

- Q1** The Shanti Swarup Bhatnagar Award is given in India for contribution to the field of:
 (A) Literature
 (B) Social work
 (C) Science and Technology
 (D) Sports
- Q2** Which among the following is a nuclear powered submarine of Indian Navy?
 (A) INS Shalki
 (B) INS Shishumar
 (C) INS Sindhuvir
 (D) INS Chakra
- Q3** Which DRDO developed anti tank missile is capable of being launched from helicopter?
 (A) SANT Missile
 (B) Helina
 (C) Nag Missile
 (D) Amogha
- Q4** Which is an indigenously launched Covid Vaccine?
 (A) Sputnik
 (B) Pfizer
 (C) Covaxin
 (D) AstraZeneca
- Q5** Asad Ali Khan is associated with which among the following musical instruments?
 (A) Rudra veena (B) Tabla
 (C) Sitar (D) Shehnai
- Q6** With which country India has recently signed a Project Agreement (PA) for Air-Launched Unmanned Aerial Vehicle?
 (A) Canada
 (B) Russia
 (C) United Kingdom
 (D) United States
- Q7** Who among the following started the newspaper 'Bahishkrit Bharat'?
 (A) Jyotiba Phule
 (B) M. K. Gandhi
 (C) Dr. B. R. Ambedkar
 (D) Maulana Abdul Kalam Azad
- Q8** The reign of Raja Krishnadev Raya is considered the golden age of which literary language?
 (A) Telugu
 (B) Hindi
 (C) Tamil
 (D) Malayalam
- Q9** Who wrote 'Why I am an Atheist'?
 (A) Khushwant Singh
 (B) Subhash Chandra Bose
 (C) Madan Lal Dhingra
 (D) Bhagat Singh
- Q10** Supernova is
 (A) A black hole
 (B) An asteroid
 (C) A comet
 (D) A dying star
- Q11** With reference to the office of the Attorney General of India, Which of the following statements is/are correct?
 I. He is the highest law officer in the country.
 II. In the performance of his official duties, the Attorney General has the right of audience in all courts in the territory of India.
 (A) II only
 (B) I only
 (C) Both I and II
 (D) Neither I nor II
- Q12** Who among the following won the Gold medal in 2020 Paralympics in Javelin Throw?
 (A) Sumit Antil
 (B) Rameshwar Choudhary
 (C) Neeraj Chopra



(D) Piyush Khanna

Q13 "Global Competitiveness Report" is released by which of the following organization?

- (A) SAARC (B) WEF
(C) WTO (D) EU

Q14 The most commonly used semiconductor element is

- (A) Cu (B) A
(C) C (D) Si

Q15 Which among the following is a non-natural green house gas?

- (A) Ozone
(B) Carbon dioxide
(C) Water Vapours
(D) Nitrogen trifluoride

Q16 Match List I with List II and select the correct answer using the code given below:

List I (Grasslands)	List II (Region)
1. Prairies	I. South America
2. downs	II. australia
3. Llanos	III. USA
4. Pampas	IV. Venezuela

- (A) 1-I, 2-II, 3-IV, 4-III
(B) 1-III, 2-IV, 3-I, 4-II
(C) 1-III, 2-II, 3-IV, 4-I
(D) 1-IV, 2-III, 3-I, 4-II

Q17 Which one among the following substances does not contribute to global warming?

- (A) Methane
(B) Oxides of Sulphur and Nitrogen
(C) Carbon dioxide
(D) Water vapour

Q18 Match List I with List II and select the correct answer using the code given below:

List I (Name of Operation)	List II (Related to)
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I. Operation Nistar	A. Rescue operation in Yemen
II. Operation Pawan	B. Control of Jaffna peninsula
III. Operation Trident	C. Indo-Pak Navy 1971 War
IV. Operation Brasstacks	D. 1986 Joint military exercise

- (A) I-D, II-C, III-B, IV-A
(B) I-B, II-A, III-D, IV-C
(C) I-B, II-A, III-C, IV-D
(D) I-A, II-B, III-C, IV-D

Q19 Which of the following is a short range surface to surface missile?

