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1. Geography

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1. Which of the following best describes the term “Standing Crop”?

- A. A standing crop is piece of land that is normally used for farming but that is left with no crops on it for a season in order to let it recover its fertility.
- B. The concept suggests that the world’s societies need to set limits on human consumption of crops to tightly linked Earth system processes.
- C. Standing crop is the amount of total biomass present in an ecosystem.
- D. None of the above

Answer: C

Explanation

The total amount of living material in a specified population at a particular time, expressed as biomass (standing biomass) or its equivalent in terms of energy. The standing crop may vary at different times of the year; for example, in a population of deciduous trees between summer and winter.

2. Which of the following is true in context with the term “Standing state” ?

- 1. Standing state is amount of inorganic nutrients found in an ecosystem.
 - 2. It circulates between living and non-living components of the ecosystem.
- A. Only 1
 - B. Only 2
 - C. Both 1 and 2
 - D. Neither 1 nor 2

Answer: C

Explanation

- Standing state is amount of inorganic nutrients found in an ecosystem. It represents part of non-living matter.
- It circulates between living and non-living components of the ecosystem. It is being regularly depleted and replenished by the living matters.

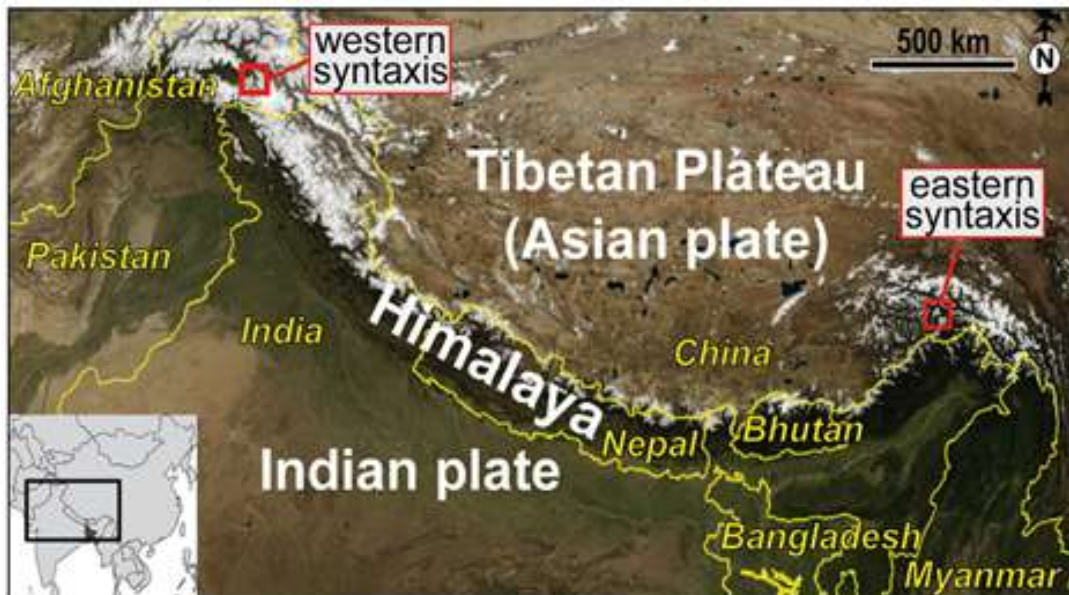
3. The Brahmaputra, Irrawaddy and Mekong rivers originate in Tibet and flow through narrow and parallel mountain ranges in their upper reaches. Of these rivers, Brahmaputra makes a “U” turn in its course to flow into India. This “U” turn is due to: (UPSC 2011)

- A. Uplift of folded Himalayan series
- B. Syntaxial bending of geologically young Himalayas
- C. Geo-tectonic disturbance in the tertiary folded mountain chains
- D. Both (a) and (b) above

Answer: B

Explanation

- Nanga Parbat : Western Bend
- Namcha Barwa : Eastern Bend



4. Salinization occurs when the irrigation water accumulated in the soil evaporates, leaving behind salts and minerals. What are the effects of salinization on the irrigated land? (UPSC - 2011)

- A. It greatly increases the crop production
- B. It makes some soils impermeable
- C. It raises the water table
- D. It fills the air spaces in the soil with water

Answer: B

Explanation

- Salinization on the irrigated land makes some soils impermeable.

- Salinization occurs when the irrigation water accumulated in the soil evaporates, leaving behind salts and minerals.
- It makes some soils impermeable which is the effect of salinization on the irrigated land.

5. Island Development Agency is chaired by:

- A. Union Home Minister
- B. Union Environment Minister
- C. Union Defence Minister
- D. Prime Minister

Answer: A

Explanation

- The Union Government constituted the Island Development Agency on 1st June, 2017 for the development of islands.
- The meetings of the Agency are chaired by the Union Home Minister.
- The Island Development Agency reviews the progress made towards the program —Holistic development of islands.

6. Graded Response Action Plan has been in news recently. Choose the correct statement for the same:

- A. It includes the measures which will be taken by different government agencies to prevent worsening of Air Quality of Delhi-NCR (National Capital Region).
- B. It includes the measures which will be taken by different government agencies to prevent the spread of Naxalism in North East States.
- C. It includes the measures which will be taken by different government agencies to access the mining affect areas and use the District Mineral Funds for the same.
- D. It includes the measures which will be taken by different government agencies to achieve SDG's by stipulated timeline.

Answer: A

7. The "Asian Elephant Specialist Group (AsESG)" has been in news recently. Which of the following is/ are correct in context with the same?

- 1. It is a global network of voluntary specialists concerned with the study, monitoring, management, and conservation of Asian elephants all over the world.
 - 2. Gajah is the bi-annual journal of the group.
- A. Only 1

- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: B

Explanation

- The International Union for Conservation of Nature's (IUCN) 10th Asian Elephant Specialist Group (AsESG) Meeting started on December 5, 2019, at Kota Kinabalu in Sabah, Malaysia.
- It is a global network of voluntary specialists concerned with the study, monitoring, management, and conservation of Asian elephants in 13 range states.
- Asian elephants across the current 13 range states: Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Laos PDR, Malaysia, Myanmar (Burma), Nepal, Sri Lanka, Thailand, and Vietnam.

8. Consider the following statements: (UPSC QUESTION)

The nation-wide 'Soil Health Card Scheme' aims at

1. Expanding the cultivable area under irrigation.
2. Enabling the banks to assess the quantum of loans to be granted to farmers on the basis of soil quality.
3. Checking the overuse of fertilizers in farmlands.

Which of the above statements is/are correct?

- A. 1 and 2 only
- B. 3 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: B

9. Which of the following bacteria have recently been found effective for carrying out Arsenic Bioremediation?

- A. Thiobacillus and Acidithiobacillus
- B. Oil Zapper and Oilivorous-S
- C. Bacillus flexus and Acinetobacter junii
- D. None of the above

Answer: C

Explanation

- Using two indigenous strains of bacterium isolated from arsenic-contaminated field, researchers from CSIR-National Botanical Research Institute (CSIR-NBRI) and the University of Lucknow have shown that arsenic can be effectively removed from contaminated soil with the help of microbes.
- The strains are named as *Bacillus flexus* and *Acinetobacter junii*.

10. Which of the following is/are correct in context with “Fisheries Sector in India “? [ECONOMIC SURVEY]

1. The sector accounts for 6.58 percent of GDP from agriculture, forestry and fishing.
2. The total fish Production in the country is more from Marine Fisheries than Inland Fisheries.

- A. Only 1
B. Only 2
C. Both 1 and 2
D. Neither 1 nor 2

Answer: A

Explanation

Fisheries Sector

- The sector provides livelihood to about 16 million fishers and fish farmers at the primary level and almost twice the number along the value chain.
- The sector accounts for 6.58 percent of GDP from agriculture, forestry and fishing.
- The total fish production in the country was 13.42 million metric tonnes (MMT) during 2018-19. (Marine fisheries- 3.71 MMT and Inland fisheries- 9.71 MMT)
- Fish production or fish farming is a form of aquaculture in which fish are raised in enclosures to be sold as food.”

11. World Wide Fund for Nature (WWF) has released the first-ever global assessment of forest biodiversity. The findings were based on the Forest Specialist Index. Which of the following best describes it?

