

KSCSAPT 514 ans Explanation

1. a

Champaran Satyagraha (1917)—First Civil Disobedience.

Gandhi was requested by Rajkumar Shukla to look into the problems of the indigo planters, of Champaran in Bihar.

The European planters had been forcing peasants to grow indigo on 3/20 of the total land (called tinkathia system).

When Gandhi, joined now by Rajendra Prasad, Mazharul-Haq, Mahadeo Desai, Narhari Parekh, J.B. Kripalani, reached Champaran to probe into the matter, the authorities ordered him to leave the area at once. Gandhi defied the order and preferred to face the punishment. This passive resistance or civil disobedience of an unjust order was a novel method at that time. Gandhi was able to convince the authorities that the tinkathia system should be abolished and that the peasants should be compensated for the illegal dues extracted from them.

2. c

December 1920 at the Nagpur session of the Indian National Congress—

The programme of non-cooperation was endorsed;

An important change was made in Congress creed: now, instead of having the attainment of self-government through constitutional means as its goal, the Congress decided to have the attainment of swaraj through peaceful and legitimate means, thus committing itself to an extraconstitutional mass struggle;

Some important organizational changes were made: a Congress Working Committee (CWC) of 15 members was set up to lead the Congress from now onwards; Provincial Congress Committees on linguistic basis were organized; ward committees were organized; and entry fee was reduced to four annas;

Gandhi declared that if the non-cooperation programme was implemented completely, swaraj would be ushered in within a year. The Congress passed a resolution condemning the pomp and show of this Darbar at the cost of the poor Indians.

In this Darbar, the King declared that Capital of India will be transferred from Calcutta to Delhi.

It was also declared the Partition of Bengal is cancelled. East and West Bengal were joined and new provinces of Bihar, Orissa and Assam were formed.

3. c

Hindustan Republican Association (HRA) was a revolutionary organization of India established in 1924 at village Bholachang in East Bengal by Sachindra Nath Sanyal, Narendra Mohan Sen and Pratul Ganguly as an offshoot of Anushilan Samiti. Its objective was to establish a "Federated Republic of the United States of India" through an organized and armed revolution.

These young men did not like the theory of nonviolence. They had confidence that the British can be thrown out of the country by using of force and violence. At the same time, there were uprisings in other parts of world and one could witness a number of bloody revolutions and coupe de etat around the world. The result was that the old Yugantar and Anushilan samiti got awoken and a new breed of terroristic kind of revolutionaries emerged from the unenthusiastic and unsatisfied Non-cooperators.

The name was chosen as Hindustan Republican Association on the lines of Irish Republican Army. The manifesto of this revolutionary organization was "The Revolutionary".

Objective:

The Objective of the HRA was to establish "Federated Republic of the United States of India" through an organized armed revolution"

The tactics of HRA were killing the officials; organize political dacoities to raise funds, terrorism among the British and British loyalists and strikes against the raj.

Despite being a revolutionary terrorist organization {the term terrorist was not derogatory in those days as compared to today}, the perspective of the HRA was socialistic and it wanted to establish a United States of India by deposing the British.

Many other revolutionaries soon joined the HRA including Chandrashekhar Azad, Ashfaqullah Khan, Ram Prasad Bismil etc.

4. c

The Kakori Conspiracy (or Kakori train robbery or Kakori Case) was a train robbery that took place between Kakori and, near Lucknow, on 9 August 1925 during the Indian Independence Movement against the British Indian Government. The robbery was organised by the Hindustan Republican Association (HRA).

The robbery was conceived by Ram Prasad Bismil and Ashfaqullah Khan who belonged to the HRA, which later became the Hindustan Socialist Republican Association. This organisation was established to carry out revolutionary activities against the British Empire in India with the objective of achieving independence. Since the organisation needed money for purchase of weaponry, Bismil and his party decided to plunder a train on one of the Northern Railway lines.

It is believed that they looted that specific train because train was supposed to carry the money bags belonging to the British Government Treasury in the guard's cabin. One passenger was killed by an accidental shot, making it a murder case. They looted only these bags containing some 8,000 rupees and escaped to Lucknow while not a single Indian was looted, because the targets of the mission were:

To get money for the organisation which was intended to be taken from the opponent, the British Administration itself

To get some public attention by creating a positive image of the HRA among Indians to overcome the bad image created by British Administration

To shake the British Administration by robbing money from them

Following the incident, the British administration started an intense manhunt and arrested several of the revolutionaries involved in the HRA. Their leader, Ram Prasad Bismil, was arrested at Saharanpur on 26 September 1925, and his lieutenant, Ashfaqullah Khan, was arrested ten months later at Delhi.

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5. a

The Meerut Conspiracy Case was a controversial court case initiated in British India in March 1929 and decided in 1933. Several trade unionists, including three Englishmen were arrested for organizing an Indian railway strike. The British Government convicted 33 leftist trade union leaders under a false lawsuit. The trial immediately caught attention in England, where it inspired the 1932 play Meerut by Manchester street theatre group the 'Red Megaphones', highlighting the detrimental effects of colonisation and industrialisation.

The main charges were that in 1921 S.A. Dange, Shaukat Usmani and Muzaffar Ahmed entered into a conspiracy to establish a branch of the Comintern in India and they were helped by various persons, including the accused Philip Spratt and Benjamin Francis Bradley, sent to India by the Communist International. The aim of the accused persons, according to the charges raised against them was under section 121-A of the Indian Penal Code (Act 45 of 1860).

The Sessions Court in Meerut awarded stringent sentences to the accused in January 1933. Out of the accused 27 persons were convicted with various durations of 'transportation'. While Muzaffar Ahmed was transported for life, Dange, Spratt, Ghate, Joglekar and Nimbkar were each awarded transportation for a period of 12 years. On appeal, in August 1933, the sentences of Ahmed, Dange and Usmani were reduced to three years by Sir Shah Sulaiman Chief Justice of the Allahabad High Court, on the grounds that the accused had already spent a considerable part of their sentence in the jail. In more than one way the Meerut Conspiracy case trial helped the Communist Party of India to consolidate its position among workers.

6. a

The Factory Act -1881 (1st Act)

Children between age of 7-12, were to work for 9 hours/ day.

Employment of Children below 7 years was prohibited. Mid-day meal interval, 4 holidays/ month and fencing of machinery in the factory also provided.

This act applicable only to factories using mechanical powers, employing not less than 100 works and working for not more than 4 months in a year.

Factory Act-1891 (2nd Act)

Minimum age raised from 7 to 9 and between 9 and 14 the work limit was only for 8 hours with no work at night.

To women employment at night prohibited and work for 11 hours and 11/2 hrs. of rest allowed.

For all workers including male, a mid day stoppage and one days rest/ week was prescribed.

The act applied to all factories employing not less than 50 persons.

In 1906, textile factory and labour committee was appointed and on its report the factory act of 1911 was enacted.

Note: The Factories Act of 1881 was focused on children while the focus of 1891 Act was women.

7. b

The Civil Disobedience Movement was an important part of Indian freedom movement, led by Mahatma Gandhi. This non violence movement was started in 1930 AD mainly with the ideology of disobeying laws, demands and commands of the government.

Civil Disobedience Movement was started with Dandi March (also Salt march, Salt satyagraha) by Mahatma Gandhi on 12th March, 1930.

The British Government implemented heavy tax on production or sale of salt, they made it illegal to produce or sell salt without paying heavy tax to it. It affected the every Indian because salt is the primary ingredient in the daily diet.

8. b

The Aligarh Movement of Sir Syed Ahmad Khan was the foremost movement for social reforms among the Indian Muslims.

Aligarh Movement was a 'cultural movement' with the objective of 'regeneration of liberal values in literature, social life, education and religion'. Its main objective were the popularization of education and rationalization of religious tenets.

It was Titu Mir's Movement (not Aligarh Movement) who organized the Muslim peasants against Hindu landlords and British indigo planters.

The objective of the Aligarh movement was to ensure continued British support for its programmes. It assiduously supported all government legislation with a view to stamping out the stigma of disloyalty with which the entire Muslim community had been branded since the Rebellion of 1857 (therefore, the movement did not offer any serious threat to the British supremacy in India).

All-India Muslim League was the outcome of the Aligarh movement, so were many leaders of the League and the community.

9. c

Statement 3 is incorrect as it is related to Non-cooperation Movement.

The Civil disobedience movement was an important part of Indian freedom movement. It was led by Mahatma Gandhi against certain laws and commands of the ruling British Government.

