Q. 1) Consider the following statements

1. The Taiga biome is devoid of trees, except for stunted plants.
2. The Savannah biome consists of grasses with scattered trees and fire-resistant thorny bushes.

Choose the correct code:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.1) Solution: (b)

Explanation:

- In the Tundra type of vegetation, the growth of natural vegetation is very limited.
- Only mosses, lichens, and very small shrubs are found here. It grows during the very short summer. This is called the Tundra type of vegetation.
- This vegetation is found in the polar areas of Europe, Asia, and North America.
- In the higher latitudes (50°-70°) of the Northern Hemisphere, Coniferous forests are found. These are also called Taiga. These forests are also seen at higher altitudes. **Hence, statement 1 is incorrect.**
- Tropical grasslands grow on either side of the equator and extend to the tropics.
- This vegetation grows in areas of moderate to low amounts of rainfall.
- They can grow very tall, about 3 to 4 metres in height.
- Savannah grasslands of Africa are of this type. Savannah shrubs are fire-resistant which helps them survive periodic, natural fires spread in forests. **Hence, statement 2 is correct.**

Q. 2) Consider the following statements regarding dissolved oxygen in an aquatic ecosystem

1. A snow coating of ice on water reduces the quantity of dissolved oxygen.
2. Its concentration in freshwater is typically greater than that of oxygen in the air.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.2) Solution: (a)

Explanation:

- Dissolved oxygen (DO) is defined as the amount of oxygen that is present in water.
- Adequate dissolved oxygen is crucial for all forms of life and is required for excellent water quality.
- Aquatic life is stressed when dissolved oxygen levels fall below 5.0 mg/L. Lower concentrations result in more stress.
- Snow cover doesn't allow the transfer of oxygen from the atmosphere.
- It also reduces the photosynthesis activities of aquatic plants. Thus, there is a reduction in dissolved oxygen concentration. **Hence, statement 1 is correct.**
- The solubility of oxygen decreases as temperature increases. Warm water also enhances the decomposer activity.
- There dissolved oxygen concentration decreases, not increases, with the increase in temperature of water-body.
- Its concentration in freshwater is usually 100 times less than the concentration of oxygen in the air. **Hence, statement 2 is incorrect.**

IASBABA

Q. 3) Consider the following statements

1. Eurythermal organisms are organisms that can tolerate a wide range of temperatures.
2. Stenothermal organisms are organisms that can tolerate only a narrow range of temperatures.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.3) Solution: (c)

Explanation:

- Eurythermal organisms are organisms that can tolerate a wide range of temperatures.
- For instance, cows, humans, monkeys, sheep, etc. **Hence, statement 1 is correct.**
- Stenothermal organisms are organisms that can tolerate a narrow range of temperatures.
- For instance, seals, salmons, and reptiles. **Hence, statement 2 is correct.**

Q. 4) Consider the following statements

1. The littoral zone has an abundance of aquatic plant and algae growth.
2. The profundal zone has an abundance of phytoplankton and zooplankton.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.4) Solution: (a)

Explanation:

- Each pond or lake has several different zones that divide the water column by depth and from the distance from the shoreline.
- The **Littoral Zone** is the shore area of the lake or pond.
- The littoral zone consists of the area from the dry land sloping to the open water and can be very narrow or very wide.
- Typically oligotrophic or young ponds have narrow littoral zones due to their steep sides and eutrophic or old ponds have wide littoral zones due to their gently sloping shoreline and sides.
- The littoral zone is shallow and gets a lot of nutrients from runoff and non-point source pollution. Therefore, it typically has an abundance of aquatic plant and algae growth.
- Some other common inhabitants of the littoral zone are cattails, reeds, crawfish, snails, insects, zooplankton, and small fish. **Hence, statement 1 is correct.**
- The **Limnetic Zone** is generally classified as the open water area of the lake or pond. This is a much larger section of water in oligotrophic or younger ponds and lakes than it is in eutrophic or older bodies of water.
- Within the limnetic zone are two separate sections. The upper portion of the limnetic zone near the surface of the water is the Euphotic Zone or Epilimnion (warm water region).
- This is the portion of water that receives sunlight. The zone ends where the sunlight fails to penetrate the water.
- The euphotic zone is where algae and other aquatic plants thrive (along with the littoral zone). Also, this is the typical area of dense fish populations because oxygen levels are typically higher due to contact with the air.
- The profundal zone is located below the thermocline where the sunlight does not penetrate.
- The size of this zone depends on the age and water clarity of the pond or lake.