- A. An index that tracks wildlife that lives only in forests.
B. An index that tracks diversity of flora and fauna in forests.
C. An index that differentiates between Forest area and Forest Cover to arrive at the biodiversity data in the area.
D. None of the above

Answer: A

Explanation

- World Wide Fund for Nature (WWF) has released the first-ever global assessment of forest biodiversity.
- The new findings were based on the Forest Specialist Index, developed following the Living Planet Index methodology – an index that tracks wildlife that lives only in forests.

Key findings

- There has been a 53% decline in the number of forest wildlife populations since 1970.
- Of the 455 monitored populations of forest specialists, more than half declined at an annual rate of 1.7 per cent, on average between 1970 and 2014.
- While the decline was consistent in these years among mammals, reptiles and amphibians (particularly from the tropical forests), it was less among birds (especially from temperate forests).

12. The Term “Global Stocktake” has been in news recently. It is directly associated with:

- A. Sustainable Development Goals
- B. Paris Agreement
- C. Montreal Protocol
- D. Millennium Development goals

Answer: B

Explanation

- GST refers to proposed five-yearly-review of the impact of climate change action undertaken by countries.
- Under the Paris Agreement, each country has to present a climate action plan every five years.
- Under the Paris Agreement, the first global stock take will happen in 2023.
- It will help world to determine whether it needs to do more and how much more.

13. Consider the following statements: (UPSC Question)

1. The Sustainable Development Goals were first proposed in 1972 by a global think tank called the ‘Club of Rome’.
2. The Sustainable Development Goals have to be achieved by 2030.

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

Answer: B

Explanation

- The 'Club of Rome' is a global think tank which in its 1972 book "Limits to Growth" talked about sustainability; however, they didn't propose Sustainable Development Goals.
- As per the resolution of UN General Assembly in September, 2015 the Sustainable Development Goals (SDGs) have been adopted by 193 member nations.

14. Find the correct statements in context of South Asian Climate Outlook Forum (SASCOF):

1. The main activity of SASCOFs is the preparation and issuing of a consensus outlook for the southwest monsoon rainfall over South Asia.
2. It was established in 2010 and is coordinated by India Meteorological Department (IMD).

- A. Only 1
B. Only 2
C. Both 1 and 2
D. Neither 1 nor 2

Answer: C

Explanation

- It is a regional forum to forecast for South West Monsoon Season rainfall.
- It was established in 2010 and is coordinated by India Meteorological Department (IMD).
- It covers Afghanistan, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.
- The main activity of SASCOFs is the preparation and issuing of a consensus outlook for the southwest monsoon rainfall over South Asia

15. The United Nations General Assembly (UNGA) proclaimed 2021–2030 as the Decade on Ecosystem Restoration. This endeavour builds on regional efforts such as:

1. Initiative 20×20 in Latin America that aims to restore 20 million hectares of degraded land by 2020.
2. AFR100 African Forest Landscape Restoration Initiative that aims to bring 100 million hectares of degraded land under restoration by 2030.

- A. Only 1
B. Only 2
C. Both 1 and 2
D. Neither 1 nor 2

Answer: C

Explanation

- UN Environment and the Food and Agriculture Organization (FAO) will lead the implementation.

16. The term “AKRUTI-KRUTIK-FORCE” has been in news recently. Which of the following is true in context with the same?

- A. It is an informal term used to refer to all the Corona warriors in Kerala.
- B. It is a force specially deployed for countering Naxals in North East India.
- C. It is associated with for techno-economic growth of the rural sector.
- D. It is an informal term used to refer to all the disaster management Teams active in a Pandemic.

Answer: C

Explanation

- The structured program called “AKRUTI-KRUTIK-FORCE” has been formulated by BARC, Mumbai.
- It is implemented through technically oriented NGOs for techno-economic growth of the rural sector.
- AKRUTI is an acronym for Advanced Knowledge and Rural Technology Implementation Initiative.

17. Often in news, what is Skymet

- A. An artificial satellite poised to go beyond Solar System
- B. A private Indian company that provides weather forecast
- C. A supercomputer built to track movements of heavenly bodies affecting Earth’s gravitation
- D. None of the above

Answer: B

Explanation

- Skymet Weather Services is a private Indian company that provides weather forecast and solutions to Indians.
- Skymet was the first private sector entity to provide weather forecasts and weather graphics to the Indian media in 2003. Sky met was founded in 2003 and is headquartered in Noida, India.

18. Recently, Carbon more than 8,000 years old was found in World's deepest blue hole is Yongle Blue Hole. Which of the following is/are true in context with Blue Holes?

1. Blue holes are deep, circular columns of water, inside oceans, that form when rainwater dissolves a sink hole through limestone rock.

2. Its waters are mostly isolated from the surrounding ocean and receive little fresh water from rainfall, making it a spot to study the chemistry of oxygen-deprived marine ecosystems

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: C

Explanation

- The deepest known marine cavern is the Yongle blue hole, which measures roughly 300 meters from top to bottom.
- Blue holes are marine caverns filled with water and are formed following dissolution of carbonate rocks, usually under the influence of global sea level rise or fall.
- Its waters are mostly isolated from the surrounding ocean and receive little fresh water from rainfall, making it a rare spot to study the chemistry of oxygen-deprived marine ecosystems.
- What distinguishes them from other aquatic caverns is that they are isolated from the ocean and don't receive fresh rainwater.
- They are generally circular, steep-walled and open to surface.

19. In the South Atlantic and South-Eastern Pacific regions in tropical latitudes, cyclone does not originate. What is the reason?

- A. Sea surface temperatures are low
- B. Inter-Tropical Convergence Zone seldom occurs
- C. Coriolis force is too weak
- D. Absence of land in those regions

Answer: A

Explanation

- The most proximate reasons for the lack of cyclone formation in the South Atlantic are sea surface temperatures that tend to run a shade cooler than ideal for tropical cyclone formation even in the southern summer

20. Algal Bloom Information Service (ABIS) has been in news recently. It provides near-real time information on spatio-temporal occurrence and spread of phytoplankton blooms over the North Indian Ocean, which are detrimental to coastal fisheries and induce respiratory problems within the coastal population. In addition, four regions have been identified as bloom hotspots. Identify them:

- 1. North Eastern Arabian Sea

2. coastal waters off Kerala
3. Gulf of Mannar
4. Coastal waters of Gopalpur

- A. 3 only
- B. 1 and 3 only
- C. 1,2 and 3 only
- D. 1,2,3 and 4 only

Answer: D

Explanation

Algal Bloom Information Service (ABIS): [PIB]

- It provides near-real time information on spatio-temporal occurrence and spread of phytoplankton blooms over the North Indian Ocean, which are detrimental to coastal fisheries and induce respiratory problems within the coastal population.
- For this, four regions have been identified as bloom hotspots
 - ✓ North Eastern Arabian Sea
 - ✓ Coastal waters off Kerala
 - ✓ Gulf of Mannar
 - ✓ Coastal waters of Gopalpur (Odisha)

2. History

Click on the links given below to watch the following questions on YouTube

- [Video 1](#)
- [Video 2](#)

1. Arrange the following in chronological order

1. The Policy of Ring Fence
2. The Policy of Equal Federation
3. The Policy of Subordinate Union
4. The Policy of Subordinate Isolation

- A. (1) (4) (3) (2)
- B. (1) (3) (2) (4)
- C. (3) (2) (4) (1)
- D. (4) (2) (1) (3)

Answer: A

Explanation

- The Company's Struggle for Equality from a Position of Subordination (1740-1765)
 - ✓ Starting with Anglo-French rivalry with the coming of Dupleix in 1751, the East India Company asserted political identity with capture of Arcot (1751).
 - ✓ With the Battle of Plassey in 1757, the East India Company acquired political power next only to the Bengal nawabs.
 - ✓ In 1765 with the acquisition of the Diwani of Bengal, Bihar and Orissa, the East India Company became a significant political power
- Policy of Ring Fence (1765-1813)
 - ✓ This policy was reflected in Warren Hastings' wars against the Marathas and Mysore, and aimed at creating buffer zones to defend the Company's frontiers.
 - ✓ Major powers such as Hyderabad, Awadh and the Marathas accepted subsidiary alliance. Thus, British supremacy was established.
- Policy of Subordinate Isolation (1813-1857)
 - ✓ Now, the imperial idea grew and the theory of paramountcy began to develop. The states surrendered all forms of external sovereignty but retained sovereignty in internal administration.
 - ✓ This policy of annexation culminated in usurpation of eight states by Dalhousie including some big states such as Satara and Nagpur.