- (A) TRISHUL (B) PRITHVI
(C) AKASH (D) NAG

Q20 The first city to initiate a flood early warning system in India is

- (A) Lucknow (B) Mumbai
(C) Chennai (D) Kolkata

Q21 With reference to the PM CARES Fund, consider the following statements:

- I. The amount collected by it directly goes to the Consolidated Fund of India.
II. It can avail donations from the foreign contribution and donations to fund can also avail 100% tax exemption.

Which of the above statements is/are correct?

- (A) I only
(B) II only
(C) Both I and II
(D) Neither I nor II

Q22 Which among the following factors contributes to Earthquake?

1. Location
2. Distance from the epicentre
3. Local geological conditions



Select the correct answer from the code given below.

- (A) 2 and 3 only (B) 1 and 2 only
(C) 1 and 3 only (D) 1, 2, and 3

Q23 Which among the following factors does not contribute to Earthquakes?

- (A) Distance from the epicentre
(B) Location
(C) Rate of Evaporation
(D) Local geological conditions

Q24 Given below are two statements, one is labeled as Assertion(A) and the other is labeled as Reason(R).

Assertion(A): The Portuguese were the first European community to discover a direct sea route to India.

Reason(R): The Turks started levying too many

taxes on the goods passing through the routes of trade and commerce between Asia and Europe.

Choose the most appropriate answer.

- (A) A is true, but R is false
(B) A is false, but R is true.
(C) Both A and R are true and R is the correct explanation of A
(D) Both A and R are true, but R is not the correct explanation of A.

Q25 When we jump out of a boat, the boat moves in the opposite direction. This is due to:

- (A) Newton's First Law of Motion
(B) The fact that the net force acting on the boat is to be zero
(C) Newton's Third Law of Motion
(D) Newton's Second Law of Motion



Answer Key

Q1 C
Q2 D
Q3 B
Q4 C
Q5 A
Q6 D
Q7 C
Q8 A
Q9 D
Q10 D
Q11 C
Q12 A
Q13 B

Q14 D
Q15 D
Q16 C
Q17 B
Q18 D
Q19 B
Q20 D
Q21 B
Q22 D
Q23 C
Q24 C
Q25 C



Hints & Solutions

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Q1 Text Solution:

Explanation:

The Shanti Swarup Bhatnagar Prize for **Science and Technology** is one of the most prestigious scientific awards in India. Here are some key points about the award:

1. **Establishment:** The award was established in 1958 in honor of Dr. Shanti Swarup Bhatnagar, a renowned Indian scientist, educationist, and the founder-director of the Council of Scientific and Industrial Research (CSIR).
2. **Objective:** The primary objective of the Shanti Swarup Bhatnagar Awards is to recognize outstanding contributions to various fields of science and technology.
3. **Fields:** The award covers several disciplines, including Biological Sciences, Chemical Sciences, Earth, Atmosphere, Ocean, and Planetary Sciences, Engineering Sciences, Mathematical Sciences, Medical Sciences, and Physical Sciences.
4. **Eligibility:** The awards are given to individuals below the age of 45 for their notable and exceptional research work.
5. **Selection Process:** The selection process involves a rigorous evaluation of the nominees by expert committees in each discipline. The committees consider the impact and significance of the candidates' contributions to their respective fields.
6. **Prize:** The awardees receive a citation, a plaque, and a cash prize. The award not only recognizes their past accomplishments but also encourages them to continue their outstanding work.
7. **Presentation:** The awards are presented annually in a ceremony held in New

Delhi, usually by the Prime Minister of India.

8. **Significance:** Considered the highest multidisciplinary science award in India, the Shanti Swarup Bhatnagar Prize is highly esteemed in the scientific community and serves as a significant recognition of excellence in scientific research and innovation.

Hence, the correct answer is option (C).