- The profundal zone typically has lower fish populations because of the lack of oxygen during many parts of the year. **Hence, statement 2 is incorrect.**

Q. 5) Consider the following statements regarding algal blooms

1. They are always harmful to the aquatic ecosystem.
2. It can occur in freshwater as well as marine environments.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.5) Solution: (b)

Explanation:

- Algal blooms are commonly called red tides because many times, they turn water red. However, algal booms could be of other colours as well like green, blue, red, or brown.
- Not all algal blooms are harmful, some can be beneficial. Phytoplankton (Algae) are found at the base of the marine food chain, therefore, all other life in the ocean relies on phytoplankton. **Hence, statement 1 is incorrect.**
- Blooms can also be a good indicator of environmental change not only in the water but also on land.
- Algal blooms may occur in freshwater as well as marine environments. **Hence, statement 2 is correct.**

Q. 6) Which among the following best describes The Environmental Kuznets Curve?

a) It shows the relationship between economic progress and environmental degradation through time as an economy progresses.

b) It shows the relationship between the level of biodiversity in an area as the global warming intensifies.

c) It shows the relationship between the investment done by a nation in environmental sustainability and the output it gets in economic development.

d) It shows the relationship between the beta diversity of an area as compared to the forest laws of a nation.

Q.6) Solution: (a)

Explanation:

- The environmental Kuznets curve (EKC), shows the relationship between economic progress and environmental degradation through time as an economy progresses. It describes that as countries develop initially, pollution increases. But later, as the economy achieves further development, pollution decreases. Empirical studies show that usually environmental factors like water, air etc. shows this path for several coutnries. Following diagram shows that relationship between economic development and level of economic degradation.
- The curve is known after economist Simon Kuznets who made a well-known study about the relationship between inequality and economic development. In that study also, the relationship between inequality and economic development gives an inverted U shape; showing an increase in inequality first with economic development and then, inequality decreases with further development and per capita income.

Q. 7) Consider the following

1. Stilt roots
2. Vivipary
3. Pneumatophores
4. Wax -coated leathery leaves

Which of the following adaptations help mangrove plants to cope with their dynamic and harsh ecosystem?

a) 1 and 2
b) 2 and 3
c) 1, 2 and 3
d) 1, 2, 3 and 4

Q.7) Solution: (d)

Explanation:

- The mangrove environment is highly dynamic and harsh and mangrove species are variously adapted to cope with these environmental conditions.
- Saline water, unconsolidated saline soil with little or no oxygen is not a conducive environment for seeds to germinate and establish. To overcome this, mangrove species have a unique way of reproduction, which is generally known as vivipary whereby seeds germinate and develop into seedlings while the seeds are still attached to the parent tree. They are buoyant and float in the water for some time before rooting themselves on suitable soil.
- Lenticel glands, which are found in many mangroves, allow for the gaseous exchange between plants as well as the atmosphere. Some plants have wax-coated leathery leaves that prevent freshwater from evaporating through the leaves during transpiration.
- In some mangrove species, roots diverge from stems and branches and penetrate the soil some distance away from the main stem as in the case of banyan trees. Because of their appearance and because they provide the main physical support to these, they are called stilt roots. These roots also have many pores through which atmospheric oxygen enters into the roots.
- In a mangrove environment, oxygen in soil is very limited or nil. This necessitates the mangrove root system to take up oxygen from the atmosphere. For this purpose, mangrove species have specialized above-ground roots called breathing roots or

pneumatophores. These roots have numerous pores through which oxygen enters the underground tissues. **Hence, option d is correct.**

Q. 8) Consider the following statements about bioremediation

1. No toxic chemicals are used in this process.
2. It requires anaerobic conditions to be effective.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.8) Solution: (a)

Explanation:

