Name: Naveed Ali
ID: 32359. ISB 08-59
Papers: GSA
DATE: 8/5/24

Page: 1

Good
Increase length
Keep length equal for all parts
Draw neat diagrams
Make maximum headings
Good for math work

Q.2: (a) Differentiate climate and environmental wind are the causes of air pollution in pakistan.

Climate:- Climate is a long-term pattern of weather condition in an area. It encompasses pattern like temperature, precipitation, humidity, and wind patterns. Climate change refers to certain changes in these long-term patterns, often driven by human activities like burning fossil fuels and deforestation which leads to global warming which impact the environment.

Environment:- The environment refers to the surrounding in which living organisms exist. Environment include biotic elements and abiotic elements. Many different gases are present in the environment. living organisms live in the ocean of atmosphere.

Causes of air pollution in pakistan:- Following are the various causes of air pollution.

(1) industrial emissions to air.
(2) Vehicle exhaust
(3) Agricultural practices.
(4) Biomass Burning
(5) Deforestation and urbanization.
(6) CFCs and carbon monoxide.

(b) Write a note on vitamins and their role in human body?

Ans: Vitamins:- Vitamins are organic food substance found only in living things. With a few exceptions human body cannot prepare vitamins. They must be supplied in diet or dietry supplements. vitamins are essential to the normal function of our body. vitamins are divided into two groups. ① Fat soluble vitamins

↳ Vitamin A, D, E and K.

② Water soluble vitamins

↳ Vitamin B and C.

our body can store fat soluble vitamins and use them when needed. Water soluble vitamins are not stored in human body.

Role of vitamins in human body:- Vitamin A is also called retinol due to their function in retina of the eye. This is fat solube vitamin. it also participate in the function of immune system, also helps in growth and reproduction.

Vitamin C also called ascorbic acid is water-soluble vitamin and cannot be stored in human body. it is needed for healthy growth of skin, nail and hairs. it also helps the body to make collagen, an important protein in the skin, cartilage, ligaments and blood vessels.

Vitamin D is fat soluble - vitamin. it aids in the absorption of calcium, helping to form and maintain strong bones. The major function of vitamin D is to maintain normal blood levels of calcium and phosphorus.

(c) compare goal of cop-27 and cop 28 on climate change?

cop 27: The goals and vision of cop27 are centered around four themes.

1) mitigation:- Egypt has argued that climate change should be mitigated by limiting global goals by limiting global warming well below 2 degree celsius and countries should work hard to keep the 1.5 degree target alive.

2) Adaptation:- cop27 should make crucially needed adaptation a global goal it should also enhance global agenda for action on adaptation.

(3) Finance:- Egypt has argued that it is essential that cop27 makes significant progress on the issue of climate finance while moving forward on all finance related items on the agenda.

(4) Collaboration:- Egypt has noted that UN negotiation are based on consensus and that reaching agreement would require active participation from all stakeholders. Egypt also argued that governments, the private sector and civil society needed to work together to transform the way in which we interact with our planet.

Goals of COP28:- COP28 would aim to address the climate change and its associated challenges. It's goals include.

(1) Strengthening the global commitments to reduce greenhouse gas emissions.

(2) Advancing the adaptation efforts to mitigate the impact of climate change

(3) Facilitating financial support for climate disaster in developing countries.

(4) Enhancing international cooperation on climate change.

(5) Fostering innovation and technology transfer to accelerate climate solution.

d) What are active and passive sensors? How they are used in GIS?

(1) Active sensors:- These sensors emit energy or signals and measure the response that is bounce back. For example: LiDar, radar and sonar. Active sensors are useful for acquiring data in various weather and lightening conditions.

In GIS, active sensors are commonly used for terrain mapping, vegetation analysis and infrastructure monitering.

Passive Sensors:- They detect and record natural energy that is reflected or emitted from the earth's surface. They relay on electromagnetic radiation, such as sunlight to capture data. In GIS passive sensors are widely used for land cover classification, urban planning, and environmental assessment.