Q2 Text Solution:

Explanation:

- **INS Chakra** refers to the **nuclear-powered submarine operated by the Indian Navy**.
- It's worth noting that India has leased nuclear-powered submarines from Russia under the name INS Chakra.
- The INS Chakra is part of a series of submarines that India has acquired from Russia over the years.
- These submarines are typically of the Akula-class, a class of nuclear-powered attack submarines developed and constructed by the Soviet Union and later Russia.
- The lease agreements allow India to operate these submarines for a specified period.
- It's important to check for the latest information from official sources, as the status and details of naval vessels, including submarines, can change over time.
- The Indian Navy periodically upgrades its fleet, and new submarines may be inducted or leased as part of modernization efforts.



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Hence, the correct answer is option (D).

Q3 Text Solution:

Explanation:

- The DRDO (Defence Research and Development Organization) developed anti-tank missile capable of being launched from a helicopter is the **Helina (HELicopter-launched NAg)**.
- Helina is a third-generation, fire-and-forget, anti-tank guided missile designed to be launched from helicopters.
- Key features of Helina include:
 1. **Fire-and-Forget Capability:** Helina is equipped with an infrared imaging seeker that allows it to lock onto and track targets independently, eliminating the need for continuous guidance from the launch platform.
 2. **Range:** The missile has a range of over 7 kilometers.
 3. **Versatility:** Helina is designed for use with various rotary-wing platforms, enhancing the anti-tank capabilities of the Indian Armed Forces.

Hence, the correct answer is option (B).

Q4 Text Solution:

Explanation:

1. **Covaxin:** Covaxin is an indigenously developed COVID-19 vaccine produced by **Bharat Biotech**, an Indian biotechnology company. It was developed in collaboration with the Indian Council of Medical Research (ICMR) and the National Institute of Virology (NIV). Covaxin is an inactivated virus vaccine, and it received emergency use authorization in India.

The other options are not indigenously developed:

- **B. Pfizer:** Pfizer is a multinational pharmaceutical company, and the Pfizer-BioNTech COVID-19 vaccine is not indigenously developed in India.
- **C. Sputnik:** Sputnik V is a Russian COVID-19 vaccine developed by the Gamaleya Research Institute of Epidemiology and Microbiology. It is not indigenously developed in India.
- **D. AstraZeneca:** The AstraZeneca COVID-19 vaccine, known as Covishield in India, is developed by AstraZeneca in collaboration with the University of Oxford. While it is widely used in India, it is not an indigenously developed vaccine.

Hence, the correct answer is option (C).

Q5 Text Solution:

Explanation:

- Asad Ali Khan (1937–2011) was a renowned Indian musician, and he was a master of the **Rudra veena**, a traditional plucked string instrument associated with Indian classical music.
- He hailed from the Senia gharana, a school or tradition of music that has been associated with the dhrupad style, one of the oldest forms of classical music in North India.
- Asad Ali Khan was born in a family with a rich musical heritage. He received training in music from his father and grandfather, both of whom were accomplished musicians.
- Throughout his career, Asad Ali Khan played a significant role in preserving and promoting the Rudra veena tradition.
- His artistry and mastery over the Rudra veena earned him widespread recognition and accolades in the field of classical music.
- Asad Ali Khan's contributions to Indian classical music, especially through his



performances and recordings, have left a lasting impact on the musical landscape of the country.

Hence, the correct answer is option (A).

Q6 Text Solution:

Explanation:

- India and the United States have signed a Project Agreement for Air-Launched Unmanned Aerial Vehicle (UAV).
- The agreement, signed between the Ministry of Defence (India) and the US Department of Defence, falls under the framework of the **Defence Technology and Trade Initiative (DTTI)**.
- The DTTI is a collaborative effort between India and the US to promote defense technology cooperation and trade.
- The signing of such agreements underscores the commitment to strengthening defense ties and collaboration in technological advancements between the two countries.
- These initiatives often aim to enhance interoperability and promote defense innovation through joint projects and technology exchange.

Hence, the correct answer is option (D).

Q7 Text Solution:

Explanation:

- "Bahishkrit Bharat" was a **Marathi language newspaper** launched by **Dr. B. R. Ambedkar** in **1927**.
- Dr. Ambedkar, a prominent social reformer, jurist, and the chief architect of the Indian Constitution, used this newspaper as a platform to address the

social issues and concerns of the marginalized and oppressed communities in India.