- Bioremediation is a "treatment that uses naturally occurring organisms to break down hazardous substances into less toxic or nontoxic substances." It uses no chemicals. **Hence, statement 1 is correct.**
- One of the issues with using man-made chemicals in the treatment and removal of contamination is that the chemicals eventually make it into the water supply. It has no such issue.
- The major disadvantage of bioremediation is that its application is limited to those compounds that are biodegradable.
- Not all compounds are susceptible to complete and rapid degradation.
- Anaerobic conditions refer to an absence of free oxygen.
- Oxygen is required for the microbes to survive. Bioremediation is more effective in aerobic conditions. **Hence, statement 2 is incorrect.**

Q. 9) Which of the following adaptations is/are found in desert animals?

1. Short legs for fast and efficient running.
2. Aestivation during summer months.
3. Nocturnal in habit.

Choose the correct code:

a) 1 and 2
b) 2 and 3
c) 1 and 3
d) 1, 2 and 3

Q.9) Solution: (b)

Explanation:

- Many animals in the desert have long legs (ex. kangaroo) to run fast.
- It is often necessary to travel long distances for water and food; their speed helps them travel these distances quickly.
- For many of the desert animals speed is also crucial in escaping from predators.
- For example, most predators will not even attempt to catch the speedy desert jackrabbit. **Hence, statement 1 is incorrect.**
- Desert animals are very adept at obtaining water. Many eat plants filled with water.
- They often wait until nighttime to dine because this is when the water content is the highest in the plants.
- To protect themselves from the heat many desert animals, especially rodents, become inactive in the hot summer months.
- They enter a dormant state called aestivation, which reduces their metabolic rate to save them from intense heat.
- It is generally used by cold-blooded animals like frogs, crocodiles, etc. **Hence, statement 2 is correct.**
- To avoid the intense daytime heat, most desert animals are primarily active at night.

- Thus, they are nocturnal. **Hence, statement 3 is correct.**

Q. 10) Which of the following ecosystem can be considered an example of an Ecotone?

1. Grasslands
2. Estuaries
3. Marshes
4. Mangroves

Choose the correct code:

a) 2 and 3
b) 1, 2 and 4
c) 3 and 4
d) 1, 2, 3 and 4

Q.10) Solution: (d)

Explanation:

- An Ecotone describes an area that acts as a transition or boundary between two ecosystems.
- This could be, for example, an area of marshland between a river and the riverbank, a clearing within a forest, or a much larger area such as the transition between Arctic Tundra and Forest biomes in Northern Siberia.
- As this area is inevitably influenced by the two bordering ecosystems, it is, therefore, a consequence of this that a higher density of organisms and a variety of species can be found within an Ecotone. This increase in biodiversity is referred to as the "edge effect".
- An Ecotone can be formed naturally – through abiotic factors such as changes in soil composition – but can also be created through the result of human interaction by clearing of forest areas or irrigation are examples of this.
- Examples of Ecotone ecosystems are Mangroves, Estuaries, Marshes, Grasslands, etc. **Hence, option d is correct.**

Q. 11) Consider the following statements about photoperiodism

1. It is the ability of plants to lose water through their vascular system.
2. It can be best studied in flowering plants.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.11) Solution: (b)

Explanation:

- 'Photo' means 'light' and 'period' means 'length of time'.
- Photoperiodism is the reaction of plants and animals to the length of day and night. **Hence, statement 1 is incorrect.**
- Most flowering plants have the ability to sense changes in season (i.e. the length of day and night) and flower at the right time.
- To do this, they make use of photoreceptor (light-sensitive) proteins called 'phytochrome'.
- Plants need exposure to light for a 'critical duration'. This duration is different for different plants. **Hence, statement 2 is correct.**

Q. 12) Consider the following statements

1. Peripatric Speciation occurs when a small group of individuals separate from a larger group and form new species.
2. Allopatric Speciation occurs when a part of an environment has been polluted.
3. Sympatric Speciation occurs when there are no physical barriers to prevent any members of a species from mating with one another.