10. c

Evaluation of Khilafat Non-Cooperation Movement

The movement brought the urban Muslims into, the national movement, but at the same time it communalized the national politics to an extent. Although Muslim sentiments were a manifestation of the spread of a wider anti-imperialist feeling, the national leaders failed to raise the religious political consciousness of the Muslims to a level of secular political consciousness. With the Non-Cooperation Movement, nationalist sentiments reached every nook and corner of the country and politicized every strata of population—the artisans, peasants, students, urban poor, women, traders etc. It was this politicization and activation of millions of men and women which imparted a revolutionary character to the national movement.

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Colonial rule was based on two myths—one, that such a rule was in the interest of Indians and two, that it was invincible.

The first myth had been exploded by the economic critique by Moderate nationalists.

The second myth had been challenged by satyagraha through mass struggle.

Now, the masses lost the hitherto all-pervasive fear of the colonial rule and its mighty repressive organs

11. d

Statement 1 is correct- Under this scheme, dedicated institutions will be designed to ensure necessary skill training and skill up gradation of the rural BPL youth to mitigate the unemployment problem.

Statement 2 is correct- RSETIs stand for Rural Self Employment Training Institutes. RSETIs are managed by Banks with active co-operation from the Government of India and State Government.

Statement 3 is incorrect- One RSETI is established in every district in the country.

More about the Scheme: These are promoted and managed by banks with active cooperation from state governments. RSETI concept is based on RUDSETI (Rural Development and Self Employment Training Institute), a society established jointly by three agencies i.e. Syndicate Bank, Canara Bank and Sri Manjunatheswara Trust based at Ujire in Karnataka. Concerned bank is the lead bank in the district takes responsibility for creating and managing it. Government of India will provide one - time grant assistance, upto a maximum of Rs. 1 crore for meeting the expenditure on construction of building and other infrastructure. After successful completion of the training, they will be provided with credit linkage assistance by the banks to start their own entrepreneurial ventures

12. b

The union of India includes states which shares federal powers with center. The territory of India includes the entire territory over which sovereignty is exercised. Apart from states it includes union territories (which does not share federal power with center) and other territories acquired by India.

The article 1 describes India, that is, Bharat as a 'Union of states'. Supreme Court in 1969 ruled that, settlement of border dispute between India and other countries does not require constitutional amendment. It can be done by executive action as it does not involve cession of Indian territory to foreign country.

13. a

The United Nations Paris Principles provide the international benchmarks against which national human rights institutions (NHRIs) can be accredited by the Global Alliance of National Human Rights Institutions (GANHRI

14. b

National Commission for Backward Classes Act extends to the whole of India except the State of Jammu and Kashmir.

The Commission shall examine requests for inclusion of any class of citizens as a backward class in the lists and hear complaints of over-inclusion or under-inclusion of any backward class in such lists and tender such advice to the Central Government as it deems appropriate.

The advice of the Commission shall ordinarily be binding upon the Central Government.

15. d

Article 323 A empowers the Parliament to provide for the establishment of administrative tribunals for the adjudication of disputes relating to recruitment and conditions of service of persons appointed to public services of the Centre, the states, local bodies, public corporations and other public authorities.

In pursuance of Article 323 A, the Parliament has passed the Administrative Tribunals Act in 1985. The act authorises the Central government to establish one Central administrative tribunal and the state administrative tribunals. This act opened a new chapter in the sphere of providing speedy and inexpensive justice to the aggrieved public servants.

The Central Administrative Tribunal (CAT) was set up in 1985 with the principal bench at Delhi and additional benches in different states.

The CAT exercises original jurisdiction in relation to recruitment and all service matters of public servants covered by it. Its jurisdiction extends to the all-India services, the Central civil services, civil posts under the Centre and civilian employees of defence services. However, the members of the defence forces, officers and servants of the Supreme Court and the secretarial staff of the Parliament are not covered by it.

16. d

Congress Response to Simon Commission.

The Congress session in Madras (December 1927) meeting under the presidency of M.A. Ansai decided to boycott the commission "at every stage and in every form". Meanwhile Nehru succeeded in getting a snap resolution passed at the session, declaring complete independence as the goal of the Congress.

Those who decided to support the Congress call of boycott included the Liberals of the Hindu Mahasabha and the majority faction of the Muslim League under Jinnah. Some others, such as the Unionists in Punjab and the Justice Party in the south, decided not to boycott the commission.

17. c

18. a

19. c

The commission presents an annual report to the President (not Parliament) upon their working.

The functions of the National Commission for SCs are:

(a) To investigate and monitor all matters relating to the constitutional and other legal safeguards for the SCs and to evaluate their working;

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(b) To inquire into specific complaints with respect to the deprivation of rights and safeguards of the SCs;

(c) To participate and advise on the planning process of socio-economic development of the SCs and to evaluate the progress of their development under the Union or a state; and so on.

The Central government and the state governments are required to consult the Commission on all major policy matters affecting the SCs.

20. a

21. a

The provisions of Part IX of the constitution relating to the Panchayats are not applicable to the Fifth Schedule areas. However, the Parliament may extend these provisions to such areas, subject to such exceptions and modifications as it may specify.

Under this provision, the Parliament has enacted the "Provisions of the Panchayats (Extension to the Scheduled Areas) Act", 1996, popularly known as the PESA Act or the Extension Act.

PESA, as the name says the extension is with regard to Scheduled Areas (Fifth Schedule Areas) and not Tribal areas (under Sixth Schedule).

22. d

The concept of a special category state was first introduced in 1969. The 5th Finance Commission decided to provide certain disadvantaged states with preferential treatment in the form of central assistance and tax breaks. Initially three states Assam, Nagaland and Jammu & Kashmir were granted special status but since then eight more have been included Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura and Uttarakhand.

Recently, states like Andhra Pradesh, Orissa, West Bengal, Bihar, Tamil Nadu are racing for the special status.

23. d

Several causes are attributed to the Vellore Mutiny. Indian sepoys had to experience numerous difficulties when they went to serve in the Company's army. The sepoys were forced to serve under the Company since their earlier patrons (the native chieftains) were all disappearing from the scene.

The strict discipline, practice, new weapons, new methods and uniforms were all new to the sepoys. Anything new appears to be difficult and wrong for a man who is well-settled in the old way of life for a long-time. Sir John Cradock, the commander-in-chief, with the approval of Lord-William Bentinck, the Governor of Madras, introduced a new form of turban, resembling a European hat. Wearing ear rings and caste marks were also prohibited.

The sepoys were asked to shave the chin and to trim the moustache. The sepoys felt that these were designed to insult them and their religious and social traditions. There was also a popular belief that this was the beginning of a process by which all of them would be converted to Christianity. The English treated the Indian sepoys as their inferior. There was the racial prejudice.

24. a

The objectives of the project are to address the legal needs of the marginalised and vulnerable sections of society, particularly women, children, and Scheduled Castes and tribal communities, who do not have the requisite means to ensure that their rights are guaranteed.

The Department of Justice has been implementing "Access to Justice for Marginalised People" with the UNDP's support. The first phase of the project (2009-2012) focused on both the demand as well as supply side of justice.

The "Access to Justice" project is being implemented in the eight North-Eastern States, and Jammu and Kashmir, at a total cost of Rs.30 crore for five years (2012-17).

25. b

Directly Observed Treatment Short-course (DOTS) strategy— India's TB control programme

Despite TB treatment being free, patients and their caregivers faced challenges, and these were related to coping with RNTCP's DOTS strategy. Poor patients residing in rural areas faced the greatest difficulty in overcoming the barriers. They had to travel long distances every alternative day to reach a DOTS centre, had to put up with inconvenient timings and "unfavourable attitude" of RNTCP staff –

Reschedule their daily routine to make the visit possible: Travel plus the long waiting period at DOTS centres meant that patients and their caregivers, who are mostly daily wagers, ended up missing work for at least half a day

No immediate medical attention to the side-effects and other issues faced by the patients

Lack of practice & lack of qualified practitioners to offer counselling

Private providers more accessible –

Can tailor their timings to suit their daily schedule

Can continue seeking treatment without losing their daily wages

Proximity to private practitioners

Provision of immediate medical attention when patients face side effects

Solution:

Having more number of DOTS centres to increase its proximity to a patient's residence

Bringing in more flexibility in terms of timings

Counselling especially in the initial stages of DOTS therapy— competence of health personnel involved in TB care should be strengthened and better communication between providers and patients should be achieved through appropriate training

Need to decentralise DOTS providers- Whoever is closer to the patients, including private doctors, pharmacists, teachers and anganwadi workers should be allowed to provide DOTS therapy

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The emphasis is more on achieving targets than being patient-friendly — This should change and RNTCP should seriously consider a “patient-centred approach to TB control, delivered with dignity and compassion” as its priority if it intends to provide “universal access to quality assured free diagnosis and treatment to patients”

26. d

The Ministry of Drinking Water and Sanitation, in partnership with Ministry of Youth Affairs and Sports, and Ministry of Water Resources, River Development and Ganga Rejuvenation, is intensifying support to the five States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal, to make all villages along the banks of the Ganga Open Defecation Free (ODF).