- Policy of Subordinate Union (1857-1935)
 - ✓ The year 1858 saw the assumption of direct responsibility by the Crown.
 - ✓ The paramount supremacy of the Crown presupposed and implied the subordination of states.
- Policy of Equal Federation (1935-1947)
 - ✓ The Government of India Act, 1935 proposed a Federal Assembly with 125 out of 375 seats for the princes and the Council of States with 104 out of 160 seats for the princes, under its scheme of an all-India federation, which was subject to ratification by states representing more than half of the population and entitled to more than half of the seats in the Council of States.
 - ✓ This scheme never came into existence and after the outbreak of World War II (September 1939) it was dropped altogether.

2. English East India Company lost the monopoly of Chinese trade by

- A. The Charter Act of 1813
- B. The Charter Act of 1833
- C. The Charter Act of 1853
- D. The Charter Act of 1893

Answer: B

Explanation

- The Charter Act of 1813
 - ✓ The Company's monopoly over trade in India ended, but the Company retained the trade with China and the trade in tea
- The Charter Act of 1833
 - ✓ The Company's monopoly over trade with China and in tea also ended.

3. Which of the following statements is incorrect?

- A. Amrita Bazar Patrika was originally a Bengali paper.
- B. Samachar Darpan, the Vernacular newspaper was started during the period of Warren Hastings.
- C. Bombay Times became the Times of India.
- D. The Bengal Gazette, the Weekly Newspaper, was started by James Augustus Hickey.

Answer: B

Explanation

- Originally called The Bombay Times and Journal of Commerce, the paper was founded in 1838 to serve the British residents of western India.

- At first published twice weekly, the paper became a daily in 1851 and changed its name to The Times of India in 1861.
- Samachar Darpan was the first Bengali weekly newspaper. It was published by the Baptist Missionary Society and published on 23 May 1818 from the Baptist Mission Press at Serampore.
- The Governor at the time was Lord Hastings.

4. Match the List - I with List - II and select the correct answer from the codes given below:

List - I	List - II
1. Treaty of Allahabad	a. 1769
2. Treaty of Madras	b. 1765
3. Treaty of Purandar	c. 1776
4. Treaty of Mangalore	d. 1784

1	2	3	4
A. b	c	d	a
B. c	d	a	b
C. b	a	c	d
D. a	b	d	c

Answer: C

Explanation

- The Treaty of Allahabad
 - ✓ After the Battle of Buxar in 1764, Robert Clive concluded two important treaties at Allahabad in August 1765—one with the Nawab of Awadh and the other with the Mughal Emperor, Shah Alam II.
- The Treaty of Madras
 - ✓ This was a consequence of the first Anglo-Mysore War. Haider Ali was lined up in battle against the East India Company which was being supported by the Nizam and the Marathas.
 - ✓ Haider Ali won the tactical battle and the English were forced to conclude a very humiliating treaty with Haidar on April 4, 1769—Treaty of Madras.
- The Treaty of Purandar
 - ✓ This was a consequence of the First Anglo-Maratha War.
 - ✓ It was signed on 1 March 1776 by the peshwa of the Maratha people and the East India Company. Based on the terms of the accord, the British were able to secure Salsette.

✓ Treaty was signed between the then Governor General Warren Hasting who sent Colonel Upton and Nana Phadnavis of Peshwa in which British accepted Sawai Madhav Rao as a new Peshwa and Maratha accepted not to recognise existence of French in India.

● The Treaty of Mangalore

✓ It was signed between Tipu Sultan and the British East India Company on 11 March 1784. It was signed in Mangalore and brought an end to the Second Anglo-Mysore War.

5. The Ilbari ruler who introduced Sijada, Paibos and Nauroz to the Delhi Sultanate was

- A. Qutabuddin Aibek
- B. Iltutmish
- C. Balban
- D. Bahram Shah

Answer: C

Explanation

- Sijda - Under this, the people had to kneel down and touch the ground with their head while greeting the Sultan.
- Balban introduced rigorous court discipline and new customs such as prostration and kissing the Sultan's feet to prove his superiority over the nobles.
- He also introduced the Persian festival of Nauroz to impress the nobles and people with his wealth and power. He stood forth as the champion of Turkish nobility.

6. Arrange the following monuments in chronological order:

1. Char Minar - Hyderabad
2. Humayun's Tomb - Delhi
3. Tomb of Sher Shah Suri - Sasaram
4. Gol Gumbaz - Bijapur

Select the correct answer from the code given below:

- A. (2), (3), (4), (1)
- B. (4), (1), (3), (2)
- C. (3), (2), (1), (4)
- D. (1), (4), (2), (3)

Answer: C

Explanation

- Char Minar – Hyderabad – 1591 - The fifth ruler of the Qutb Shahi dynasty, Muhammad Quli Qutb Shah, built the Charminar in 1591 after shifting his capital from Golkonda to the newly formed city of Hyderabad.
- Humayun’s Tomb – 1569-70 - The tomb was commissioned by Humayun's first wife and chief consort, Empress Bega Begum (also known as Haji Begum) in 1569-70
- Tomb of Sher Shah Suri – 1545 - The tomb was built during the lifetime of Sher Shah as well as the reign of his son Islam Shah. An inscription dates its completion to 16 August 1545, three months after the death of Sher Shah
- Gol Gumbaz – 1648 - Gol Gumbaz at Vijayapura is the mausoleum of king Muhammad Adil Shah, Adil Shah Dynasty. Construction began in 1626 and was completed in 1656.

7. After storming Sirhind, Banda Bahadur adopted the title of Padshah, started a new calendar and issued coins bearing the names of which Gurus?

- A. Guru Nanak and Guru Hargobind
- B. Guru Nanak and Guru Gobind Singh
- C. Guru Hargobind and Guru Arjan
- D. Guru Gobind Singh and Guru Tegh Bahadur

Answer: B

Explanation

- Bahādur Shah attempted to make peace with the Sikh Guru, Gobind Singh. But when, after the death of the Guru, the Sikhs once again raised the banner of revolt in the Punjab under the leadership of Banda Singh Bahādur
- The Sikh movement was an open challenge to Mughal royalty. Banda adopted the title of Sacha Badshah (“True King”), started a new calendar, and issued coins bearing the names of Guru Nanak, the founder of the Sikh religion, and Guru Gobind.

8. Match the following and choose the correct answer from the code given below:

(Nationalist women)	(Their activities)
1. Sarojini Naidu	(i) A leader of the underground movement
2. Usha Mehta	(ii) Joined Azad Hind Fauz
3. Aruna Asaf Ali	(iii) Led Salt Satyagraha at Dharsana
4. Dr. Lakshmi Swaminathan	(iv) Operated secret radio during Quit India Movement

(1) (2) (3) (4)

- A. (iv) (ii) (i) (iii)
- B. (iii) (iv) (i) (ii)

C. (iv) (iii) (ii) (i)

D. (iii) (ii) (iv) (i)

Answer: B

Explanation

- Sarojini Naidu - Led Salt Satyagraha at Dharsana
- Usha Mehta - Operated secret radio during Quit India Movement
- Aruna Asaf Ali - A leader of the underground movement
- Dr. Lakshmi Swaminathan - Joined Azad Hind Fauz

9. Chronologically arrange the following top level political negotiations that took place to conciliate the Muslim League position:

1. Bhulabhai Desai-Liaqat Ali Pact
2. Simla Conference
3. Gandhi-Jinnah talks
4. Rajaji (Raj Gopalachari) formula

A. (3), (1), (4), (2)

B. (2), (4), (3), (1)

C. (1), (3), (2), (4)

D. (4), (3), (1), (2)

Answer: D

Explanation

- The allies in the war seemed to be victorious and attitude of British administration towards Congress softened with this. At the same time, America was pressing on meeting India's demand for self-governance though being an ally of Britain in the war.
- When Gandhi was released on 5 May 1944, he proposed talks with Jinnah on his two-nation theory and negotiating on issue of partition.
- C. Rajagopalachari (CR), the veteran Congress leader, prepared a formula for Congress-League cooperation in 1944.
- The CR formula acted as the basis for the negotiations. Gandhi and Jinnah met in September 1944 to ease the deadlock.
- Gandhi placed the CR formula as his proposal to Jinnah.