Choose the correct code:

a) 1 and 2
b) 2 and 3
c) 1 and 3
d) 1, 2 and 3

Q.12) Solution: (c)

Explanation:

- Peripatric Speciation occurs when a small group of individuals separate from a larger group and form new species.
- It is the mode of species formation in which speciation occurs from an isolated peripheral population.
- In this type of speciation genetic drift plays an important role. **Hence, statement 1 is correct.**
- When a species is separated into two groups that are separate and isolated from one another, the type of speciation is known as allopatric speciation.
- This type of speciation occurs if any geographical changes occur.
- The geographical changes may include the formation of mountains by volcanoes, the formation of an island, human activities leading to habitat fragmentation, glaciers and rivers causing habitat separation, and so on.
- When a part of an environment has been polluted, the type of speciation that occurs is known as parapatric speciation.
- Polluted environments include mining activities that leave waste with high amounts of metal such as lead and zinc. **Hence, statement 2 is incorrect.**
- Sympatric Speciation occurs when there are no physical barriers to prevent any members of a species from mating with one another.
- All members are in close proximity to one another in this type of speciation.
- This type of speciation is common in herbivore insects when a new plant is introduced into a geographical range of species. **Hence, statement 3 is correct.**

Q. 13) Consider the following statements

1. Neelakurinji species are endemic to the Shola Forest of Western Ghats.
2. Kerala's **Paliyan** tribe uses the Neelakurinji flowers to calculate age.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.13) Solution: (a)

Explanation:

- Neelakurinji species are endemic to the Shola Forest of Western Ghats.
- Flower Bloom takes place once in 12 years as the pollination of flowers needs a longer period.
- It bloomed for the last time in 2006. The next bloom was expected to happen in 2018, but because of forest fires, Neelakurinji was not seen that year. In Neelakurinji, 'Neela' means blue, and 'Kurinji' refers to the flowers.
- At maturity, the light blue color of the flowers changes to purple-bluish.
- The flowers give the 'Nilgiri Mountain Range' its name. **Hence, statement 1 is correct.**
- Tamil Nadu's **Paliyan** tribe uses the Neelakurinji flowers to calculate age.
- Its scientific name is Strobilanthes Kunthiana.
- The plant is named after the famous Kunthi River which flows through Kerala's Silent Valley National Park, where the plant occurs abundantly
- It usually grows at an elevation of 1,300-2,400m. **Hence, statement 2 is incorrect.**

Q. 14) Consider the following statements about peatlands

1. They are a type of wetlands.
2. They are critical in minimising flood risk.

3. It **covers 30% of the global land surface.**

Choose the correct code:

a) 1 and 2

b) 2 and 3

c) 1 and 3

d) 1, 2 and 3

Q.14) Solution: (a)

Explanation:

- Peatlands are a type of wetlands. It refers to the peat soil and the wetland habitat growing on its surface.

  In some areas, year-round waterlogged conditions slow the process of plant decomposition to such an extent that dead plants accumulate to form peat. Over millennia this material builds up and becomes several metres thick. **Hence, statement 1 is correct.**
- Peatlands are critical for preserving global biodiversity, providing safe drinking water, minimise flood risk and help address climate change.
- Peatlands are the largest natural terrestrial carbon store; the area covered by near natural peatlands worldwide (>3 million km2) sequesters 0.37 gigatonnes of carbon dioxide (CO2) a year – storing more carbon than all other vegetation types in the world combined. **Hence, statement 2 is correct.**
- Peatlands occur in almost every country on Earth, currently covering 3% of the global land surface.
- In 2017, the world's largest tropical peatland was discovered beneath the forests of the Congo Basin. **Hence, statement 3 is incorrect.**

Q. 15) Consider the following statements about Natural Capital Accounting (NCA)

1. It provides a systematic way to measure and report on stocks and flows of natural capital.
2. It covers accounting for only individual biotic environmental assets.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.15) Solution: (a)

Explanation:

- Natural Capital Accounting (NCA) is an umbrella term covering efforts to make use of an accounting framework to provide a systematic way to measure and report on stocks and flows of natural capital.
- Natural capital is another term for the stock of renewable and non-renewable resources that combine to yield a flow of benefits to people. **Hence, statement 1 is correct.**
- NCA covers accounting for individual environmental assets or resources, both biotic and abiotic (such as water, minerals, energy, timber, and fish), as well as accounting for ecosystem assets (e.g. forests; wetlands), biodiversity and ecosystem services, in both physical and monetary terms. **Hence, statement 2 is incorrect.**

Q. 16) Consider the following statements about the Koronivia Joint Work on Agriculture (KJWA)

1. It was established by the Food and Agriculture Organization.
2. It recognizes the unique potential of agriculture in tackling climate change.