P:5

Q:No:5. a) How cyclones are formed ? Discuss.

Ans:- Cyclones are known as hurricanes depending on thier location and are powerful trophical storms characterized by low pressure centers, strong winds and heavey rainfall. They form over warm ocean water near the equator and are powered by the heat and moisture from ocean. cyclone formation involves several stages.

① cyclones form over warm ocean water with surface Temperature above 26 °c. The warm water provides the necessary energy and moist-ure for the development of storm.

② Atmospheric instability often caused by temperature differences between the ocean surface and upper atmosphere, create favourable conditions for cyclone formation.

③ As the warm air rises it creates area of low pressure at the surface. Air from surrounding area fill that space. causing spiral inwards toward the center of the storm. once formed, cyclones can travel across vast distances, impacting coastlines with distructive winds, storm and heavey rainfall posing seagnificant risics to life and property.

b) Differentiate ionic and covalent bond.

Ans:- Ionic bond:- Ionic bond forms between the atoms when one or more electrons are transferred from one atom to another. This result in the formation of cation and anion which are

attracted to each other by electrostatic forces. Ionic bond form between atoms of different elements usually a metal and non-metal. In Ionic bond electrons are completely transfer from one atom to another to form ions. Ionic bonds are weaker than covalent bond. Compounds with ionic bond have high boiling and melting point. and are crystaline at room temperature.

Covalent bond:- covalent bonds are formed by the sharing of one or more electron to achieve stable electronic configuration..

Covalent bond usually form between atoms of same elements or between different non-metal elements In covalent bond electrons are shared between between atoms.

covalent bond are very strong depending on factors such as types of atoms involved and number of electron shared.

Compounds with covalent bond can exist in various physical states (solid, liquids or gases).

c) Give uses of Gamma rays, x-rays and Radio waves?

Ans:

Gamma rays:-

① Medical imaging:- Gamma rays are used in medical imaging Techniques such as Gamma rays tomography, Spectroscopy for detecting and diagnosing diseases especially in oncology.

② Radiation Therapy:- In this therapy radiations are used to destroy cancerous cells and shrink tumours.

③ Industrial Applications:- Gamma rays are used in industrial radiography to inspect welds and determine the integrity of structures like pipelines and aircraft components.

④ Sterilization:- Gamma rays are used to sterilize medical equipments, food products and packaging materials.

X-Rays:- ① Medical imaging:- X-rays are used in detecting fractures, Tumours and other abnormalities in bones Teeth and soft issues.

② Airport-security:- X-rays scanners are used in airport security system to screen luggage and cargo for prohibited items.

③ Industrial uses :- X-rays are used in industries for non-destructive testing (NDT) of materials, including material welds.

④ Research :- x-rays are used in scientific research, studying the properties of materials and investigating the biological structure of molecules.

Radio waves :- (1) Communication :- Radio waves are used for wireless communications including radio broadcasting, cellular phones, wifi networks etc.

② Radar system :- Radio waves are used in Radar system for tracking and detecting objects like aircrafts, ships and weather patterns.

③ Navigation :- Radio waves are used in navigation system such as GPS for precise location.

④ Remote sensing :- Radio waves are used in remote sensing applications, including weather monitoring, environment monitoring etc.

__/__/202 Day:_____

Q) d) What are tides ? write a note on LED.

Ans:- **Tides :-** Tides are the rise and fall of sea level caused by the gravitational forces exerted by the moon and sun. as well as the rotation of the earth. The gravitational pull of the moon is the primary driver of tides while the sun also contribute. There are two main types of tides.

(1) **High Tides :-** High tides occure when the gravitational pull of the moon and the sun causes water to bulge outward, result in a rise in sea level. There are two high tides and two low tides approximately every lunar day.

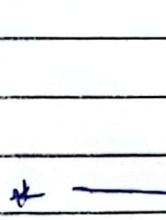
(2) **Low tides :-** Low tides occure when the gravitational forces of the moon and sun are less directly aligned with a particular location, causing water to recede and sea level to drop. Like high tides, low tides also occure roughly every 12 hours and 25 minutes.