The campaign, being a collaborative effort between the Swachh Bharat Mission, local youth leaders () and the Namami Gange project () - is being called ‘Swachh -π’, which translates into ‘the age of Swachh

27. a

COMMUNAL AWARD AND POONA PACT

The Communal Award was announced by the British Prime Minister, Ramsay MacDonald, in August 1932. This was yet another expression of British policy of divide and rule. The Muslims, Sikhs and Christians had already been recognized as minorities. The Communal Award declared the depressed classes also to be minorities and entitled them to ‘separate electorates’.

Congress Stand Though opposed to separate electorates, the Congress was not in favour of changing the Communal Award without the consent of the minorities. Thus, while strongly disagreeing with the Communal Award, the Congress decided neither to accept it nor to reject it.

28. d

Mahagujarat movement, known as Mahagujarat Andolan locally, was a political movement demanding the creation of the state of Gujarat for Gujarati-speaking people from the bilingual Bombay state of India in 1956. It succeeded in the formation of Gujarat, as well as the Marathi-speaking Maharashtra state, on 1 May 1960.

The movement was led by Indulal Yagnik

29. d

Delhi Manifesto

On November 2, 1929, a conference of prominent national leaders issued a "Delhi Manifesto" which demanded

That the purpose of the Round Table Conference (RTC) should be to formulate a scheme for implementation of the dominion status (thus acting as a constituent assembly) and the basic principle of dominion status should be immediately accepted;

That the Congress should have majority representation at the conference;

amnesty and a general policy of conciliation; Viceroy Irwin rejected these demands on December 23, 1929. The stage of confrontation was to begin now.

GANDHI-IRWIN PACT

On January 25, 1931 Gandhi and all other members of the CWC were released unconditionally. The CWC authorized Gandhi to initiate discussions with the viceroy. As a result of these discussions, pact was signed between the viceroy, representing the British Indian Government, and Gandhi, representing the Indian people, in Delhi on February 14, 1931. This Delhi Pact, also known as the Gandhi-Irwin Pact, placed the Congress on an equal footing with the Government

30. c

31. b

Cryosphere – This is the system of the earth that includes all of the frozen, or solid, water of the earth. This includes all snow, ice, glaciers, icebergs, and the arctic climate. The Cryosphere is sort of like a sub sphere of the hydrosphere. This sphere places an important role in our global climate. It is also a key indicator of climate changes such as global warming. Thus option (b) is the correct answer.

Hydrosphere is a layer comprising of the solid, liquid, and gaseous water of the planet. Lithosphere is a layer that contains all of the cold, hard solid land of the planet's crust (surface).

32. b

The Indian Space Research Organization (ISRO) and Airports Authority of India (AAI) have implemented the GPS Aided Geo Augmented Navigation-GAGAN project as a Satellite Based Augmentation System (SBAS) for the Indian Airspace. The normal GPS system does not provide the necessary accuracy, integrity etc. required for civil aviation. The GPS system is to be augmented for this. Various countries have different Satellite Based Augmentation Systems (SBAS) and India is having GAGAN. Hence, statements 1 is not correct and statement 2 is correct.

GAGAN, though primarily meant for aviation, will provide benefits beyond aviation to many other user segments such as intelligent transportation, maritime, highways, railways, surveying, geodesy, security agencies, telecom industry, personal users of position location applications etc

33. c

Statement 1 is correct: The Australia Group is an informal arrangement which aims to allow exporting or transshipping countries to minimise the risk of assisting chemical and biological weapon (CBW) proliferation. The Group meets annually to discuss ways of increasing the effectiveness of participating countries' national export licensing measures to prevent would-be proliferators from obtaining materials for CBW programs. It was established in 1985 (after the use of chemical weapons by Iraq in 1984).

The principal objective of Australia Group participants' is to use licensing measures to ensure that exports of certain chemicals, biological agents, and dual-use chemical and biological manufacturing facilities and equipment, do not contribute to

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the spread of Chemical and Biological weapons (CBW). The Group achieves this by harmonising participating countries' national export licensing measures.

Statement 2 is not correct: Participants in the Australia Group do not undertake any legally binding obligations: the effectiveness of their cooperation depends solely on a shared commitment to CBW nonproliferation goals and the strength of their respective national measures.

Statement 3 is correct: Initially it consisted of 15 members, now with the incorporation of India on January 19, 2018, it now has 43 members. Nuclear Supplier Group (NSG), on the other hand consists of 48 members (India is not a member). All states participating in the Australia Group are parties to the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC). With this, India has become member of MTCR, Wassenaar Arrangement and Australia Group of multilateral export control group barring NSG.

34. a

Statement 1 is correct: It is also known as convention on cybercrime. It is the first international treaty seeking to address computer crime by harmonizing national laws, improving investigative techniques and increasing cooperation among nations. The Budapest Convention provides for the criminalisation of conduct, ranging from illegal access, data and systems interference to computer-related fraud and child pornography, procedural law tools to make investigation of cybercrime and securing of e-evidence in relation to any crime more effective, and international police and judicial cooperation on cybercrime and e-evidence.

Statement 2 is not correct: India is non- signatory of Budapest Convention. It has 56 members including US and UK. It was drawn up by the Council of Europe in Strasbourg in France, with the active participation of the Council of Europe's observer states Canada, Japan, South Africa and the United States. It was opened for signature in Budapest, on 23 November 2001 and it entered into force on 1 July 2004.

India is planning to join this convention soon

35. a

NASA has announced that it would launch two missions to explore the little-understood area of 96 km above Earth's surface. The Global-scale Observations of the Limb and Disk (GOLD) mission will be launched in January 2018, and the Ionospheric Connection Explorer (ICON) will be launched later this year. GOLD and ICON will team up to explore the ionosphere, a boundary area between Earth and the space where particles have been cooked into a sea of electrically-charged electrons and ions by the Sun's radiation. These layers of near-Earth space are increasingly becoming a part of human domain as it is home to radio signals used to guide airplanes, ships and Global Positioning System satellites

36. A

Equilibrium Climate Sensitivity (ECS) remains one of the most important unknowns in climate change science. ECS is defined as the global mean warming that would occur if the atmospheric carbon dioxide (CO₂) concentration were instantly doubled and the climate were then brought to equilibrium with that new level of CO₂. Despite its rather idealized definition, ECS has continuing relevance for international climate change agreements, which are often framed in terms of stabilization of global warming relative to the pre-industrial climate. Hence, option (a) is correct

37. D

Recently, Union Minister for Finance and Corporate Affairs launched the National CSR Data Portal. The National CSR Data Portal will capture information on CSR activities carried out by eligible companies, filed on the MCA21 registry in their financial statements. The filed information provides a snap shot of CSR activities carried out by companies. Its purpose is to bring accountability and transparency for corporate India and also facilitate social audit of CSR projects, besides bringing together CSR contributors, implementers and beneficiaries and aligning CSR activities with national development goals. It also reflects the government's commitment towards leveraging technology towards smart governance.

However, contribution of any amount directly or indirectly to any political party under section 182 of the Act, shall not be considered as CSR activity. Hence, option (d) is correct.

38. A

Astronomers, using the data from India's GMRT, have discovered two of the most powerful phenomena in the universe — a supermassive black hole and the collision of giant galaxy clusters about two billion light years from Earth. When the two neutron stars meet, their merger leads to the formation of either a more massive neutron star, or a black hole.

It is operated by the National Centre for Radio Astrophysics, a part of the Tata Institute of Fundamental Research, Mumbai. The Giant Meterwave Radio Telescope (GMRT) is being set up near Pune in India consisting of 30 numbers of 45-m diameter parabolic dishes.

At the time it was built, it was the world's largest interferometric array offering a baseline of up to 25 - kilometers.

One of the aims for the telescope during its development was to search for the highly redshifted 21-cm line radiation from primordial neutral hydrogen clouds in order to determine the epoch of galaxy formation in the universe.

39. C

SO₂ is not listed under hazardous gas list. It is widely used in industrial productions.

Over the last 10 years, India's SO₂ emissions have spiked by 50% and it could become the world's largest emitter of the toxic air pollutant

Government Action on SO₂

It's one of the pollutants being measured under Air Quality Index.

Increasing cess on coal production to Rs 400 per tonnes.