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.16) Solution: (b)

Explanation:

- The Koronivia Joint Work on Agriculture (KJWA) was established at the 23rd Conference of the Parties (COP) in Fiji in 2017 as a new process to advance discussions on agriculture in the United Nations Framework Convention on Climate Change (UNFCCC). **Hence, statement 1 is incorrect.**
- The Koronivia Joint Work on Agriculture (KJWA) is a landmark decision recognizing the unique potential of agriculture in tackling climate change.
- The decision focussed on six topics: Soils, nutrient use, water, livestock, methods for assessing adaptation, and the socio-economic and food security dimensions of climate change across the agricultural sectors. **Hence, statement 2 is correct.**
- India has strongly opposed the KJWA by terming the agricultural emissions as "survival" emissions of the poor and not "luxury" emissions.
- India has held the developed countries responsible for the historical methane emissions and called them out for searching for cheaper solutions in the developing countries.

Q. 17) Consider the following statements about the United Nations Environment Programme (UNEP)

1. It is governed by the United Nations Environment Assembly (UNEA).
2. It is headquartered in Geneva, Switzerland.
3. It publishes Global Environment Outlook and Invest into Healthy Planet.

Choose the correct code:

a) 1 and 2

b) 2 and 3

c) 1 and 3

d) 1, 2 and 3

Q.17) Solution: (c)

Explanation:

- The **United Nations Environment Programme (UNEP)** is a leading global environmental authority established on 5th June 1972.
- It sets the global environmental agenda, promotes sustainable development within the United Nations system, and serves as an authoritative advocate for global environment protection.
- The United Nations Environment Assembly (UNEA) is the governing body of the UN Environment Programme.
- It is the world's highest-level decision-making body on the environment.
- It meets biennially to set priorities for global environmental policies and develop international environmental law.
- It was created in June 2012, during the United Nations Conference on Sustainable Development, also referred to as RIO+20. **Hence, statement 1 is correct.**
- It is headquartered in Nairobi, Kenya. **Hence, statement 2 is incorrect.**
- It publishes reports such as Emission Gap Report, Adaptation Gap Report, Global Environment Outlook, Frontiers, and Invest into Healthy Planet. **Hence, statement 3 is correct.**
- Its major campaigns include Beat Pollution, UN75, World Environment Day, and Wild for Life.

Q. 18) Consider the following statements about the epipelagic zone of the ocean

1. This zone extends from 1,000 meters down to 4,000 meters.
2. It is known as the twilight zone or the midwater zone**.**

Which of the statements given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.18) Solution: (d)

Explanation:

- Scientists have divided the ocean into five main layers. These layers, known as "zones", extend from the surface to the most extreme depths.
- Bathypelagic Zone extends from 1,000 meters down to 4,000 meters.
- It is sometimes referred to as the midnight zone or the dark zone.
- The surface layer of the ocean is known as the epipelagic zone.
- It extends from the surface to 200 meters.
- It is also known as the sunlight zone because this is where most of the visible light exists. **Hence, statement 1 is incorrect.**
- Below the epipelagic zone is the mesopelagic zone, extending from 200 meters to 1,000 meters.
- The mesopelagic zone is sometimes referred to as the twilight zone or the midwater zone. **Hence, statement 2 is incorrect.**
- The light that penetrates to this depth is extremely faint.
- Bioluminescent creatures (visible light produced by the creatures themselves) start appearing in this zone.
- Abyssopelagic Zone is also known as the abyssal zone or simply as the abyss.
- It extends from 4,000 meters to 6,000 meters.
- The water temperature is near freezing, and there is no light at all.
- Hadalpelagic Zone extends from 6,000 meters to the bottom of the deepest parts of the ocean.

- These areas are mostly found in deep water trenches and canyons.
- The deepest point in the ocean is located in the Mariana Trench off the coast of Japan 10,911 meters.
- The temperature of the water is just above freezing, and the pressure is 800 times that on the surface.
- Despite the pressure and temperature, life can still be found here.

Q. 19) Consider the following statements

1. They store carbon within their plant communities and soil.
2. They function as natural barriers to rain, snowmelt, groundwater, and flood waters.