- The term **"Bahishkrit" translates to "Excluded" or "Outcast,"** and the newspaper played a crucial role in advocating for the rights and upliftment of the Dalits (formerly known as **"Untouchables"**) and other socially disadvantaged groups.

Hence, the correct answer is option (C).

Q8 Text Solution:

Explanation:

- Raja Krishnadevaraya, who ruled the Vijayanagara Empire in the 16th century, was a patron of literature and arts.
- His reign is often referred to as the **"Golden Age of Telugu Literature."**
- During this period, there was significant literary and cultural development in the Telugu language, and many poets and scholars flourished under his patronage.
- The Vijayanagara Empire, under Krishnadevaraya, became a center of learning and cultural excellence in South India.

Hence, the correct answer is option (A).

Q9 Text Solution:

Explanation:

- "Why I am an Atheist" is an essay written by **Bhagat Singh**, the Indian revolutionary and freedom fighter.
- The essay reflects Bhagat Singh's thoughts on religion, atheism, and his reasons for rejecting religious beliefs.
- He wrote this essay in **1930** while he was in **Lahore Central Jail**, awaiting trial for his involvement in the killing of British police officer J.P. Saunders.



- Bhagat Singh was a prominent figure in the Indian independence movement and sacrificed his life for the cause.

Hence, the correct answer is option (D).

Q10 Text Solution:

Explanation:

- A supernova is a dying star.
 - A supernova is a powerful and catastrophic explosion that occurs in the final stages of a massive star's life cycle.
 - This event results in a sudden and intense increase in brightness, outshining an entire galaxy for a brief period.
 - The energy released during a supernova is immense, and it can briefly outshine an entire galaxy.
 - Supernovae play a crucial role in the lifecycle of the universe by dispersing heavy elements and contributing to the formation of new stars and planetary systems. There are two main types of supernovae:
1. **Type I Supernova:** This occurs in binary star systems where a white dwarf (a dense, Earth-sized remnant of a star) accumulates material from its companion star. When the white dwarf reaches a critical mass, it undergoes a rapid collapse and explosion.
 2. **Type II Supernova:** This results from the collapse of a massive star that has exhausted its nuclear fuel. The core of the star collapses under its own gravity, and the outer layers are expelled in a tremendous explosion.

Hence, the correct answer is option (D).

Q11 Text Solution:

Explanation:

- The Attorney General of India is the principal legal advisor to the Government of India and is appointed by the President of India. The Attorney General has the right to represent the government in legal matters and has the authority to appear in any court of law, including the Supreme Court.
- **I. He is the highest law officer in the country:** The Attorney General of India is indeed the highest law officer in the country. This position is established under Article 76 of the Indian Constitution, and the Attorney General is appointed by the President of India. The Attorney General provides legal advice to the government, represents the government in legal matters, and performs other legal duties.
- **II. In the performance of his official duties, the Attorney General has the right of audience in all courts in the territory of India:** The Attorney General has the right of audience in all courts in India, which means that he can appear and represent the government in any court, including the Supreme Court and High Courts. This privilege allows the Attorney General to present legal opinions on behalf of the government and to participate in legal proceedings in various courts.

Hence, the correct answer is option (C).

Q12 Text Solution:

Explanation:

- **Sumit Antil** won the Gold medal in Javelin Throw at the 2020 Paralympics.
- He is an Indian para-athlete who set a new world record in the Men's Javelin Throw F64 category during the Paralympics held in Tokyo in 2021.



- Sumit's impressive performance and world record made him a gold medalist in the event.

Hence, the correct answer is option (A).

Q13 Text Solution:

Explanation:

- WEF stands for the World Economic Forum. The World Economic Forum is an international organization that brings together leaders from various sectors, including business, government, academia, and civil society, to engage in discussions and collaborations aimed at addressing global challenges and shaping economic agendas.
- Key aspects of the World Economic Forum include:
 - Annual Meeting:** The WEF is best known for its annual meeting in Davos, Switzerland, where leaders gather to discuss and deliberate on pressing global issues. The meeting provides a platform for dialogue and collaboration across different sectors.
 - Reports and Research:** The WEF conducts research and publishes reports on a wide range of topics, including global competitiveness, technology, sustainability, and more. These reports often provide insights into key trends and challenges facing the world.
 - Global Initiatives:** The WEF initiates and supports global projects and initiatives aimed at finding solutions to complex issues. These initiatives often involve public-private partnerships and collaboration between various stakeholders.
 - Public-Private Cooperation:** The organization emphasizes the importance of public-private cooperation in

addressing global challenges. It seeks to foster dialogue and collaboration between governments, businesses, and other stakeholders to achieve positive societal impact.