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Implementation of Bharat Stage Norms

Emission norms for Thermal power plant (2015): It directs them to reduce emission of PM 10, SO₂ and oxide of nitrogen

40. D

Carbon Dioxide Removal (CDR) also known as negative emission technologies refer to a number of technologies, the objective of which is the large-scale removal of carbon dioxide from the atmosphere. Among such technologies are bio-energy with carbon capture and storage, biochar, ocean fertilization, enhanced weathering, and direct air capture when combined with storage. CDR is a different approach than removing CO₂ from the stack emissions of large fossil fuel point sources, such as power stations. The latter reduces emission to the atmosphere but cannot reduce the amount of carbon dioxide already in the atmosphere. Bio-energy with carbon capture and storage (BECCS) is a future greenhouse gas mitigation technology which produces negative carbon dioxide emissions by combining bioenergy (energy from biomass) use with geologic carbon capture and storage. Biochar is charcoal used as a soil amendment. Biochar is a stable solid, rich in carbon, and can endure in soil for thousands of years. Like most charcoal, biochar is made from biomass via pyrolysis. Biochar is under investigation as an approach to carbon sequestration. Carbon capture and storage (CCS) (or carbon capture and sequestration or carbon control and sequestration) is the process of capturing waste carbon dioxide (CO₂) from large point sources, such as fossil fuel power plants, transporting it to a storage site, and depositing it where it will not enter the atmosphere, normally an underground geological formation. Ocean fertilization or ocean nourishment is a type of climate engineering based on the purposeful introduction of nutrients to the upper ocean to increase marine food production and to remove carbon dioxide from the atmosphere. A number of techniques, including fertilization by iron, urea and phosphorus have been proposed

41. C

Petroleum coke or pet coke is a solid carbon rich (90% carbon and 3% to 6% sulfur) material derived from oil refining. It is categorized as a "bottom of the barrel" fuel. It is a dirtier alternative to coal and emits 11% more greenhouse gases than coal. India is the world's biggest consumer of petroleum coke. It is an approved fuel in many states such as Andhra Pradesh, Telangana, Gujarat and Karnataka.

42. B

43. C

Life has a chance these days in Inner Mongolia's Kubuqi Desert, around 18,600 sq km of golden sand dunes that plunge south in an arc from China's Yellow River. Centuries of grazing had denuded the land of all vegetation, and the region's 740,000 people were wallowing in isolated poverty.

In 1988, the Chinese firm Elion Resources Group partnered with local people and the Beijing government to combat desertification. Almost three decades later, one third of Kubuqi has been greened. Special plants have been grown to grip the shifting sands and to prevent the dunes encroaching on farms and villages.

The Kubuqi project illustrates how private firms can tackle environmental degradation, boost livelihoods and safeguarding the planet — all while chasing profits for themselves. The scheme won Elion the 2013 Global Dryland Champion Award — a prize given out by the U.N. Convention to Combat Desertification — in recognition of the "tremendous impact" on local people's lives.

44. B

Ganga Gram Project

The Ministry of Drinking Water and Sanitation (MDWS) launched 'Ganga Gram' – a project for sanitation based integrated development of all 4470 villages along the River Ganga.

Ganga Gram vision is an integrated approach for holistic development of villages situated on the banks of River Ganga with active participation of the villagers. After achieving ODF target in Ganga Villages, implementation of solid and liquid waste management and other integrated activities are remaining tasks.

Ministry of Drinking Water and Sanitation is the nodal agency for implementation of the Ganga Gram Project.

45. C

The ozone hole is not technically a hole where no ozone gas is present, but is actually a region of exceptionally depleted ozone in the stratosphere over the Antarctica.

That happens at the beginning of southern hemisphere spring. Ozone hole can be formed anywhere in the stratosphere due to depletion of ozone molecules but as of today it is found only in the region above Antarctic continent which has favourable weather conditions like polar stratospheric clouds which aid the process of ozone hole formation.

In this particular region the ozone has depleted by 65% that is the reason it is called as ozone hole where as in other region it is 20%.

It is caused by CFCs, halons, carbon tetrachloride and methyl chloroform.

Montreal protocol on substances that deplete the ozone layer is the most successful international treaty till date which prohibits the production and consumption of compounds that deplete the ozone layer.

46. D

GEF provides grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

The Global Environment Facility (GEF) unites 183 countries in partnership with international institutions, civil society organizations (CSOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives. Today the GEF is the largest public funder of projects to improve the global environment.

The GEF also serves as financial mechanism for the following conventions:

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Convention on Biological Diversity (CBD)

United Nations Framework Convention on Climate Change (UNFCCC)

UN Convention to Combat Desertification (UNCCD)

Stockholm Convention on Persistent Organic Pollutants (POPs)

Minamata Convention on Mercury

47. A

Article 25 says “all persons are equally entitled to freedom of conscience and the right to freely profess, practice, and propagate religion subject to public order, morality and health.”

48. C

Standing Committees not only supervise the work of various departments but also their budget, their expenditure and bills that come up in the house relating to the department.

It is a permanent and regular committee which is constituted from time to time according to the provisions of an Act of Parliament or Rules of Procedure and Conduct of Business. The work done by the Indian Parliament is not only voluminous but also of a complex nature, hence a good deal of its work is carried out in these Parliamentary Committees. There are two types of Parliamentary Committee, the Standing Committee and the Ad hoc Committee. Public Accounts Committee is an example of Standing Committee. Members of the Standing committees are selected from both Houses, except for Estimates Committee where all the members are from Lok Sabha Only.

49. c

The World Wide Fund for Nature (WWF) is an international non-governmental organization founded in 1961, working in the field of the wilderness preservation, and the reduction of human impact on the environment. It was formerly named the World Wildlife Fund, which remains its official name in Canada and the United States. The Living Planet Report is published every two years by WWF since 1998; it is based on a Living Planet Index and ecological footprint calculation.

50. c

Earth Day

Earth Day is an annual event celebrated on April 22. Worldwide, various events are held to demonstrate support for environmental protection. First celebrated in 1970, Earth Day events in more than 193 countries[1] are now coordinated globally by the Earth Day Network.[2]

On Earth Day 2016, the landmark Paris Agreement was signed by the United States, China, and some 120 other countries. This signing satisfied a key requirement for the entry into force of the historic draft climate protection treaty adopted by consensus of the 195 nations present at the 2015 United Nations Climate Change Conference in Paris.

Earth Hour

Earth Hour is a worldwide movement organized by the World Wide Fund for Nature (WWF). The event is held annually encouraging individuals, communities, and businesses to turn off non-essential electric lights for one hour, from 8:30 to 9:30 pm on a specific day towards the end of March, as a symbol of commitment to the planet.[1] It was started as a lights-off event in Sydney, Australia, in 2007. Since then, it has grown to engage more than 7,000 cities and towns across 187 countries and territories.[2]

Occasionally, in years when Holy Saturday falls on the last Saturday of March, Earth Hour is moving a week early rather than its traditional date.

Earth Hour 2018 will be on March 24, from 8:30 pm to 9:30 pm.

51. B

InSight is a NASA spacecraft designed to burrow beneath the surface of Mars has landed on the red after a six-month, 482 million-km journey. It was NASA's ninth attempt to land at Mars since the 1976 Viking probes. All but one of the previous U.S. touchdowns was successful. NASA last landed on Mars in 2012 with the Curiosity rover. InSight is part of NASA's Discovery Program, managed by the agency's Marshall Space Flight Center in Huntsville, Alabama.

It will be the first mission to peer deep beneath the Martian surface, studying the planet's interior by measuring its heat output and listening for marsquakes, which are seismic events similar to earthquakes on Earth. It will use the seismic waves generated by marsquakes to develop a map of the planet's deep interior. The findings of Mars' formation will help better understand how other rocky planets, including Earth, were and are created. But InSight is more than a Mars mission – it is a terrestrial planet explorer that would address one of the most fundamental issues of planetary and solar system science – understanding the processes that shaped the rocky planets of the inner solar system (including Earth) more than four billion years ago.

InSight would delve deep beneath the surface of Mars, detecting the fingerprints of the processes of terrestrial planet formation, as well as measuring the planet's “vital signs”: Its “pulse” (seismology), “temperature” (heat flow probe), and “reflexes” (precision tracking).

InSight seeks to answer one of science's most fundamental questions: How did the terrestrial planets form? Previous missions to Mars have investigated the surface history of the Red Planet by examining features like canyons, volcanoes, rocks and soil. However, signatures of the planet's formation can only be found by sensing and studying its “vital signs” far below the surface. In comparison to the other terrestrial planets, Mars is neither too big nor too small. This means that it preserves the record of its formation and can give us insight into how the terrestrial planets formed. It is the perfect laboratory from which to study

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the formation and evolution of rocky planets. Scientists know that Mars has low levels of geological activity. But a lander like InSight can also reveal just how active Mars really is. InSight marks the 21st US-launched Mars mission.

InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) is on a 24-month mission. It will not be looking for life on Mars. It will study its insides as to what it is made of, how that material is layered and how much heat seeps out of it.

52. A

The Inclusive Wealth Report (IWR) is a biennial effort led by the UN Environment to evaluate the capacities and performance of the nations around the world to measure sustainability of economy and wellbeing of their people. The existing statistical systems in the countries are using System of Environment and Economic Accounts which are geared to measure flow- income. The flow would critically depend upon the health and resilience of capital assets like manufactured capital, human capital and natural capital.

A country's inclusive wealth is the social value (not dollar price) of all its capital assets, including natural capital, human capital and produced capital. The IWR 2018 builds on previous versions of the report (IWR2012 and IWR 2014) and advances methods of measuring the base of economy- capital of all types. It covers the period from 1990 to 2014, which is 25 years, which provides us with a picture of the changes in capital assets over almost a generation.

The methodologies for calculating components of human capital are enriched and updated. It has come up with alternative shadow prices of human capital (education and health), based on a non-parametric methodology called frontier analysis.

The results of the IWR 2018 covering 140 countries indicate that:

The Inclusive wealth (IW) in 135 countries was higher in 2014 compared to the level in 1990 and the global growth rate of IW was 44% over the indicated period, which implies an average growth rate of 1.8% per year. However, during the same period the global GDP growth per year was 3.4%, which is close to twofold of the annual growth rate of growth in IW.

In terms of Inclusive wealth per capita and Inclusive wealth per capita adjusted, 89 and 96 of the 140 countries saw increases over the study period compared to their levels in 1990.

The global level growth of each of the three capitals over the study period indicate that produced capital was growing at an average rate of 3.8% per year and health and education induced human capital was growing at 2.1%. Contrary, natural capital was decreasing at a rate of 0.7% per annum.

The structure of capital at the global scale as of 2014 has composed of produced capital (21%), human capital (59% of which 26% education induced human capital and 33% is health induced human capital), and natural capital (20%).

An overview of the basis for wealth estimation and explores how various types of conservation and development policies recognizing the tradeoff can be understood better with the help of inclusive wealth. The findings also suggest that over the past twenty years the negative wealth effects of a decline in natural capital have been offset by growth in human and physical capital.

The Inclusive Wealth Report 2018 demonstrates that assessing and valuing natural capital and the change in per capita inclusive/comprehensive wealth over time has the potential to keep track of progress on most Sustainable Development Goals (SDGs)

53. B

The Department of Industrial Policy and Promotion (DIPP) has announced the results of the first ever States' Start-up Ranking 2018.

DIPP began the exercise to review the Start-up ecosystem of the states from January 2016. The key objective of the exercise was to encourage States and Union Territories to take proactive steps towards strengthening the Start-up ecosystems in their states. The entire exercise was conducted for capacity development and to further the spirit of cooperative federalism.

The methodology behind the exercise was aimed at creating a healthy competition environment wherein States were encouraged further to learn, share and adopt good practices.

States' Startup Ranking 2018:

Best performer : Gujarat

Top Performers: Karnataka, Kerala, Odisha, and Rajasthan.

Leaders: Andhra Pradesh, Bihar, Chhattisgarh, Madhya Pradesh, and Telangana.

Aspiring Leaders: Haryana, Himachal Pradesh, Jharkhand, Uttar Pradesh, and West Bengal.

Emerging States: Assam, Delhi, Goa, Jammu & Kashmir, Maharashtra, Punjab, Tamil Nadu, and Uttarakhand.

Beginners: Chandigarh, Manipur, Mizoram, Nagaland, Puducherry, Sikkim, and Tripura.

Champions: 51 officers from States and Union Territories were identified as "Champions", who have made significant contributions towards developing their State's Start-up ecosystem.

54. A

The Hornbill Festival is a celebration held every year from 1 – 10 December, in Kohima, Nagaland. The first festival was held in the year 2000.

The festival is named after the Indian hornbill, the large and colourful forest bird which is displayed in the folklore of most of the state's tribes. Organized by the Nagaland State Tourism and Art & Culture Departments, the Festival showcases a mélange of cultural displays under one roof.

Festival highlights include the traditional Naga Morungs exhibition and the sale of arts and crafts, food stalls, herbal medicine stalls, flower shows and sales, cultural medley – songs and dances, fashion shows etc. The great hornbill (*Buceros bicornis*) also known as the great Indian hornbill or great pied hornbill, is one of the larger members of the hornbill family.

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The great hornbill is long-lived, living for nearly 50 years in captivity. It is predominantly fruit eating, but is an opportunist and preys on small mammals, reptiles and birds. Its impressive size and colour have made it important in many tribal cultures and rituals.

IUCN status: Vulnerable (uplisted from Near Threatened in 2018). It is also listed in Appendix I of CITES.

Pelican Bird Festival-2018' was recently organized at Kolleru lake. It was jointly organised by the Andhra Pradesh Tourism Authority (APTA) and Krishna district administration. Thousands of pelicans, painted storks and other birds will visit the lake during winter season, roost, breed and fly with their off springs. Recently, officials identified that Atapaka is one of the largest pelicanry in the world. Kolleru lake is one of the largest fresh water lakes in the country. It is located between Krishna and Godavari delta. It was declared as a wildlife sanctuary in 1999. It is a Ramsar site and is also listed as an Important Bird Area.

The lake is known to amateur birdwatchers and professional ornithologists as a Pelicanery — a location where the Grey Pelicans, a large magnificent bird, nest and breed. Grey pelicans had vanished from the lake in 1973 for nearly 35 years and returned to it to nest again in December 2006. The Grey Pelican also called the Spot Billed Pelican is listed in Schedule I of the Wildlife Protection Act and in the Red Data Book. It is also considered a "globally threatened species" under the "vulnerable" category.

Flamingo Festival is held every year to promote tourism in Pulicat and Nellapattu. Flamingo Festival is being organised for the past 12 years. Migratory birds from Siberia have been visiting this place for breeding and the colourful birds are a treat to the eye of bird watchers. Usually around 80 different avian species migrate to Pulicat for breeding. They hunt in shallow waters of the lake and breed in Pulicat. Once the breeding season concludes, they fly away to their native land with their offspring in tow. The conducive atmosphere for this seasonal avian guests is being conserved at Nelapattu bird sanctuary. About Nelapattu Bird Sanctuary: It is considered one of the biggest habitat for some hundreds of pelicans and other birds. Located about 20 km north of the Pulicat Lake on the Andhra Pradesh-Tamil Nadu border, the sanctuary is spread in about 459 hectares.

About Pulicat lake: It is the second largest brackish water lake or lagoon in India, after Chilika Lake. It straddles the border of Andhra Pradesh and Tamil Nadu states with over 96% of it in Andhra Pradesh. The lake encompasses the Pulicat Lake Bird Sanctuary. The barrier island of Sriharikota separates the lake from the Bay of Bengal and is home to the Satish Dhawan Space Centre. Two rivers which feed the lagoon are the Arani river at the southern tip and the Kalangi River from the northwest, in addition to some smaller streams. The Buckingham Canal, a navigation channel, is part of the lagoon on its western side.

Behdienkhlam, one of the most colourful festivals of the State, was recently celebrated in the Jaintia Hills, Meghalaya. Behdienkhlam is a major festival of the people in the Jaintia Hills. It is celebrated to invoke the gods for a bumper harvest and drive away plague.

It is the ritualistic expression of the relentless struggle of mankind to overcome the destructive forces of nature, including diseases, since the dawn of civilization. During the festival, decorated and colourful raths are immersed in 'Wah Ainar,' a muddy pool. The non-Christian 'Pnar' people who believe either in the traditional faith of 'Niamtre' or Hinduism observe this festival.

55. B

India's first engine-less train-breached the 180 kmph speed threshold during a test run in the Kota-Sawai Madhopur section, becoming the country's fastest train. If trials go well it may replace the Shatabdi Express soon.