Desai - Liaqat Pact

- Bhulabhai Desai, leader of the Congress Party in the Central Legislative Assembly, met Liaqat Ali Khan, deputy leader of the Muslim League in that Assembly, and both of them came up with the draft proposal for the formation of an interim government at the centre, consisting of—
 - ✓ an equal number of persons nominated by the Congress and the League in the central legislature.
 - ✓ 20% reserved seats for minorities.
- No settlement could be reached between the Congress and the League on these lines

Wavell Plan

- Although the war in Europe came to an end in May 1945, the Japanese threat still remained.
- The Conservative government in Britain led by Churchill was keen to reach a solution on the constitutional question in India
- For this purpose, a conference was convened by the viceroy, Lord Wavell, at Shimla in June 1945.

10. After gaining independence from the British rule, who reminded Jawaharlal Nehru, 'freedom comes to India, not to the Congress', urging the formulation of a cabinet that included the ablest men regardless of party affiliation?

- A. C. Rajgopalachari
- B. Dr. Rajendra Prasad
- C. Mahatma Gandhi
- D. Vallabhbhai Patel

Answer: C

Explanation

- R. K. Shanmukham Chetty, a Madras businessman who possessed one of the best financial minds in India;
- B. R. Ambedkar, a brilliant legal scholar and an 'Untouchable' by caste;
- Shyama Prasad Mookerjee, a leading Bengal politician who belonged (at this time) to the Hindu Mahasabha.
- All three had collaborated with the rulers while the Congress men served time in British jails.
- But now Nehru and his colleagues wisely put aside these differences.
- Gandhi had reminded them that 'freedom comes to India, not to the Congress', urging the formation of a Cabinet that included the ablest men regardless of party affiliation.

3. Polity, Governance & IR

Click on the links given to watch the following questions on YouTube

- [Video 1](#)
- [Video 2](#)

1. Which of the following is correct about PM CARES Fund?

1. The Fund has been created under the Registrations Act 1908
 2. the Fund is not audited by the CAG
- A. Only 1
B. Only 2
C. Both 1 and 2
D. Neither 1 nor 2

Answer: C

Explanation

- The PM CARES Fund is a charitable trust registered under the Registration Act, 1908 at New Delhi on 27.03.2020. The trust does not receive any Budgetary support or any Government money.
- With regard to a recent petition, Supreme Court “refused” to order transfer of funds from the PM CARES Fund to the National Disaster Response Fund (NDRF), saying they “are two entirely different funds with different object and purpose” and “there is no occasion” for such a direction.
- It also said guidelines specifically provide for audit of the NDRF by the Comptroller & Auditor General of India, but PM CARES Fund, being a public charitable trust, “there is no occasion for audit by the Comptroller & Auditor General of India”.

2. Which of the following was the mandate of the G. Rohini Commission?

- A. Implementation of Clause 6 of Assam Accord
B. Committee to formulate New Education Policy
C. Sub-categorisation of OBCs
D. Look into the violence in Delhi during CAA protests

Answer: C

Explanation

- The Union Cabinet in June 2020 approved a six-month extension to the commission appointed to examine sub-categorisation of Other Backward Classes.

- Headed by retired Delhi High Court Chief Justice G. Rohini, the commission will now have till January 31, 2021 to submit its report, the government said in a statement. The commission had been appointed in October 2017 with the initial deadline of 12 weeks. It has received several extensions since then.
- The National Commission for Backward Classes (NCBC) proposed the sub-categorisation of Other Backward Classes (OBCs) back in 2015. In October 2017, President Ram Nath Kovind, in exercise of the powers conferred by Article 340 of the Constitution, appointed a commission to examine the issue of sub-categorisation of OBCs, chaired by retired Justice G. Rohini, to ensure social justice in an efficient manner by prioritising the Extremely Backward Classes (EBCs).

3. Which of the following statements are correct?

1. Article 16 provides equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.
2. The state government has authority to make any law prescribing, in regard to a class or classes of employment or appointment to an office under the Government of, or any local or other authority within, a State or Union territory, any requirement as to residence within that State or Union territory prior to such employment or appointment.

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: A

Explanation

- Article 16 of the Constitution of India, talks about the right of equal opportunity in the matters of public employment. It states that:
 - ✓ There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State,
 - ✓ No citizen shall, on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them, be ineligible for, or discriminated against in respect of, any employment or office under the State.
 - ✓ Nothing in this article shall prevent Parliament from making any law prescribing, in regard to a class or classes of employment or appointment to an office under the Government of, or any local or other authority within, a State or Union territory, any requirement as to residence within that State or Union territory prior to such employment or appointment.
 - ✓ Nothing in this article shall prevent the State from making any provision for the reservation of appointments or posts in favour of any backward class of citizens which, in the opinion of the State, is not adequately represented in the services under the State.

4. Consider the following statements about are correct about the Parliamentary Standing Committee on Information Technology?

1. The committee was first constituted in 1993 and only has jurisdiction over subject matters dealt with by the Ministry of Electronics & IT, and Ministry of Information and Broadcasting.
2. It is a Departmentally Related Standing Committee consisting of 21 members from Lok Sabha and 10 from Rajya Sabha

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

Answer: B

Explanation

- The Standing Committee on Information Technology, one of the 24 Departmentally Related Committees in existence, is constituted under Rule 331C of the Rules of Procedure and Conduct of Business in Lok Sabha. It was first constituted in April 1993. The following Ministries/Departments of the Government of India are under its jurisdiction:

- ✓ Ministry of Communications;
- ✓ Department of Posts
- ✓ Department of Telecommunications
- ✓ Ministry of Electronics and Information Technology; and
- ✓ Ministry of Information and Broadcasting. Composition of the Committee

- The Committee consist of 31 members; 21 members from Lok Sabha, nominated by the Speaker, Lok Sabha and 10 from Rajya Sabha nominated by the Chairperson, Rajya Sabha. The Chairperson of the Committee is appointed by the Speaker from amongst the members of the Committee from Lok Sabha. The term of office of the members of the Committee does not exceed one year.

5. Which of the following is correct with regard to the doctrine of constitutional morality?

1. It has been defined in the Constitution
2. It is limited to applying the provisions and a literal text which a constitution contains

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

Answer: D

Explanation

- The concept of constitutional morality was first propounded by the British Classicist named George Grote in the 19th century in his book “A History of Greece.” In Grote’s formulation, constitutional morality meant as:
 - ✓ That all citizens would respect and adhere the constitution.
 - ✓ No one would disobey authorities acting under the constitution.
 - ✓ All citizens would have the unrestrained freedom to criticize public officials acting in the discharge of their constitutional duties.
 - ✓ All Public officials would have to act within the confines of the constitution.
 - ✓ All the contenders for political power would respect the constitution and know that their rivals also respect the same.
- In Indian context first the word Constitutional Morality was propounded by Dr. B.R. Ambedkar on 4 November 1948 in parliamentary debate to inculcate the morality in the constitution with its great importance and effectiveness. However, it is not mentioned in the Constitution itself.
- In recent times, the doctrine become buzzword as the word “Constitutional Morality” is reiterated by Apex court in many landmark judgements including Navtej Johar case. Former CJI Dipak Mishra in his judgement said “that magnitude and sweep of constitution morality is not confined to the provisions and a literal text which a constitution contains, rather it embraces within itself a virtue of a wide magnitude that ushers in a pluralistic and inclusive society.”