Hence, the correct answer is option (B).

Q14 Text Solution:

Explanation:

- Semiconductors** are the materials which have conductivity between insulators and conductors.
- They can be compounds or pure elements. Out of the given options, **Si** is one of the most commonly used semiconductor.

Hence, the correct option is 'D'

Q15 Text Solution:

Explanation:

The correct answer is **D. Nitrogen trifluoride**.

- Nitrogen trifluoride (NF_3) is a non-natural greenhouse gas, meaning it is not produced by natural processes.
- It is a synthetic compound mainly used in the electronics industry, particularly in the manufacture of semiconductors and liquid crystal displays (LCDs).

Q16 Text Solution:

Explanation:

- Prairies (Grassland in the United States):**
 - Location:** Prairies are expansive grasslands found in the central part of North America, primarily in the United States and parts of Canada.
 - Characteristics:** Prairies are characterized by tall grasses, rich soil, and a relatively flat landscape. They are often referred to as



temperate grasslands and are home to a variety of plant and animal species.

- **Pampas (Grassland in South America - Argentina):**

- **Location:** The Pampas are vast grasslands that extend across Argentina, Uruguay, and parts of Brazil.
- **Characteristics:** Pampas are known for their fertile soil and are one of the most important agricultural regions in South America. The landscape includes vast expanses of grass, and the region supports significant livestock farming.

- **Downs (Grassland in Australia):**

- **Location:** The term "downs" in the context of grasslands is often associated with areas in Australia. The Australian Downs are often named based on the specific region, like the Darling Downs in Queensland.
- **Characteristics:** Downs in Australia are characterized by rolling hills and grassy landscapes. They are often used for agriculture and grazing.

- **Llanos (Grasslands in Venezuela and Colombia):**

- **Location:** The Llanos are expansive grasslands primarily located in Venezuela and Colombia, extending into other South American countries.
- **Characteristics:** The Llanos are seasonally flooded savannas. During the wet season, they may experience flooding, but during the dry season, the land becomes drier, and the grasses are more visible.

Hence, the correct answer is option (C).

Q17 Text Solution:

Explanation:

1. **Global Warming:** is the phenomenon of gradual increase in the average temperature of earth's atmosphere.
2. **Cause:** The presence of high amount of greenhouse gases in the earth's atmosphere cause global warming.
3. **Greenhouse gases:** Major greenhouse gases are CO₂, water vapour, CH₄(methane), CFCs etc

Hence, the correct answer is 'B'.

Q18 Text Solution:

Explanation:

- **Operation Nistar** was a rescue operation conducted by the Indian government to evacuate Indian nationals from Yemen during a crisis. The operation took place in 2015 and involved the evacuation of Indian citizens from conflict-affected areas in Yemen, primarily the capital city of Sana'a. The Indian Navy, Air Force, and other agencies were involved in safely bringing back Indian citizens from Yemen during Operation Nistar.
- **Operation Pawan** was a military operation conducted by the Indian Peace Keeping Force (IPKF) in Sri Lanka. It aimed at controlling the Jaffna peninsula during the Sri Lankan Civil War. The operation took place in 1987, and its primary objective was to disarm the Liberation Tigers of Tamil Eelam (LTTE) and other militant groups in the region. The IPKF faced significant challenges and encountered resistance during the operation.