Features

Aerodynamically designed driver cabins at both ends for quicker turn-around at destinations

Alternate coaches are motorized to ensure even distribution of power and faster acceleration or deceleration

Regenerative braking system to save power

Inter-connected, fully sealed gangways

Automatic doors with retractable footsteps

Onboard Wi-Fi and infotainment

GPS-based passenger information system

Modular toilets with bio-vacuum systems

Rotational seats which can be aligned in the direction of travel (executive class)

Roller blinds and diffused LED lighting

Disabled-friendly toilets

Emergency talk-back units to contact train crew

CCTVs in all coaches for safe and secure travel

56. B

CRISPR is a dynamic, versatile tool that allows us to target nearly any genomic location and potentially repair broken genes. It can remove, add or alter specific DNA sequences in the genome of higher organisms. CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) are sections of DNA and are sections of genetic code containing short repetitions of base sequences followed by spacer DNA segments. CAS-9 (CRISPR-associated protein 9) is an enzyme. It uses a synthetic guide RNA to introduce a double strand break at a specific location within a strand of DNA. It is a system used by bacterial cells to recognize and destroy viral DNA as a form of adaptive immunity.

The clustered, regularly interspaced, short palindromic repeats, or CRISPR/CRISPR-associated protein 9 (Cas9) (CRISPR-Cas9) system has revolutionised genetic manipulations and made gene editing simpler, faster and easily accessible to most

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laboratories. CRISPR technology is basically a gene-editing technology, that can be used for the purpose of altering genetic expression or changing the genome of an organism. The technology can be used for targeting specific stretches of an entire genetic code or editing the DNA at particular locations. CRISPR technology is a simple yet powerful tool for editing genomes. It allows researchers to easily alter DNA sequences and modify gene function.

Its many potential applications include correcting genetic defects, treating and preventing the spread of diseases and improving crops. However, its promise also raises ethical concerns.

57. D

In a significant decision, the Union Cabinet approved the building and development of the Kartarpur corridor from Dera Baba Nanak in Gurdaspur district to the international border, in order to facilitate pilgrims from India to visit Gurdwara Darbar Sahib Kartarpur on the banks of the Ravi river, in Pakistan, where Shri Guru Nanak Devji spent eighteen years. Pilgrims would then be able to visit the holy shrine throughout the year.

The Kartarpur corridor will be implemented as an integrated development project with Government of India funding, to provide smooth and easy passage, with all the modern amenities.

Government of India will put in place suitable facilities for smooth passage of pilgrims. Government of Pakistan will be urged to recognize the sentiments of the Sikh community and to develop a corridor with suitable facilities in their territory as well.

The gurdwara in Kartarpur stands on the bank of the Ravi, about 120 km northeast of Lahore. It was here that Guru Nanak assembled a Sikh community and lived for 18 years until his death in 1539. The shrine is visible from the Indian side, as Pakistani authorities generally trim the elephant grass that would otherwise obstruct the view. Indian Sikhs gather in large numbers for darshan from the Indian side, and binoculars are installed at Gurdwara Dera Baba Nanak.

Sikh jathas from India travel to Pakistan on four occasions every year — for Baisakhi, the martyrdom day of Guru Arjan Dev, the death anniversary of Maharaja Ranjit Singh, and the birthday of Guru Nanak Dev. These Indian pilgrims are given access to all gurdwaras in Pakistan.

58. B

59. C

The FRP is the minimum price that sugar mills have to pay to sugarcane farmers.

It is determined on basis of recommendations of Commission for Agricultural Costs and Prices (CACP) and after consultation with State Governments and other stake-holders.

The final FRP is arrived by taking into account various factors such as cost of production, domestic and international prices, overall demand-supply situation, inter-crop price parity, terms of trade prices of primary by-products and its impact on general price level and resource use efficiency.

60. D

Pradhan Mantri Sahaj Bijli Har Ghar Yojana – ‘Saubhagya’ was launched in September, 2017. Under Saubhagya free electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas will be provided.

Rural Electrification Corporation (REC) has been designated as nodal agency for the Saubhagya scheme. The scheme aims to achieve universal household electrification in all parts of the country. All DISCOMs including Private Sector DISCOMs, State Power Departments and RE Cooperative Societies shall be eligible for financial assistance under the scheme in line with Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY). Eligibility: The prospective beneficiary households for free electricity connections under the scheme would be identified using SECC 2011 data. However, un-electrified households not covered under SECC data would also be provided electricity connections under the scheme on payment of Rs. 500 which shall be recovered by DISCOMs in 10 instalments through electricity bill. Scope of the Scheme: Providing last mile connectivity and electricity connections to all un-electrified households in rural areas. Providing Solar Photovoltaic (SPV) based standalone system for un-electrified households located in remote and inaccessible villages / habitations, where grid extension is not feasible or cost effective. Providing last mile connectivity and electricity connections to all remaining economically poor un-electrified households in urban areas. Non-poor urban households are excluded from this scheme.

Pradhan Mantri Ujjwala Yojana (PMUY):

Providing LPG connections to BPL households will ensure universal coverage of cooking gas in the country. This measure empowered women and protect their health. It will reduce drudgery and the time spent on cooking. It will also provide employment for rural youth in the supply chain of cooking gas.

Pradhan Mantri Ujjwala Yojana – Scheme for Providing Free LPG connections to Women from BPL Households. This is the first time in the history of the country that the Ministry of Petroleum and Natural Gas would implement a welfare scheme benefitting crores of women belonging to the poorest households. Last month, the Pradhan Mantri Ujjwala Yojana (PMUY) completed two years of operation.

In our country, the poor have limited access to cooking gas (LPG). The spread of LPG cylinders has been predominantly in the urban and semi-urban areas with the coverage mostly in middle class and affluent households.

But there are serious health hazards associated with cooking based on fossil fuels. According to WHO estimates, about 5 lakh deaths in India alone due to unclean cooking fuels. Most of these premature deaths were due to non-communicable diseases such as heart disease, stroke, chronic obstructive pulmonary disease and lung cancer.

Indoor air pollution is also responsible for a significant number of acute respiratory illnesses in young children. According to experts, having an open fire in the kitchen is like burning 400 cigarettes an hour.

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Air pollution kills more Indians than any other risk factor with estimates ranging from 15 to 20 lakh premature deaths annually. Although outdoor air pollution garners most public attention, it is well-known in health circles that pollution from chulhas is about half of the problem because people in households are directly exposed to such pollution.

It is less well-understood, however, that the two are linked: One of the reasons India has such bad outdoor air pollution is that nearly 200 million households are still burning biomass every day for cooking. Solving the household dirty fuel problem will also help reduce the outdoor air problem, although not solve it on its own.

Achievements of the PMUY:

Under the scheme, now 8 crore LPG connections are to be provided to BPL households. The identification of eligible BPL families will be made in consultation with the State Governments and the Union Territories.

Pradhan Mantri Ujjwala Yojana (PMUY) aims to safeguard the health of women & children by providing them with a clean cooking fuel – LPG, so that they don't have to compromise their health in smoky kitchens or wander in unsafe areas collecting firewood. The ambitious scheme also laid down a condition — that the LPG connections will be issued in the name of the women of the households.

RYTHU SADHIKARA SAMSTHA

Climate Resilient Zero-budget Natural Farming Programme (ZBNF) by Government of Andhra Pradesh

Rythu Sadhikara Samstha, Guntur/Vijayawada is a Section 8 Company set up by Government of AP, specifically mandated to implement the natural farming programme covering 500000 farmers across all 13 districts of Andhra Pradesh during the period 2017-22 with scaling-up to reach all 55-60 lakh farmers by 2024. The objectives are to promote climate resilient, chemical free, ecological agriculture across all agro climatic zones; and to provide small and marginal farmers with profitable livelihoods from agriculture. Taken up under Rashtriyav Krishi Vikas Yojana (RKVY), Paramparagath Krishi Vikas Yojana (PKVY) and State plan with an outlay of Rs. 750 crore over a period of 5 years, RySS has also partnered with AzimPremji Philanthropic Initiatives for setting up of its Technical Support Unit.

The 7 key USPs of the programme are :

- I. Farmer to farmer dissemination- each cluster shall have 3 – 4 master farmers who shall train farmers to adopt ZBNF through intensive persuasion, household visits, Farmer Field School, video disseminations, etc
- II. Human-mediated digital extension-video dissemination every day
- III. Farmer friendly content and Package of Practices - A comprehensive ZBNF workbook, Primers, and Crop Cards.
- IV. Dedicated state/district resource pools with unique collaboration of farmers, civil society organizations, scientists and Agriculture department officials
- V. Accessibility of ZBNF inputs through village level input shops and custom hiring centres
- VI. Farmers Institutions (Men farmer SHGs, their village farmers' federations, cluster farmers' federations and Farmer Producer Organizations) for solidarity, learning, savings, credit, vulnerability reduction, insurance, aggregation of produce, local marketing, quality assurance and traceability, etc.
- VII. ICT backbone down to each farmer to e-track the progress, and an exclusive you tube channel.

Pradhan Mantri Awas Yojana- Housing for All (Urban)

Ministry/Department : Ministry of Housing & Urban Affairs

It is the vehicle to achieve objective of "Housing for All" Mission in Urban areas.