6. Which of the following Asian languages are UN official languages?

- A. Chinese and Japanese
- B. Chinese and Arabic
- C. Japanese and Arabic
- D. Chinese and Hindi

Answer: B

Explanation

- United Nations – Chinese, English, French, Russian, Spanish, Arabic

7. Which of the following language(s) is/are a part of Eighth Schedule of the Constitution of India?

1. Bodo
2. English
3. Bhojpuri

- A. 1 Only
- B. 2 Only

- C. 1 and 2 Only
- D. 2 and 3 Only

Answer: A

Explanation

- English is not a Scheduled language of India, but the official language
- Bhojpuri is not a Scheduled language
- Bodo is the Scheduled language

8. Which of the following statement(s) is/are correct in the context of languages in India?

1. **As per Constitution of India, every bill introduced in the Parliament is to be accompanied by a Hindi translation**
 2. **Supreme Court hears only those who petition or appeal in English**
- A. 1 only
 - B. 2 only
 - C. 1 and 2 only
 - D. Neither 1 nor 2

Answer: B

Explanation

Statement 1 is incorrect and Statement 2 is correct

- The Official Language Act of 1963 lays down that Hindi translation of acts, ordinances, orders, regulations and bye-laws published under the authority of the president are deemed to be authoritative texts. Further, every bill introduced in the Parliament is to be accompanied by a Hindi translation. Similarly, there is to be a Hindi translation of state acts or ordinances in certain cases.
- The act also enables the governor of a state, with the previous consent of the president, to authorise the use of Hindi or any other official language of the state for judgements, decrees and orders passed by the high court of the state but they should be accompanied by an English translation. For example, Hindi is used in Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan for this purpose.
- However, the Parliament has not made any provision for the use of Hindi in the Supreme Court. Hence, the Supreme Court hears only those who petition or appeal in English. In 1971, a petitioner insisted on arguing in Hindi a habeas corpus petition in the Supreme Court. But, the Court cancelled his petition on the ground that the language of the Court was English and allowing Hindi would be unconstitutional

9. Hindi is the official language of which of the following institutions?

1. **Commonwealth of Nations**

2. United Nations

3. World Hindi Secretariat

- A. 1 and 3 only
- B. 3 only
- C. 2 and 3 only
- D. 1, 2 and 3 only

Answer: B

Explanation

- Commonwealth of Nations – English
- United Nations – Chinese, English, French, Russian, Spanish, Arabic
- World Hindi Secretariat – Hindi

10. What is the criteria that has to be met for a language to be declared as 'classical language'?

1. Early texts/recorded history over a period of 500 years

2. Original literary tradition

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: B

Explanation

Statement 1 is incorrect 2 is correct

- Currently, six languages enjoy the 'Classical' status: Tamil (declared in 2004), Sanskrit (2005), Kannada (2008), Telugu (2008), Malayalam (2013), and Odia (2014)
- Criteria
 - ✓ High antiquity of its early texts/recorded history over a period of 1500-2000 years;
 - ✓ A body of ancient literature/texts, which is considered a valuable heritage by generations of speakers;
 - ✓ The literary tradition be original and not borrowed from another speech community;
 - ✓ The classical language and literature being distinct from modern, there may also be a discontinuity between the classical language and its later forms or its offshoots.

4. Economy

Click [here](#) to watch the following questions on YouTube

1. Which of the following is/are correct in context of Fair and Remunerative Price (FRP) of sugarcane?
1. It is decided on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP).
 2. Price of sugar is also announced along with the FRP.
- A. 1 only
B. 2 only
C. Both are correct
D. None is correct

Answer: A

Explanation

- With the amendment of the Sugarcane (Control) Order, 1966 on 22.10.2009, the concept of Statutory Minimum Price (SMP) of sugarcane was replaced with the 'Fair and Remunerative Price (FRP)' of sugarcane for 2009-10 and subsequent sugar seasons.
- The cane price announced by the Central Government is decided on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP) in consultation with the State Governments and after taking feedback from associations of sugar industry.
- The amended provisions of the Sugarcane (Control) Order, 1966 provides for fixation of FRP of sugarcane having regard to the following factors: -
 - ✓ Cost of production of sugarcane
 - ✓ Return to the growers from alternative crops and the general trend of prices of agricultural commodities
 - ✓ Availability of sugar to consumers at a fair price
 - ✓ Price at which sugar produced from sugarcane is sold by sugar producers
 - ✓ Recovery of sugar from sugarcane
 - ✓ The realization made from sale of by-products viz. molasses, bagasse and press mud or their imputed value.
- Price of sugar are market driven & depends on demand & supply of sugar.
- However, with a view to protect the interests of farmers, concept of Minimum Selling Price (MSP) of sugar has been introduced w.e.f. 07.06.2018 so that industry may get atleast the minimum cost of production of sugar, so as to enable them to clear cane price dues of farmers.

2. Which of the following could be the benefits derived from Ethanol Blending Programme (EBP)?

1. Reducing pollution
2. Conserve foreign exchange
3. Enabling sugar industry to clear cane price arrears of farmers

- A. 1 only
- B. 2 & 3 only
- C. 2 only
- D. All are correct

Answer: D

Explanation

- Ethanol is an agro-based product, mainly produced from a by-product of the sugar industry, namely molasses.
- In years of surplus production of sugarcane, when prices are depressed, the sugar industry is unable to make timely payment of cane price to farmers.
- The Ethanol Blending Programme (EBP) seeks to achieve blending of Ethanol with motor spirit with a view to reducing pollution, conserve foreign exchange and increase value addition in the sugar industry enabling them to clear cane price arrears of farmers.
- The Central Government has scaled up blending targets from 5% to 10% under the Ethanol Blending Programme (EBP).
- The procedure of procurement of ethanol under the EBP has been simplified to streamline the entire ethanol supply chain and remunerative ex-depot price of ethanol has been fixed.
- To facilitate achieving of new blending targets, a "grid" which networks distilleries to OMC depots and details quantities to be supplied has been worked out.
- For the first time the Government has also fixed ex-mill price of ethanol derived from B-heavy molasses as well as from 100% sugarcane juice for those mills who will divert 100% sugarcane juice for production of ethanol thereby not producing any sugar.
- This will improve the liquidity of sugar mills thereby enabling them to clear cane price arrears of farmers.

3. Which of the following is/are correct in context of Pradhan Mantri Fasal Bima Yojana?

1. It ensures comprehensive risk cover for crops against all non-preventable natural risks from pre-sowing to post-harvest stage.
2. All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas are eligible for coverage.

- A. 1 only

- B. 2 only
- C. Both are correct
- D. None is correct

Answer: C

Explanation

- Pradhan Mantri Fasal Bima Yojana (PMFBY) was launched from Kharif 2016 with aim to support production in agriculture by providing an affordable crop insurance product to ensure comprehensive risk cover for crops of farmers against all non-preventable natural risks from pre-sowing to post-harvest stage. The Scheme has completed 8 crop seasons and is being implemented across States/ Union Territories (UTs).
 - After the commencement of the Scheme, The Ministry of Agriculture and Farmers Welfare (MoA&FW), Government of India (GoI) has endeavoured to make the Scheme more effective, transparent and auto administration driven with the intention to minimise manual interventions and eliminate usage of variable methodologies for implementation and execution on the ground.
 - All farmers including sharecroppers and tenant farmers growing the notified crops in the notified areas are eligible for coverage.
 - Such farmers are required to submit necessary documentary evidence of land records prevailing in the State (Records of Right (RoR), Land possession Certificate (LPC) etc.) and/or applicable contract/ agreement details/ other documents notified/ permitted by concerned State Government in case of sharecropper's/tenant farmers and the same should be defined by the respective States in the notification itself.
 - The scheme is optional for all farmers including farmers who have been sanctioned short-term Seasonal Agricultural Operations (SAO) loans/Kisan Credit Card (KCC) for the notified crops from defined FIs (hereinafter referred to as Loanee farmers).
 - Existing Loanee farmers who do not want to get covered under the scheme have the option of opting-out from the Schemes by submitting requisite declaration to loan sanctioning bank branches any time during the year but at least seven days prior to the cut-off date for enrolment of farmers for the respective season. All those farmers who do not submit the declaration would be essentially covered.
 - In an endeavour to integrate Technology in implementation and execution of the Scheme, Government of India has designed and developed a National Crop Insurance Portal (NCIP) (www.pmfby.gov.in) which has been in use since Kharif 2018.
 - This has brought in better administration and coordination amongst stakeholders viz. Farmers, States, Insurers and Banks as well as ensured real time dissemination of information and transparency in implementation.
- 4. Warehousing Development and Regulatory Authority (WDRA) is formed to regulate and ensure implementation of the provisions of the Warehousing (Development and Regulation) Act, 2007 for the development and regulation of warehouses, Regulations of Negotiability of Warehouse Receipts and promote orderly growth of the warehousing business. WDRA works under the aegis of:**

- A. Department of Food and Public Distribution, Ministry of Consumer Affairs
- B. Department of Industrial Policy & Promotion, Ministry of Commerce and Industry
- C. Department of Agriculture cooperation and Farmers welfare, Ministry of Agriculture and Farmers Welfare
- D. None of the above

Answer: A

Explanation

- The Warehousing Development and Regulatory Authority was established under the Warehousing (Development and Regulation) Act, 2007.
- The mission of the WDRA is to ensure that the interests of the farmers are protected through the growth and development in the warehousing sector.
- The main objectives are to improve the fiduciary trust of depositors and banks, increase liquidity in rural areas, encourage scientific warehousing of goods, lower the cost of financing, promote shorter and efficient supply chains, enhance reward for grading and quality and ensure better price risk management.
- The negotiable warehouse receipts issued by the WDRA will help the farmers to seek loans from banks against the NWRs to avoid distress sales of agricultural produce during the peak marketing season and to avoid the post-harvest storage loss.