Which of the following given above are the functions provided by a wetland?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.19) Solution: (c)

Explanation:

- Wetlands are areas where water is the primary factor controlling the environment and the associated plant and animal life.
- They occur where the water table is at or near the surface of the land, or where the land is covered by water.
- Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, and high levels of nutrients is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish, and insects.

- Wetlands' microbes, plants, and wildlife are part of global cycles for water, nitrogen, and sulphur. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide. **Hence, statement 1 is correct.**
- Wetlands function as natural barriers that trap and slowly release surface water, rain, snowmelt, groundwater, and flood waters. Wetland vegetation also slows the speed of flood waters lowering flood heights and reducing soil erosion. **Hence, statement 2 is correct.**
- Wetlands are critical to human and planet life. More than one billion people depend on them for a living and 40% of the world's species live and breed in wetlands.
- Wetlands are a vital source of food, raw materials, genetic resources for medicines, and hydropower.
- They play an important role in transport, tourism, and the cultural and spiritual well-being of people.
- They provide habitat for animals and plants and many contain a wide diversity of life, supporting plants and animals that are found nowhere else.
- Many wetlands are areas of natural beauty and promote tourism and many are important to Aboriginal people.
- Wetlands also provide important benefits for industry. For example, they form nurseries for fish and other freshwater and marine life and are critical to commercial and recreational fishing industries.

Q. 20) Recently in the news, Lisbon Declaration is related to

a) Air pollution
b) Marine pollution
c) Space pollution
d) Noise pollution

Q.20) Solution: (b)

Explanation:

- The UN (United Nations) Ocean Conference 2022 was held to ensure global cooperation toward the protection and sustenance of the Ocean ecosystem of the world.
- The conference was co-hosted by the Governments of Kenya and Portugal.
- The UN Ocean Conference 2022 is aligned to SDG (Sustainable Development Goals) 14 'life below water' and stresses the critical need for scientific knowledge and marine technology to build ocean resilience.
- Lisbon Declaration agreed to work on preventing, reducing, and controlling marine pollution. It includes:
  - ✓ Nutrient pollution
  - ✓ Untreated wastewater
  - ✓ Solid waste discharges
  - ✓ Hazardous substances
  - ✓ Emissions from the maritime sector, including shipping, shipwrecks
  - ✓ Anthropogenic underwater noise

  Hence option b is correct.

Q.21) Consider the following statements about 'SWAMIH Fund'

1. It is India's largest social impact fund specifically formed for greenfield residential projects

2. The Fund is sponsored by the Ministry of Housing and Urban Affairs

Select the correct statements

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Q.21) Solution (d)

Explanation:

- The Special Window for Affordable and Mid-Income Housing (SWAMIH) Investment Fund is **India's largest social impact fund specifically formed for completing stressed and stalled residential projects (brownfield residential projects)**. **Statement 1 is incorrect**
- The **Fund is sponsored by the Ministry of Finance, Government of India, and is managed by SBICAP Ventures Ltd**., a State Bank Group company. **Statement 2 is incorrect**

Source: CLICK HERE

Q.22) Consider the following statements about United Nations High Seas Treaty

1. It is a legally binding treaty to protect marine life in international waters.
2. It aims to place 50% of the seas into protected areas by 2030.
3. The treaty includes a pledge by signatories to share ocean resources.
4. The treaty is negotiated under the auspices of UN Environment Assembly

Choose the correct statements:

a) 1 and 3

b) 2 and 4

c) 2 and 3

d) 1 and 4

Q.22) Solution (a)

Explanation:

- It is a **legally binding treaty to protect marine life in international waters**. It is the first-ever treaty to protect the world's oceans that lie outside national boundaries. **Statement 1 is correct**
- It aims to **place 30% of the seas into protected areas by 2030** (a pledge made by countries at the UN biodiversity conference in 2022). **Statement 2 is incorrect**
- It will provide a **legal framework for establishing vast marine protected areas (MPAs**) to protect against the loss of wildlife and **share out the genetic resources of the high seas**. **Statement 3 is correct**
- The treaty is **negotiated under the United Nations Convention on Laws of the Sea (UNCLOS) of 1982** which governs the rights of countries regarding marine resources. **Statement 4 is incorrect**