Scheme:

The aim of this scheme is to construct more than two crore houses across the length and breadth of the nation.

The target beneficiaries of the scheme would be poor and people living under EWS and LIG categories in urban establishments of the country.

It also targets people living under MIG (middle income Group).

Government will provide subsidy ranging between 1 lakh to 2.30 lakh to people from above categories in order to make them secure.

The government would provide an interest subsidy of 6.5% on housing loans availed by the beneficiaries for a period of 15 years from the start of loan.

The houses under Pradhan Mantri Awas Yojana would be allotted to preferably the female member of the family.

All details of "Housing for All by 2022" Mission are also applicable here.

It covers the entire urban area consisting of 4041 statutory towns with initial focus on 500 Class I cities.

It also targets people living under MIG (middle income Group)

61. A

In pursuit of cooperative and competitive federalism, NITI Aayog has been laying emphasis on developing indicators on various social sectors.

CWMI has been developed by NITI Aayog comprising 9 broad sectors with 28 different indicators covering various aspects of ground water, restoration of water bodies, irrigation, farm practices, drinking water, policy and governance (Box-1). For the purposes of analysis, the reporting states were divided into two special groups – 'North Eastern and Himalayan states' and 'Other States', to account for the different hydrological conditions across these groups.

In February 2018, NITI Aayog had released a report on "Healthy States, Progressive India" which covered the ranking of States/ UTs in various health parameters.

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As a step further in direction and keeping in view the criticality of water for life, NITI Aayog has prepared a report on Composite Water Management Index (CWMI).

The CWMI is an important tool to assess and improve the performance of States/ Union Territories in efficient management of water resources.

This has been done through a first of its kind water data collection exercise in partnership with Ministry of Water Resources, Ministry of Drinking Water & Sanitation and all the States/ Union Territories.

The index would provide useful information for the States and also for the concerned Central Ministries/Departments enabling them to formulate and implement suitable strategies for better management of water resources. Simultaneously a web portal on the subject has also been launched.

62. D

The basic principle behind the vaccination/immunization is that the pathogen is introduced into the body either in the live attenuated/killed form, to generate memory cells. <Why and How of this will be explored in a short while>

A vaccine will generate a primary immune response which helps in establishing the memory about the foreign antigen. This is what principally happens in the body, when a vaccine is provided into the body.

Injectable Polio Vaccine is made up of heat-killed virus that cannot cause the disease in any case, because the pathogen is not alive. However, it does produce the memory in the cells, required for immunity.

Oral Polio Vaccine is made up of live-attenuated virus, which is nearly incapable of producing an infection. This type of vaccination helps in providing immunity to wild-type of virus.

National Technical Advisory Group on Immunisation (NTAGI) recommended that India should introduce Injectable vaccine, as we have achieved polio free status.<wild type infection only>

India is introducing IPV in its Universal Immunization Programme (UIP).

There will be shift from tri-valent variety OPV(P1, P2 and P3) to bivalent OPV (P1 and P3), so as to reduce incidence of vaccine-derived poliovirus.

However, IPV will be administered for all the 3 strains of virus, providing immunity to a child from all 3 strains.

IPV will be given in addition to existing OPV, in order to boost population immunity.

The wild-type P2 variant was eliminated in 1999. As, it will not be administered in OPV form, the propensity to manifest as a vaccine derived infection will be countered.

IPV requires skilled professional, as the vaccine needs to be injected.

63. A

A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place.

A geographical indication right enables those who have the right to use the indication to prevent its use by a third party whose product does not conform to the applicable standards. For example, in the jurisdictions in which the Darjeeling geographical indication is protected, producers of Darjeeling tea can exclude the use of the term "Darjeeling" for tea not grown in their tea gardens or not produced according to the standards set out in the code of practice for the geographical indication.

India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration & Protection) Act, 1999 has come into force with effect from 15th September 2003.

Darjeeling Tea was the first Indian product to get the geographical indication tag. In 2004, the famous beverage got the recognition.

India has 236 GI products registered so far and over 270 more products have applied for the label.

Madhya Pradesh

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Sl.No	Geographical Indication	Type
1.	Chanderi Fabric	Handicraft
2.	Leather Toys of Indore	Handicraft
3.	Bagh Prints of Madhya Pradesh	Handicraft
4.	Bell Metal Ware of Datia and Tikamgarh (Logo)	Handicraft
5.	Bell Metal Ware of Datia and Tikamgarh	Handicraft
6.	Maheshwar Sarees & Fabrics	Handicraft

64. A

China has launched Chang'e-4, a first probe ever to explore the dark side of the Moon, marking another milestone in its ambitious space programme.

The Moon is tidally locked to Earth, rotating at the same rate that it orbits our planet, so the far side is never visible from Earth. The probe, the Chang'e-4, is expected to make the first-ever soft landing on the far side of the Moon. Previous spacecraft have seen the far side of the Moon, but none has landed on it.

The far side of the moon known as 'South Pole-Aitken Basin' still remains a mystery among space scientists and by sending a probe there, China will outdo the historical achievements of the US and USSR.

Chang'e 4 is the fourth mission in the country's lunar mission series which is being named after the Chinese moon goddess.

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The tasks of the Chang'e-4 probe include low-frequency radio astronomical observation, surveying the terrain and landforms, detecting the mineral composition, and measuring the neutron radiation and neutral atoms to study the environment on the far side of the moon.

According to experts, landing on the far side of the moon is undoubtedly one of the most challenging missions ever launched by any of the world's superpowers.

About TESS mission:

The Transiting Exoplanet Survey Satellite (TESS) is a NASA mission that will look for planets orbiting the brightest stars in Earth's sky. It was led by the Massachusetts Institute of Technology with seed funding from Google.

Mission: The mission will monitor at least 200,000 stars for signs of exoplanets, ranging from Earth-sized rocky worlds to huge gas giant planets. TESS, however, will focus on stars that are 30 to 100 times brighter than those Kepler examined. This will help astronomers better understand the structure of solar systems outside of our Earth, and provide insights into how our own solar system formed.

Orbit: TESS will occupy a never-before-used orbit high above Earth. The elliptical orbit, called P/2, is exactly half of the moon's orbital period; this means that TESS will orbit Earth every 13.7 days. Its closest point to Earth (67,000 miles or 108,000 kilometers) is about triple the distance of geosynchronous orbit, where most communications satellites operate.

It will use transit method to detect exoplanets. It watches distant stars for small dips in brightness, which can indicate that planet has passed in front of them. Repeated dips will indicate planet passing in front of its star. This data has to be validated by repeated observations and verified by scientists.

TESS is designed to build on the work of its predecessor, the Kepler space telescope, which discovered the bulk of some 3,700 exoplanets documented during the past 20 years and is running out of fuel.

Nasa expects to pinpoint thousands more previously unknown worlds, perhaps hundreds of them Earth-sized or "super-Earth" sized – no larger than twice as big as our home planet.

Those are believed the most likely to feature rocky surfaces or oceans and are thus considered the best candidates for life to evolve. Scientists have said they hope TESS will ultimately help catalog at least 100 more rocky exoplanets for further study in what has become one of astronomy's newest fields of exploration. Lunar Atmosphere and Dust Environment Explorer (LADEE) is NASA's space craft.

65. B

Deep Earth is the region that exists between 2 Km and 3 Km below the ocean-floor. Deep Earth Biosphere constitutes "Subterranean Galapagos" which includes members of all three domains of life – Bacteria, Archae, Eukarya

70 % of the Earth's bacteria and Archea live in the subsurface. Bacteria and Archea have no membrane bound nucleus while eukarya have well defined nucleus.

66. C

Madhya Pradesh became the first state in India to have 'Happiness Department' that will work as knowledge resource centre on the subject of happiness.

The Happiness Department will work under a working committee headed by a chairman. The committee will evaluate the state's gross happiness. The department will prepare guidelines for coordination between different departments like women and child development, health, and sports for propagating happiness in the state.

67. C

The One China policy is a key cornerstone of Sino-US relations. It is the diplomatic acknowledgement of China's position that there is only one Chinese government.

Under the policy, the US recognizes and has formal ties with China rather than the island of Taiwan, which China sees as a breakaway province.

China insists Taiwan is an inalienable part of one China. So, any country that wants diplomatic relations with mainland China must break official ties with Taipei.

Since, the US established formal diplomatic ties with Beijing in 1979, it had to sever ties with Taiwan and closed its Taipei embassy. This has resulted in Taiwan's diplomatic isolation from the international community.

The 'One-China' policy can be traced back to 1949 and the end of the Chinese civil war.