Tides play an important role in shaping coastal ecosystem, influencing navigation and maritime activities.

__/__/202 Day:_____

What are LEDs?

Ans:- LEDs, or light emitting diodes are semiconductor devices that emits light when current is passed through them. They have advanced lightening technology with their energy efficiency, longetivity and versatility. Unlike traditional bulbs LEDs convert a higher percentage of electrical energy into light resulting in energy saving and lower electricity bills. they have longer lifespan lasting upto 25 times longer than ordinary bulbs. They come in various sizes, shapes and colors and brightness level. making them suitable for a wide range of applications, from residential and commercial lighting to automotive lighting and display.



Part II

__/__/202 Page: 11 Day:

Q.no: 8 a) write the formula of I.Q what are the factors which effect I.Q?

I.Q The formula of Intelligence Quotient is

$$IQ = \frac{\text{mental age}}{\text{chronological age}}$$

Several factors effect IQ, including genetics, environment, education, nutrition, socio-economic status, and access to resources and opportunities. Additionally, Factors like prenatal care, parenting style and exposure to toxins can also play a role.

b) Find the number of triangles in the below equilateral figure?

Ans:

there are seven Triangles in it.

c) A letter is choosen at random from the word "superintendent". what is the probability that word is vowel.

Ans: Letter choosed from the word superintendent

probability that the word is vowel.

$$P(E) = \frac{\text{Number of occurance}}{\text{Total possible outcome.}}$$

the word superintendent has 6 vowels.

u, e, i, e, e, a.

Total no: of words = 13.

$$\Rightarrow \frac{6}{13}^2 = \frac{2}{1}$$

a) Distribute money among zain, [illegible] ashraf....

Ans- To distribute Rs. 4320 among zain aslam, and ashraf according to given ratio.

Let the parts zain gets be (2x), Aslam gets (3x) and ashraf get (7x)

The total number of parts is (2x + 3x + 7x)

$\Rightarrow 12x$

So, $(12x = 4320)$.

Dividing both sides by 12.

$x = \frac{4320}{12} = 360.$

Now, zain gets (2x = 2 times 360 = 720 Rs)

Aslam gets 3x = 3 times 360 = 1080 Rs

Ashraf gets 7x = 7 time 360 = 2520 Rs.

Q.7:(a) A person multiplied a number by instead of 5/3...

Ans Let the number be 'x'

then according to the given data.

$$\frac{(5x/3 - 3x/5)}{5x/3} \times 100$$

$\Rightarrow 16/25 \times 100$

$\Rightarrow 64\%$

The Percentage error is 64%.

(b) If ratio of chocolates to ice cream cones in a box is 5:8 and the no: of chocolates is 30. Find ice cream cones)

Ans:- $\frac{\text{Number of chocolates}}{\text{Number of ice cream cones}} = \frac{5}{8}$.

Number of chocolates = 30

30 — 5/8

No: of ice cream cones

Cross multiplication

5 x No: of ice cream cones = 8 x 30

5 x No: of ice cream cones = 240.

Deviding B.H.S by 5:

No: of ice cream cones = 240/5 = 48.

c) A tablet contains 30 mg of medication. How many
e) tablets will be needed to provide Ms. Smith with 240 mg.

1 tablet = 30 mg.

240 mg = ?

8 x 30 mg = 240 mg.

There will be 8 tablets needed

To provide 240 mg dose to Mr Smith.

a) The average of 50 no: is 20. If two no: are 37 and 43
d) are discarded. What is the average of remaining numbers?

Ans: Average of 50 number = 20

Discarded no: = 37, 43

What is the average of remaining numbers

Total sum of 50 number = 50 x 20 = 1000

37, 43 are discarded, so we subtract

from the total sum.

100 - (37 + 43) ⇒ 1000 - 80 = 920.

→ Inle discarded two numbers

50 - 2 = 48.

⇒ Average = 920/48 = 19.17