5. Consider the following in terms of Gold Monetisation Scheme:

1. It does not have the option for the depositors of gold to earn interest on their metal accounts.
2. RBI has made it mandatory for scheduled commercial banks to offer this scheme.

- A. 1 only
- B. 2 only
- C. Both are correct
- D. None is correct

Answer: D

Explanation

- It facilitates the depositors of gold to earn interest on their metal accounts. Once the gold is deposited in metal account, it starts earning interest on the same.
- The rate of interest on such deposit will be decided by the Central Government and notified by the Reserve Bank of India from time to time.
- RBI has allowed scheduled commercial banks to offer the scheme and it is not mandatory.

5. Environment

Click on the links given below to watch the following questions on YouTube

- [Video 1](#)
- [Video 2](#)

1. Which of the below sites are designated as GIAHS (Globally Important Agricultural Heritage Systems) in India?

1. Saffron Heritage of Kashmir
2. Koraput Traditional Agriculture
3. Kuttanad Below Sea Level Farming System

Choose the correct option from below

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

Explanation

- The concept of Globally Important Agricultural Heritage Systems (GIAHS) is distinct from, and more complex than, a conventional heritage site or protected area/landscape.
- A GIAHS is a living, evolving system of human communities in an intricate relationship with their territory, cultural or agricultural landscape or biophysical and wider social environment.
- The Global Agricultural Heritage Systems (GIAHS) was started by Food and Agricultural Organization (FAO) for the purpose of creating public awareness and safeguarding the World agricultural heritage sites.
- There are three regions of India, which has been recognised as the Global Agricultural Heritage Systems (GIAHS) cities in India:
 - ✓ Koraput, Odisha State;
 - ✓ Kashmir Valley, Pam pore region; and
 - ✓ Kuttanad
- At present, 37 sites in 7 countries (1 site in Bangladesh, 15 sites in China, 3 sites in India, 11 sites in Japan, 1 site in Philippines and 5 sites in Republic of Korea, 1 site in Sri Lanka) are designated as GIAHS in Asia and the Pacific region.

2. Which of the following correctly define the word “Bioplastics”?

- A. Plastics made at least partly from biological matter
- B. Plastics that can be completely broken down by microbes in a reasonable timeframe
- C. Both of the above
- D. None of the above

Answer: C

Explanation

- “Bioplastics” is actually used for two separate things
- Bio-based plastics - plastics made at least partly from biological matter
- Biodegradable plastics - plastics that can be completely broken down by microbes in a reasonable timeframe, given specific conditions

3. Mahakalapada forest which is considered to have the most bio diverse mangrove vegetation in the world, second only to Papua New Guinea is located in

- A. Pichavaram Mangroves
- B. Sunderbans National Park
- C. Bhitarkanika National Park
- D. None of the above

Answer: C

Explanation

- The Mahakalapada forest is part of Bhitarkanika National Park, which is considered to have the most bio diverse mangrove vegetation in the world, second only to Papua New Guinea, with 64 species of flora recorded.
- It happens to be India’s second largest mangrove forest after the Sundarbans.

4. Which of the following bodies have been constituted under the Wildlife (Protection) Act 1972?

1. Animal Welfare Board of India
2. Wildlife Crime Control Bureau
3. National Board for Wildlife
4. Central Zoo Authority

Choose the correct option from below

- A. 1, 2 and 3 only

- B. 1, 3 and 4 only
- C. 2, 3 and 4 only
- D. All of the above

Answer: C

Explanation

- The Animal Welfare Board of India (AWBI), headquartered at Ballabgarh in Haryana, is a statutory advisory body under Prevention of Cruelty to Animals Act, 1960, advising the Ministry of Environment Forest and Climate Change.
- Wildlife Crime Control Bureau is a statutory multi-disciplinary body established by the Government of India under the Ministry of Environment and Forests, to combat organized wildlife crime in the country.
- WPA 1972 also provides for National Tiger Conservation Authority and Protected areas such as Sanctuaries, National Parks, and Tiger reserves.
- National Board for Wildlife (NBWL) is a statutory Board constituted on 22nd September 2003 under Section 5 of the Wild Life (Protection) Act, 1972.
- The NBWL is chaired by the Hon'ble Prime Minister.
- • The Central Zoo Authority was created by the Central Government through an amendment of the Wild Life (Protection) Act in the year 1992.
- The main objective was to enforce certain minimum standards and norms for upkeep and health care of animals in Zoos and to restrain mushrooming of unplanned and ill-conceived Zoos that were cropping up as adjuncts to public parks. Industrial complex and highways.

5. Which of the following is/are correctly matched?

1. Brahmaputra Valley – Alpine
2. Ladakh Mountains – Tundra
3. Tibetan Plateau - Alpine

- A. 1 and 3 only
- B. 1 and 2 only
- C. 1 only
- D. 2 and 3 only

Answer: D

Explanation

- The diversity of biophysical features in Indian Himalayan Region (IHR) is adequately represented through representation of 3 bio-geographical zones and 9 bio-geographic provinces.

✓ Ladakh Mountains – Tundra

✓ Tibetan Plateau – Alpine

✓ Sikkim Trans Himalaya – Tundra

- North west Himalaya, West Himalaya, Central Himalaya, East Himalaya - Alpine, Temperate, Sub Tropical
- Brahmaputra Valley - Tropical Evergreen Forest, Very Moist Sal Forest, Tropical Grass Lands.
- Northeast Hills - Tropical evergreen, Tropical Moist Deciduous, Subtropical, Montane Temperate, Wetlands.

6. Surakhsya, a national portal recently launched deals with

- A. Women Protection
- B. Women and child health
- C. Human Elephant Conflict
- D. Wetlands conservation

Answer: C

Explanation

- Beta version of a portal on Human-Elephants Conflict was recently launched.
- The National Portal on human elephant conflict called “Surakhsya” for collection of real time information & also for managing the conflicts on a real time basis will help to set the data collection protocols, data transmission pipelines and data visualization tools to enable policy-makers to leverage HEC data for policy formulation and for preparation of Action Plans for mitigation of conflicts.

World Elephant Day

- The World Elephant Day is celebrated on 12th August every year to spread awareness for the conservation and protection of the largest mammal on land.
- The day was launched in 2012 to bring attention to the urgent plight of Asian and African elephants.

7. Consider the following statements regarding Regenerative Agriculture

1. It includes the practice of tillage.
2. It helps to reverse climate change.

Which of the following statements is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: B

Explanation

- Regenerative Agriculture describes farming and grazing practices that, among other benefits, reverse climate change by rebuilding soil organic matter and restoring degraded soil biodiversity – resulting in both carbon drawdown and improving the water cycle.
- Regenerative Agriculture is a holistic land management practice that leverages the power of photosynthesis in plants to close the carbon cycle, and build soil health, crop resilience and nutrient density.
- Regenerative agriculture improves soil health, primarily through the practices that increase soil organic matter.
- This not only aids in increasing soil biota diversity and health, but increases biodiversity both above and below the soil surface, while increasing both water holding capacity and sequestering carbon at greater depths, thus drawing down climate-damaging levels of atmospheric CO₂, and improving soil structure to reverse civilization-threatening human-caused soil loss.
- Research continues to reveal the damaging effects to soil from tillage, applications of agricultural chemicals and salt based fertilizers, and carbon mining.
- Practices include that
 - ✓ contribute to generating/building soils and soil fertility and health;
 - ✓ increase water percolation, water retention, and clean and safe water runoff;
 - ✓ increase biodiversity and ecosystem health and resiliency; and
 - ✓ invert the carbon emissions of our current agriculture to one of remarkably significant carbon sequestration thereby cleansing the atmosphere of legacy levels of CO₂.

8. Swachh Survekshan 2020 is organised by which of the following ministry?

- A. Ministry of Jal Shakti
- B. Ministry of Drinking Water and Sanitation
- C. Ministry of Housing and Urban Affairs (MoUHA).
- D. None of the above

Answer: C

Explanation

- The results of the fifth edition of the nationwide annual cleanliness survey, 'Swachh Survekshan 2020,' are out and Madhya Pradesh's Indore has yet again made it as India's cleanest city.
- While Indore has been named as India's cleanest city for the fourth time in a row, Gujarat's Surat emerged as India's second cleanest city, followed by Navi Mumbai which bagged the third spot in Ministry of Housing and Urban Affairs' swachhta city survey report.