- **Operation Trident** was a naval operation conducted by the Indian Navy during the Indo-Pakistani War of 1971. It was a significant and successful naval offensive carried out on the night of December 4-5, 1971, against Pakistan. During Operation Trident, the Indian Navy's Western Naval Command launched a surprise attack on Karachi, Pakistan's major port city. The attack inflicted heavy damage on the Pakistani Navy, sinking or incapacitating several vessels. This operation significantly weakened Pakistan's naval capabilities during the war.
- **Operation Brasstacks** was a code name for a military exercise conducted by the Indian Armed Forces in 1986. It was one of the largest military exercises conducted by India, involving a significant deployment of troops and equipment. The exercise aimed at testing and improving the coordination and capabilities of the Indian military. Operation Brasstacks raised tensions between India and Pakistan due to misperceptions and concerns about the scale and nature of the military maneuvers. The exercise underscored the importance of transparent communication and confidence-building measures between neighboring countries to avoid misunderstandings and potential conflicts.

Hence, the correct answer is option (D).

Q19 Text Solution:

Explanation:

- Prithvi-II is a surface-to-surface missile developed by the Defence Research and Development Organisation (DRDO) of India. Here are some key features of the Prithvi-II missile:

1. **Range:** Prithvi-II is a short-range ballistic missile with an operational range of around 250 to 350 kilometers.
 2. **Payload Capacity:** It is capable of carrying conventional or nuclear warheads with a payload capacity of 500 to 1,000 kilograms.
 3. **Variants:** Prithvi-II is part of the Prithvi series of missiles, and it is an upgraded version of the earlier Prithvi-I. The series includes different variants designed for various operational requirements.
 4. **Guidance System:** The missile is guided during the entire flight duration using an inertial navigation system. It is also equipped with an advanced avionics system.
 5. **Launch Platform:** Prithvi-II can be launched from a mobile launcher, providing flexibility in deployment.
 6. Prithvi-II is intended for use by the Indian Armed Forces and serves as a strategic deterrent. Its development and deployment contribute to India's defense capabilities.
- **NAG (Option A):** Nag is an anti-tank guided missile, not a surface-to-surface missile.
 - **Akash (Option B):** Akash is a medium-range surface-to-air missile, primarily designed for air defense.
 - **Trishul (Option D):** Trishul was initially designed as a short-range surface-to-air missile for the Indian Armed Forces. However, the development of the Trishul missile faced challenges, and it did not enter widespread operational service. The Akash missile system took over the role intended for Trishul.

Hence, the correct answer is option (B).

Q20 Text Solution:



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Explanation:

- The launch of India's first Flood Forecasting and Early Warning System (FFEWS) for Kolkata City is a significant step towards enhancing the city's resilience to flooding and improving disaster preparedness. Here are key points from the provided information:
- **Initiative by Kolkata Municipal Corporation (KMC):**
 - The Flood Forecasting and Early Warning System (FFEWS) for Kolkata City has been launched by the Mayor of Kolkata Municipal Corporation (KMC).
 - The system aims to empower city officials and citizens to take decisive actions to minimize damage before and during disasters, particularly during flood events.
- **Comprehensive City-Level FFEWS:**
 - India's first comprehensive city-level Flood Forecasting and Early Warning System (FFEWS) has been established in Kolkata.
 - The system is designed to provide forecasts and real-time updates to reduce economic losses, mitigate impacts on livelihoods, and enhance flood awareness and safety at the community level.
- **ADB Funding and Technical Assistance:**
 - The Asian Development Bank (ADB) provided funding for the design and implementation of the FFEWS in Kolkata.
 - The funding was made available through a \$1 million technical assistance to KMC from the Urban

Climate Change Resilience Trust Fund under the Urban Financing Partnership Facility of ADB.

- The launch of India's first Flood Forecasting and Early Warning System in Kolkata, with the support of the Asian Development Bank, reflects a commitment to leveraging technology and international collaboration to address urban climate challenges and enhance disaster resilience.

Hence, the correct answer is option (D).

Q21 Text Solution:**Explanation:**

- **PM CARES Fund** – Under the chairmanship of Prime Minister Narendra Modi, the Prime Minister's Citizen Assistance and Relief in Emergency Situation Fund was created on March 28th, 2020. The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund popularly known as PM-CARES Fund has been established by the government to address any emergency or distress scenario, including the COVID-19 pandemic.
- This Fund was established as a result of several demands from the public to assist the administration in the wake of the COVID-19 emergency. Candidates can know detailed information about the PM CARES Fund on the Official Website (pmindia.gov.in).
- PM CARES fund is covered under the PM Schemes which is an important static GK topic with regards to UPSC or any other competitive examination.

