laser surgery is also an option.

Far sightedness is also called as hyperopia.

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(QNO.4)

Solar System :-

Solar system is a part of milky way galaxy. Sun is the center of ~~milky way~~ solar system. And the major components of solar systems are planets, satellites, asteroids ^{dwarf} and comets.

Planets:-

There are eight planets of solar system.

Inner Planets:-

These planets are mostly rocky in nature.

Mercury: Nearest planet and hottest one.

Venus: Venus is the second nearest planet and hottest one as well.

Earth: Earth is rocky in nature, moderate temperature and life existence.

Mars: Mars is also rocky and slightly cold.

Outer planets :- Outer planets are mostly icy giants

Jupiter: Jupiter is the largest planet.

Saturn: Saturn has rings around it.

Uranus: Uranus is icy ball and blue in color.

Neptune: Neptune is also icy ball and blue in color.

Dwarfs :-

Dwarfs are also giant like planets but don't have specific orbit such as Pluto.

Satellites :-

Satellites are the moons that take light from the sun and orbit around planets. eg. Earth has one moon.

Asteroid :-

Asteroid is a belt of

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of stones that have belt between saturn and jupiter. They might lose their belt - sometimes asteroids fall on earth.

Comets:-

Comets are the icy balls generally escape from surface of uranus or neptune. When they reach near sun they get vapourized.

These are the major components of solar system.

Part ③

Pituitary Gland:-

Pituitary gland is a type of gland which is pea shaped and lies under brain just below hypothalamus.

It generally helps in producing hormones and also stimulates the production of

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of other endocrine glands such as thyroid glands, adrenal glands and gonads (testes and ovaries).

Following are the important functions :-

Growth factor :-

The proper functioning of pituitary glands results in the proper growth of all parts of child.

Reproductive Health :-

It helps in properly regulating the oxytocin and anti diuretic hormones for the well reproductive health.

Stress control :-

By the proper functioning of thyroid and adrenal glands which secrete by help of pituitary gland stress control is possible.

Social Bonding :-

It helps in the social and emotional bonding of human.

Insufficient Production of Pituitary Gland :-

Insufficient product of pituitary gland leads to the under growth of organs of body.

Over production of Pituitary Gland :-

Over production of pituitary gland leads to the over growth of organs of body.

Part C

Ram

ROM

1) RAM stands for Random access memory

1) ROM stands for Read Only Memory

2) It generally controls the speed of the system.

2) It generally stores data only.

3) It helps the system start, application works

3) It stores the application and system data which can be accessed.

4) When RAM is full system can't work

4) When ROM is full system can still work

Nibble:-

Nibble is a digital unit which is generally 4 bits. (which is half of byte - 1 byte = 8 bits).

Nibble can store data in form of 0000 or 1111.

Nibble is mostly used in low type of programming.

USB :-

USB stands for (Universal Serial Bus).

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It is a portable unit which can store data in it.

It is mostly used in transferring the data from one system to another.

It can store data depending upon its storage as much as GBs to PB's.

Motherboard:

Mother Board is found in Central Processing Unit of PC.

It has chips and board which connects ram, rom and other chips to make system workable.