- The announcement was made by Union Minister Hardeep Singh Puri at the Swachh Mahotsav being organised by the Ministry of Housing and Urban Affairs (MoUHA).

9. A mobile application called “Ganga Data Collector” has been launched by

- A. WWF for Nature
- B. Wildlife Trust of India (WTI)
- C. Wildlife Institute of India (WII)
- D. None of the above

Answer: C

Explanation

- Wildlife Institute of India (WII) has launched a mobile application named “Ganga Data Collector”.
- It aims to provide field researchers with a complete data entry solution to monitor the aquatic population in the Ganga river.
- The application has been launched under the Biodiversity and Ganga Conservation project initiated by the National Mission for Clean Ganga (NMCG) of Union Ministry of Jal Shakti.
- The application will be used by scientists of WII, Ganga Praharis and staff of the forest department in the 11 states of the Ganga Basin for faster collection of more authentic and accurate data related to water quality and aquatic life in Ganga.

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6. Science & Technology

Click on the following links to watch the following questions on YouTube

- [Video 1](#)
- [Video 2](#)

1. Which of the following is needed by Vitamin D to perform its action?

- A. Calcium
- B. Iron
- C. Potassium
- D. Iodine

Answer: A

Explanation

- Light falling on the skin produces a precursor molecule, which is processed in the cells of the organs to make vitamin D, and if this becomes faulty due to any genetic/metabolic error, deficiency might arise
- Deficiency of Vitamin D leads to a loss of bone density, which can contribute to osteoporosis and fractures
 - ✓ It also causes rickets
- Ca^{++} is also needed by vitamin D for its action

2. Deficiency of which of the following, particularly in children and pregnant women, is most common in the world?

1. Iron
 2. Vitamin A
 3. Iodine
- A. 1 Only
 - B. 3 Only
 - C. 1 and 2 Only
 - D. 1, 2 and 3

Answer: D

Explanation

- Deficiencies in iron, vitamin A and iodine are the most common around the world, particularly in children and pregnant women

- Under nutrition is associated with 45% of child deaths worldwide

3. 5G represents an evolution in telecommunications. Which of the following are correct in this context?

1. 5G will extend into higher frequencies around 3.5 GHz and up to a few tens of GHz
2. The higher frequencies are new to mobile phone networks, but are commonly used in other applications, such as point-to-point radio links and body-scanners for security checks.

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

Answer: C

Explanation

- The higher the frequency, the faster the data transmission and shorter the signal range
 - ✓ Wi-Fi: 2.4 GHz and 5 GHz
 - ✓ Scanners : 24–30 GHz

4. Which of the following are the bombs dropped on Hiroshima and Nagasaki?

1. Little Boy
2. Fat Man
3. Big Man
4. Slim Boy

- A. 1 and 3 only
B. 1 and 2 only
C. 2 and 4 only
D. 3 and 4 only

Answer: B

Explanation

- Uranium-based design called the Little Boy was dropped on Hiroshima
 - ✓ Close to 80000 people were killed
- Plutonium-based weapon called the Fat Man was dropped on Nagasaki
 - ✓ Close to 40000 people were killed

5. WHO has recommended Artemisinin-based combination therapies (ACTs) for the treatment of

- A. Tuberculosis
- B. Malaria
- C. COVID-19
- D. HIV-AIDS

Answer: B

Explanation

- Artemisinin and its derivatives are powerful medicines known for their ability to swiftly reduce the number of Plasmodium parasites in the blood of patients with malaria
- Artemisinin-based combination therapies (ACTs) are recommended by WHO as the first-and second-line treatment for uncomplicated *P. falciparum* malaria as well as for chloroquine-resistant *P. vivax* malaria

6. Which of the following correctly defines the term 'Green Corridor'?

- A. Highways which are carbon neutral
- B. Renewable energy projects along the highways
- C. Demarcated, cleared out road route for organ transport
- D. None of the above

Answer: C

Explanation

- It is a demarcated, cleared out road route that enables an ambulance carrying organs to escape traffic snarls and reach the destination in the shortest possible time
- Organs have a short preservation time and green corridors require a concentrated effort from transplant coordinators, local police, traffic police and airport staff

7. Choose the correct statement(s)

1. All fly ashes exhibit cementitious properties
2. Carbon and Calcium are among the constituent elements

- A. 1 Only
- B. 2 Only
- C. 1 and 2 Only
- D. Neither 1 nor 2

Answer: C

Explanation

Both the statements are correct

- Fly ash is a byproduct from burning pulverized coal in electric power generating plants. During combustion, mineral impurities in the coal (clay, feldspar, quartz, and shale) fuse in suspension and float out of the combustion chamber with the exhaust gases.
- All fly ashes exhibit cementitious properties to varying degrees depending on the chemical and physical properties of both the fly ash and cement. Compared to cement and water, the chemical reaction between fly ash and calcium hydroxide typically is slower resulting in delayed hardening of the concrete
- Calcium and Carbon are among the constituent elements along with silica

8. 'Saliva Direct' is a new entrant in the testing of COVID-19. Which of the following are true?

1. The test has a very high specificity
2. Invasive technique of sample collection is used

- A. 1 only
B. 2 only
C. 1 and 2 only
D. Neither 1 nor 2

Answer: D

Explanation

Both the statements are incorrect

- The test has a very high sensitivity ranging between 88-94%
 - ✓ Sensitivity: Measures the proportion of positives that are correctly identified
 - ✓ Specificity: Measures the proportion of negatives that are correctly identified
- Instead of relying on nasopharyngeal specimens, the new test uses saliva, which makes the sample collection non-invasive

9. Shakuntala Devi, recently in news was born in

- A. Calcutta, Bengal
B. Kochi, Kerala
C. Chennai, Tamil Nadu
D. Bangalore, Karnataka

Answer: D

Explanation

- Shakuntala Devi was born in 1929. She was an Indian writer and mental calculator, popularly known as 'Human Computer'
- She wrote the book *The World Of Homosexuals*, which is considered the first study of homosexuality in India

10. The movie titled 'The Man Who Knew Infinity' is based on the biography of

- A. S. Ramanujan
- B. S. Chandrasekhar
- C. S.N. Bose
- D. C.V. Raman

Answer: A

Explanation

- S. Ramanujan was an Indian mathematician who lived during the British Rule
- He had almost no formal training in pure mathematics, he made substantial contributions to mathematical analysis

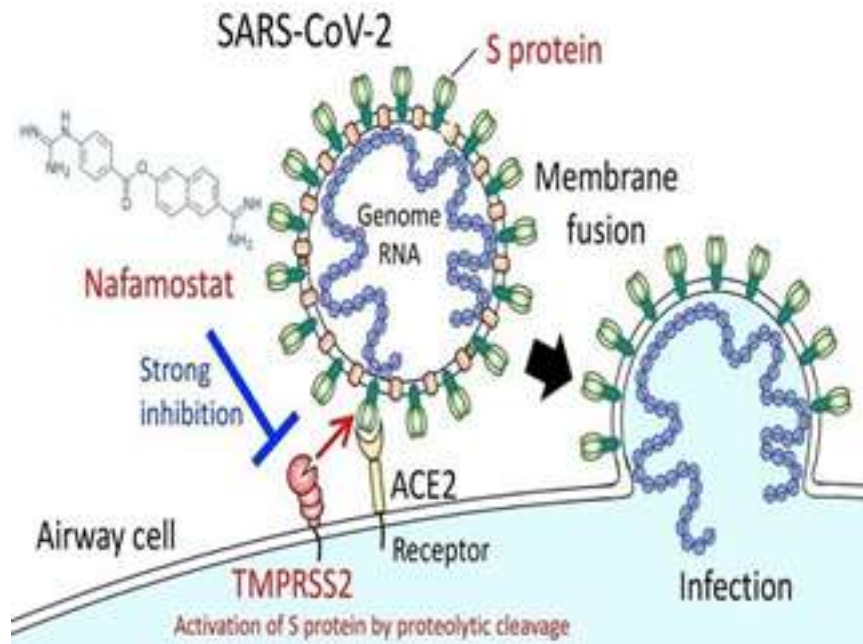
11. 'ACE2' has been in news lately in the context of COVID-19. What is 'ACE2'?