About PM CARES Fund:

- With the Prime Minister serving as its **Chairman**, the Fund is a **public charitable trust**.
- The ministers of defence, home affairs, and finance are additional members.
- As a result of the Fund's ability to **accept micro-donations**, many people will be able to make donations in even the smallest amounts.
- The Fund will enhance capabilities for disaster management and promote research on citizen protection.

Objectives of PM CARES Fund:

- To undertake and support relief or assistance of any kind relating to a public health emergency or any other kind of emergency, calamity or distress, either man-made or natural, including the creation or upkeep of healthcare or pharmaceutical facilities, other necessary infrastructure, funding relevant research or any other type of support.
- To render financial assistance, provide grants of payments of money or take such other steps as may be deemed necessary by the Board of Trustees to the affected population.
- To undertake any other activity, which is not inconsistent with the above Objects.

Hence, the correct answer is option (B).

Q22 Text Solution:

Explanation:

- All three factors contribute to earthquakes:
1. **Location:** The tectonic plate boundaries play a crucial role in determining the occurrence of earthquakes. Earthquakes are more likely to happen near the

boundaries of tectonic plates where the Earth's lithosphere is interacting.

2. **Distance from the epicenter:** The epicenter is the point on the Earth's surface directly above the earthquake's point of origin (hypocenter). The closer a location is to the epicenter, the stronger the shaking will be.
 3. **Local geological conditions:** The geological characteristics of an area can influence how seismic waves travel through the Earth. Soft soil, for example, can amplify the shaking during an earthquake, while bedrock is typically more stable.
- Therefore, all three factors—location (related to tectonic plate boundaries), distance from the epicenter, and local geological conditions—play a role in contributing to the occurrence and impact of earthquakes.

Hence, the correct answer is option (D).

Q23 Text Solution:

Explanation:

The factor that does not contribute to earthquakes among the options given is:

C) Rate of Evaporation

- **Rate of Evaporation (Option C):** This factor is not related to the occurrence of earthquakes. Earthquakes are primarily caused by the movement of tectonic plates beneath the Earth's surface, and factors like evaporation rates do not directly contribute to seismic activity.
- **Distance from the epicenter (Option A):** The closer a location is to the epicenter, the stronger the shaking will be during an earthquake. So, distance from the epicenter is a contributing factor to the impact of earthquakes.



- **Location (Option B):** The tectonic setting and geological features of a location are critical factors in determining earthquake activity. Earthquakes are more likely to occur at tectonic plate boundaries.
- **Local geological conditions (Option D):** The geological characteristics of an area, such as the type of soil and rock, can influence how seismic waves propagate and how strongly the ground shakes during an earthquake. So, local geological conditions are indeed a contributing factor to earthquakes.

Therefore, the correct answer is (C) Rate of Evaporation.

Q24 Text Solution:
Explanation:

- **Assertion (A):** The Portuguese were the first European community to discover a direct sea route to India. This statement is true. The Portuguese explorer Vasco da Gama is credited with finding a direct sea route to India in 1498.
- **Reason (R):** The Turks started levying too many taxes on the goods passing through the routes of trade and

commerce between Asia and Europe. This statement is also true. The imposition of heavy taxes and control over land routes by the Ottoman Turks was one of the motivations for European powers, including the Portuguese, to seek alternative sea routes to Asia.

Therefore, in this case, both the assertion and the reason are true, and the reason correctly explains the assertion.

Hence, the correct answer is option (C).

Q25 Text Solution:
Explanation:

- When we jump out of a boat, the boat moves in the opposite direction is based on **Newton's Third Law** according to which '**To every action there is equal and opposite reaction.**'
- So, when a man jumps out of a boat, he applies force on the boat (*action*) as he presses the boat with his feet(*backward*), then the boat also exerts (*reaction*) and equal amount of force on him (*forward*) and he moves in the forward direction.

Hence, the correct option is 'C'.



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