Source: CLICK HERE

Q.23) Consider the following statements about Bio-computers

1. Brain organoids developed in the lab using 3D cultures of brain tissue will be combined with modern computing methods to create bio computers.
2. Brain organoids can also be developed using stem cells from individuals with cognitive disorders

Select the correct statement(s)

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Q.23) Solution (c)

Explanation:

- **Brain organoids are 3D cultures of brain tissue developed** in the lab. They are used to study human brain development and test drugs to see how they respond. Bio computers – **The brain organoids will be combined with modern computing methods to create bio computers**. **Statement 1 is correct**
- Brain organoids can also be **developed using stem cells from individuals with neurodegenerative diseases or cognitive disorders**. They could also help decode the pathology of and drug development for devastating Parkinson's disease and microcephaly. **Statement 2 is correct**

Source: CLICK HERE

Q.24) Consider the following statements about 'Abhra Weapon System'

1. It is a Medium Range Surface to Air Missile.
2. It is a high response vertically launched supersonic missile.
3. It is a joint venture of DRDO and Russia's Almez-Antey corporation

Choose the correct answer using the code given below

a) 1 only

b) 1 and 2

c) 1, 2 and 3

d) 3 only

Q.24) Solution (b)

Explanation:

- Abhra' Weapon System is a state-of-the-art medium-range air defence weapon system. It consists of **Medium Range Surface-to-Air Missile**. **Statement 1 is correct**
- It is a **high response, quick reaction, vertically launched supersonic missile**, designed to neutralize enemy aerial threats – missiles, aircraft, guided bombs, helicopters. **Statement 2 is correct**
- It is a joint venture of **DRDO and Israeli Aerospace Industries (IAI)** and is produced at Bharat Dynamics Limited (BDL). **Statement 3 is incorrect**

Source: CLICK HERE

Q.25) World Happiness Report 2023, recently seen in news is released by?

a) United Nations Sustainable Development Solutions Network

b) United Nations Development Programme

c) World Bank

d) United Nations Educational, Scientific and Cultural Organization

Q.25) Solution (a)

Explanation:

World Happiness Report 2023 is an annual publication of the **United Nations Sustainable Development Solutions Network (SDSN).** It is based on global survey data from people in more than 150 countries. It is based on people's own assessment of their happiness, as well as economic and social data. The report considers six key factors: social support, income, health, freedom, generosity, and absence of corruption.

Source: CLICK HERE

Q.26) The cost price of goods, for a shopkeeper, was X. He marked them at 15% above the cost price. Finally, he sold the goods at a discount of 25%. What is his profit/loss percentage?

a) 13% Loss

b) 12% Profit

c) 13.5% Profit

d) 13.75% Loss

Q.26) Solution (d)

Explanation:

Cost price of goods = x

Marked price = x (115/100) = 1.15x

Discount = 25%

Selling price = 1.15x (75/100) = 0.8625x

Loss = x - 0.8625x = 0.1375x

Loss% = (0.1375x/x)*100 = 13.75%

Q.27) A man wanted to sell his bat at a discount of 8%. His brother who was a cricketer wanted to buy the bat, so the man sells it at a discount of 10%. In this deal, the man reduces Rs.70 in profit. What was the marked price of the bat?

a) Rs.3,000

b) Rs.3,500

c) Rs.2,500

d) Rs.3,200

Q.27) Solution (b)

Explanation:

Let the marked price of the bat be 100%.

Profit reduced = Rs.70

Man reduces profit because of increase in the discount.

Difference in discount = 70

10% - 8% = 70

Marked price (100%) = (70/2)100 = Rs.3, 500

Hence, option b is the correct answer.

Q.28) Raman buys rice at ₹ 10/kg and puts a price tag on it so as to earn a profit of 20%. However, his faulty balance shows 1000gm when it is actually 800gm. What is his actual gain percentage?

a) 50%
b) 10%
c) 0%
d) 25%

Q.28) Solution (a)

Explanation:

He would be selling 800 gm for 12 rupees since a kg cost ₹10 (20%)

800 gm of rice costs ₹8

So, gain percentage = 12/8 = 1.5 = 50%

Q.29) Akshay sells it to Babu goods at five-thirds the rate of profit at which Babu has decided to sell it to Charan. Charan, on the other hand, sells it to Dev at one-third the rate of profit at which Babu sold it to Charan. If Dev gives ₹2145 to Charan at 10% profit, how much did Akshay buy it for?

a) ₹1000
b) ₹2000
c) ₹1500
d) ₹1800

Q.29) Solution (a)

Explanation:

Charan's purchase price = 2145 * 10/11 = 1950

Bharat's rate of profit is 3 times C's rate of profit.