- A. A strain or lineage of the virus
- B. Spike like protein on the surface of SARS-COV-2
- C. Cellular doorway
- D. None of the above

Answer: C

Explanation

- Angiotensin-converting enzyme 2, or ACE2 is a protein on the surface of many cell types.
- It is an enzyme that generates small proteins – by cutting up the larger protein angiotensinogen – that then go on to regulate functions in the cell.
- Using the spike-like protein on its surface, the SARS-CoV-2 virus binds to ACE2 – like a key being inserted into a lock – prior to entry and infection of cells. Hence, ACE2 acts as a cellular doorway – a receptor – for the virus that causes COVID-19.
- SARS-CoV-2 virus requires ACE2 to infect cells but the precise relationship between ACE2 levels, viral infectivity and severity of infection are not well understood.



12. Which of the following is/are true in the context of T-cells?

1. Once infected with SARS-CoV-2, the immune system elicits highly functional memory T cell responses
 2. T-cells are a type of Monocytes
- A. 1 Only
B. 2 Only
C. 1 and 2 Only
D. Neither 1 nor 2

Answer: A

Explanation

- Statement 1 is correct but statement 2 is incorrect.
- White blood cells are the cells that help the body fight infection.
- The three major types of white blood cells are:
 - ✓ Granulocytes
 - ✓ Monocytes
 - ✓ Lymphocytes:
 - ✓ B lymphocytes (B cells)
 - ✓ T lymphocytes (T cells)
- Once infected with SARS-CoV-2, the immune system elicits robust, broad and highly functional memory T cell responses.

- SARS-CoV-2-specific T cells were found even in family members who have been exposed to the virus but have tested negative on antibody blood tests. SARS-CoV-2-specific T cells were also seen in convalescent individuals with a history of asymptomatic infection and mild COVID-19 disease.

13. Which of the following is true about Kongonaphon kely?

- A. Ancestor of dinosaurs
- B. Plant with medicinal properties
- C. Tribe in central Africa
- D. Virus strain helpful against COVID-19 infection

Answer: A

Explanation

- It is a newly described species from Madagascar.
- Believed to be the ancestor of dinosaurs and pterosaurs (extinct flying reptiles), it was just 10 cm tall.
- Analysis of body size throughout the history of dinosaurs and relatives shows that ancestrally medium-sized animals evolved into very small animals, such as Kongonaphon, which would have been around 10 cm tall and about 30 cm long. This then evolved into dinosaurs and pterosaurs which could reach enormous sizes.

14. Which of the following are true?

1. Mice share 98% of DNA with humans
 2. Mice are used for laboratory testing of COVID-19 vaccine
- A. 1 only
 - B. 2 only
 - C. Both 1 and 2
 - D. Neither 1 nor 2

Answer: A

Explanation

Statement 1 is correct but statement 2 is incorrect

- An animal model for a particular disease should fulfil two criteria. It should be able to “catch” that infection (in case of infectious diseases) and show the clinical outcomes and altered physiology that accompanies the disease.
- Mice, the most widely used “models” to understand human diseases, cannot be infected with SARS-CoV-2. If you imagine the virus to be a lock, it needs a “key” (usually a protein) on the surface of a cell to enter. The “key” is present in humans, rhesus monkeys, to a lesser extent in hamsters, ferrets and cats, but not in mice. Scientists are now creating genetically altered mice that express this “key”, as larger animals pose additional difficulties of housing, handling and are expensive.

- Apart from fever, sore throat, cough, pneumonia, COVID-19 infection in humans is also known to affect the heart, kidneys, intestine, and brain. While ferrets, hamsters, cats, rhesus monkeys and genetically modified mice could get infected with SARS-CoV-2, all of these develop only mild lung infection, most do not show fever, and they recover within seven–nine days.

15. Which of the following disease does not occur due to the change or mutation of sex chromosomes?

- A. Downs Syndrome
- B. Haemophilia
- C. Muscular Dystrophy
- D. Colour Blindness

Answer: A

Explanation

- Downs Syndrome is a chromosome 21 disorder. It is also known as trisomy 21
- Haemophilia is a rare disorder in which your blood doesn't clot normally because it lacks sufficient blood-clotting proteins (clotting factors)
- Muscular dystrophy is a group of inherited diseases that damage and weaken your muscles over time. This damage and weakness is due to the lack of a protein called dystrophin, which is necessary for normal muscle function

7. Miscellaneous

Click [here](#) to watch the following questions on YouTube

1. In the Indian context, what is the implication of ratifying the 'Additional Protocol' with the 'International Atomic Energy Agency (IAEA)'?

- A. The civilian nuclear reactors come under IAEA safeguards.
- B. The military nuclear installations come under the inspection of IAEA.
- C. The country will have the privilege to buy uranium from the Nuclear Suppliers Group (NSG).
- D. The country automatically becomes a member of the NSG.

Answer: A

Explanation

- The Additional Protocol is not a stand-alone agreement, but rather a protocol to a safeguards agreement that provides additional tools for verification.
- In particular, it significantly increases the IAEA's ability to verify the peaceful use of all nuclear material in States with comprehensive safeguards agreements.

2. Consider the following statements: Human capital formation as a concept is better explained in terms of a process which enables

- 1. individuals of a country to accumulate more capital.
- 2. increasing the knowledge, skill levels and capacities of the people of the country.
- 3. accumulation of tangible wealth.
- 4. accumulation of intangible wealth.

Which of the statements given above is/are correct?

- A. 1 and 2
- B. 2 only
- C. 2 and 4
- D. 1, 3 and 4

Answer: C

Explanation

- Human capital formation indicates, "the process of acquiring and increasing the number of persons who have the skills, education and experience which are critical for the economic and the political development of the country. Human capital formation is thus associated with investment in man and his development as a creative and productive resource."

- Intangible wealth consists of factors such as the trust among people in a society, an efficient judicial system, clear property rights, effective government, and good education system etc. Human capital formation enables accumulation of intangible wealth.

3. The Global Infrastructure Facility is a/an:

- A. ASEAN initiative to upgrade infrastructure in Asia and financed by credit from the Asian Development Bank.
- B. World Bank collaboration that facilitates the preparation and structuring of complex infrastructure Public-Private Partnership (PPPs) to enable mobilization of private sector and institutional investor capital.
- C. Collaboration among the major banks of the world working with the OECD and infrastructure projects that have the potential to mobilize private investment.
- D. UNCTAD funded initiative that seeks to finance and facilitate infrastructure development in the World

Answer: B

Explanation

- The World Bank (WB) has launched the GIF to specifically cater to the infrastructure needs of the emerging economies and developing countries. The GIF will channel money towards bankable infrastructure project in such countries. GIF also places importance on sustainable development. Its key focus will be on climate friendly infrastructure investments and projects that will boost trade.
- The GIF will collaborate with other international and multilateral agencies which provide loans and financial assistance to countries across the globe. It will also help these agencies with its expertise in financing, supervising and implementing projects. Another area where GIF could provide assistance is ensuring that all regulatory, environmental and social safeguards are met with while investing in large scale infrastructure projects. GIF will also work with private entities like asset management companies, private equity firms, pensions and insurance funds and commercial banks to tap into multiple sources of funding.

4. In which of the following relief sculpture inscriptions is 'Ranyo Ashoka' (King Ashoka) mentioned along with the stone portrait of Ashoka?

- A. Kanganahalli
- B. Sanchi
- C. Shahbazgarhi
- D. Sohgaura

Answer: A

Explanation

- Kanaganahalli is about 3 km from Sannati, Karnataka.

- Here, excavation found mentions 'Ranyo Ashoka' (King Ashoka) mentioned along with the stone portrait of Ashoka.

5. It is possible to produce algae based biofuels, but what is/are the likely limitation(s) of developing countries in promoting this industry?

1. Production of algae based biofuels is possible in seas only and not on continents.
2. Setting up and engineering the algae based biofuels production requires high level of expertise/ technology until the construction is complete.
3. Economically viable production necessitates the setting up of large scale facilities which may raise ecological and social concerns.

Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 3 only
- D. 1, 2 and 3

Answer: B

Explanation

- Production of algal biofuel is possible both in seas and on continents. They can grow on marginal or non-crop land and also on brackish or polluted water.
- Land based systems are more developed than sea based systems