Hence, Bharat sells it to Charan at 30% profit

Bharat's price + 30% profit = 1950(Charan's price)

Hence, Bharat's price = 1500

Further, since Akshay's profit rate is 5/3 times the rate of profit of Bharat,

Akshay's profit percent would be 30 * (5/3) = 50%

Thus, Akshay's price + 50% profit = 1500 (Bharat's price)

Akshay's bought it for ₹1000

Read the following passage and answer the questions that follow each passage. Your answer to these questions should be based on passage only.

Passage

The search for some kind of position-independent understanding of the world is central to the ethical illumination that may be sought in a non-relational approach. When Mary Wollstonecraft pilloried Edmund Burke for his support of the American Revolution without taking any interest in the status of the slaves, as if the freedom that he supported for white American people need not apply to its black slaves, Wollstonecraft was arguing for a Universalist perspective that would overcome positional prejudice and sectional favoritism. The point there is not positional comprehension, but some kind of a trans-positional understanding.

Even when a position-independent view is appropriate for an epistemological, ethical or political assessment, the reality of position dependence of observations may have to be taken into account in explaining the difficulty of achieving a positionally unbiased comprehension. The hold of positional perspectives can have an important role in making it hard for people to transcend their positionally limited visions. For example, in a society that has a long-established tradition of relegating women to a subordinate position, the cultural norm of focusing on some alleged features of women's supposed inferiority may be so strong that it may require considerable independence of mind to interpret those features differently. If there are, for instance, very few women scientists in a society that does not encourage women to study science, the observed feature of paucity of successful women scientists may itself serve as a barrier to understanding that women may be really just as good at science, and that even with the same native talents and aptitudes to pursue the subject, women may rarely excel in science precisely because of a lack of opportunity or encouragement to undertake the appropriate education.

The observation that there are few women scientists in a particular society may not be at all mistaken, even when the conclusion that women are no good at science – when drawn from that positional observation – would be entirely erroneous. Observations from other societies where women have more opportunities could confirm that women have the ability to do just as well as men in the pursuit of science, given the necessary opportunities and facilities.

When the confines of local beliefs are strong and difficult to overcome, there can be a steadfast refusal to see that a real inequity is involved in the way women are treated in their own society, and many women are themselves led to a belief about women's alleged intellectual inferiority based on the supposed 'evidence of the eyes', drawing on a faulty reading of local observations within a stratified society. In explaining the protest-free tolerance of social asymmetry and discrimination that can be seen in many traditionalist societies, the idea of positional objectivity has something of a scientific contribution to make, in giving us an insight into the genesis of an illegitimate application of positional comprehension (when the need is for a trans positional understanding).

The important notion of 'objective illusion', used in Marxian philosophy, can also be helpfully interpreted in terms of positional objectivity. An objective illusion, thus interpreted, is a positionally objective belief that is, in fact, mistaken in terms of trans-positional scrutiny. The concept of an objective illusion invokes both the idea of positionally objective belief, and the trans-positional diagnosis that this belief is, in fact, mistaken.

Q.30) Which of the following could not take the place of the words "Universalist Perspective"?

a) Viewpoint irrespective of class, gender, race, community, or generation
b) Position that is in a different order or place
c) Omnipotent belief and attitude
d) All-encompassing scrutiny

Q.30) Solution (c)

Explanation:

From the passage we can infer that Mary Wollencraft ridicules Edmund Burke because he supports the American Revolution but does so from the white man's perspective. Burke is not concerned with the slaves according to Wollencraft, who states that we need to move away from

positional prejudice or preconception and sectional favoritism towards trans-positional understanding.

Hence option a, b and d can take the place of Universalist Perspective. Omnipotent is all powerful and there is no mention of a powerful belief or attitude. It's more like a superior belief or attitude.

IASBABA