The defeated Nationalists, also known as the Kuomintang, retreated to Taiwan and made it their seat of government while the victorious Communists began ruling the mainland as the People's Republic of China.

Both sides said they represented all of China. Since then China's ruling Communist Party has threatened to use force if Taiwan ever formally declares independence.

Initially, many governments including the US recognised Taiwan and they shied away from Communist China.

But the mutual need to develop relations with China begun in the 1970s, and as a result, the US and other countries started cutting ties with Taipei in favour of Beijing.

68. A

The Organization of the Petroleum Exporting Countries (OPEC) is a group of oil-producing nations that was first established in Baghdad, Iraq, in 1961. OPEC is one of the most powerful international organizations in the world and was a major player in the shift towards state control over natural resources.

The OPEC Statute distinguishes between the Founder Members and Full Members – those countries whose applications for membership have been accepted by the Conference.

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The Statute stipulates that “any country with a substantial net export of crude petroleum, which has fundamentally similar interests to those of Member Countries, may become a Full Member of the Organization, if accepted by a majority of three-fourths of Full Members, including the concurring votes of all Founder Members.”

The Statute further provides for Associate Members which are those countries that do not qualify for full membership, but are nevertheless admitted under such special conditions as may be prescribed by the Conference.

Currently, the Organization has a total of 15 Member Countries. The current OPEC members are the following: Algeria, Angola, Ecuador, Equatorial Guinea,

Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, the Republic of the Congo, Saudi Arabia, United Arab Emirates, and Venezuela. Indonesia is a former member, and Qatar will no longer be the member of OPEC starting on 1 January 2019.

69. A

IWAI is the statutory body in charge of the waterways in India.

Its headquarters is located in Noida, UP.

Its main function is to build the necessary infrastructure in the inland waterways, surveying the economic feasibility of new projects and also carrying out administration and regulation.

It undertakes projects for development and maintenance of IWT infrastructure on national waterways through grant received from Ministry of Shipping.

Inland Waterways Authority of India (IWAI) launched a new portal LADIS – Least Available Depth Information System. Least Available Depth Information System Portal :

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IWAI has designed LADIS to facilitate the day to day operations of inland vessels plying on National Waterways and to avoid any hindrance in service and operation.

It will enhance credibility and efficiency of information sharing to achieve seamless operations on National Waterways, besides pre-empting problems that may occur during movement of vessels.

LADIS will ensure that real-time data on least available depths is disseminated for ship/barge and cargo owners so that they can undertake transportation on NWs in a more planned way.

The portal being hosted on IWAI’s website iwai.nic.in has been developed in-house.

Initially LAD information will be available for NW-1, NW-2, Indo-Bangladesh Protocol route and NW-3, along with the date of survey.

Utility of the Portal

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An assured depth of waterway is required for seamless movement of vessels.

If real time information is made available regarding LADs in stretches of various NWs, it will help transporters by guiding them on the suitability of time of movement.

70. A

The H1B visa is a non-immigrant visa that allows companies to employ foreigners for a period of up to six years. This visa is aimed at helping companies employ foreigners in positions for which they have been unable to find American employees. The minimum salary for an employee holding the H1B visa is set at \$60,000 per year. H1B visa holders are allowed to apply for permanent residency in the US as well as buy or sell property in the country.

The new H1B visa reform bill proposes a radical overhaul of the process, increasing the minimum salary for visa holders to be \$130,000, more than double the current minimum. This would mean that companies would have to either pay rather highly for the skilled workers, or not choose foreign employees in favour of American citizens.

The new visa reform bill also eliminates the category of lowest pay, and raises the salary level at which H1B dependent employer are exempt from non-displacement and recruitment attestation requirements to greater than \$130,000.

The H1B visa bill removes the ‘per country’ cap for employment-based immigrant visas.

It sets aside 20% of the annually allocated H1B visas for small companies and startup employers (50 or fewer employers) to ensure small businesses have an opportunity to compete for high-skilled workers.

The Bill encourages companies to recruit American workers. This provision would crack down on outsourcing companies that import large numbers of H-1B and L-1 workers for short training periods and then send these workers back to their home country to do the work of Americans.

It explicitly prohibits replacement of American workers by H1-B or L-1 visa holders.

The Bill seeks to give the Department of Labour enhanced authority to review, investigate and audit employer compliance as well as to penalize fraudulent or abusive conduct.

71. A

Indonesia lies on the Pacific ring of fire. This makes Indonesia vulnerable to earthquakes. Indonesia also houses 127 active volcanoes and one of these volcanoes is the Anak Krakatau. Anak Krakatau is a volcanic island formed in 1927 after the Krakatoa volcano eruption. The Anak Krakatau was erupting from June 2018. The authorities have warned that there can be an eruption again and have advised people to stay away from the coast for a while. The Tsunami which Indonesia witnessed on 22nd December is attributed to the collapse in the west-southwest flank of the Anak Krakatau volcano. Ring of Fire is an area in the Pacific Ocean where earthquakes and volcanic eruptions are frequent. The Ring of Fire is a direct result of the movement and collisions of lithospheric plates of the earth

KSCSAPT 514 ans Explanation

72. C
COP24 is the informal name for the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC).

The COP takes decisions to ensure effective implementation of the provisions of the Convention and regularly reviews the implementation of these provisions.

UNFCCC is an international environmental treaty, entered into force on 21 March 1994. Now, it has near-universal membership. The UNFCCC has 197 parties as of December 2015. Aim of the UNFCCC is to prevent 'dangerous' human interference with the climate system. The Union Environment Minister Dr. Harsh Vardhan participated in the inauguration of Indian Pavilion at the 24th meeting of Conference of Parties (COP-24) to the United Nations Framework Convention on Climate Change (UNFCCC) held at Katowice, Poland.

73. D
The Prime Minister Narendra Modi, dedicated the Bogibeel bridge in Assam, to the nation. Additionally, on the northern bank of the Brahmaputra, the Prime Minister also flagged passenger train passing through the bridge.

Significance of the Bridge:

The bridge spanning the River Brahmaputra between Dibrugarh and Dhemaji districts of Assam is of immense economic and strategic significance.

This bridge is a marvel of engineering and technology.

This bridge reduces distances between Assam and Arunachal Pradesh.

This bridge would greatly enhance "ease of living" in the region.

The bridge is 4.94 km long and is India's longest railroad bridge.

Since Dibrugarh is an important centre of healthcare, education and commerce in the region, and the people living north of the Brahmaputra, can now access this city, more conveniently.

The Bogibeel project was a part of the 1985 Assam Accord and was sanctioned in 1997-98. The Bogibeel Bridge, which will have a serviceable period of around 120 years, is India's only fully welded bridge for which European welding standards were adhered to for the first time in the country.

74. D
All the 12 Himalayan states in India are extremely vulnerable to global warming with Assam, Mizoram and J&K topping the list says a report.

Climate Vulnerability Assessment

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The report titles 'Climate Vulnerability Assessment for the Indian Himalayan Region Using a Common Framework'.

It is submitted by IIT Mandi and IIT Guwahati in collaboration with IISc Bangalore presents a chilling vulnerability map and assessment for the Indian Himalayan Region.

The study is based on four broad indicators in each state:

Economic and sociological status of the people and their health,

Possible impact on agriculture production,

Forest-dependent livelihoods

Access to information services and infrastructure.

States having low per capita income, low area under irrigation and low area under forests per 1,000 households and high area under open forests received a high vulnerability score.

Assam has the least area under irrigation, least forest area available per 1,000 rural households and the second lowest per capita income among the other IHR states, and thus scores the highest vulnerability score.

75. D

76. C

The Global Burden of Disease Study (GBD) is a comprehensive regional and global research program of disease burden that assesses mortality and disability from major diseases, injuries, and risk factors. GBD is a collaboration of over 1,800 researchers from 127 countries. Under principal investigator Christopher J.L. Murray, GBD is based out of the Institute for Health Metrics and Evaluation (IHME) at the University of Washington and funded by the Bill and Melinda Gates Foundation.

77. C

Nomadic and Denotified Tribes (NT-DNTs) are social groups that have been subjected to historical injustices both in the colonial and free India. During the British rule, the Criminal Tribes Act, 1871 was passed, which notified most nomadic communities as criminals. The Act implied that these communities were criminal by birth and practiced crime as a profession. The Act gave the colonial administration the power to brand, penalise, segregate and forcibly sedentarise nomadic communities.

On August 31, 1952, the Act was repealed. Ten million people from NT-DNTs celebrate this day as their independence day. For our forefathers, without a doubt, it was a moment worth celebrating. They believed that future generations could live lives as nomads, free from discrimination. Unfortunately, the joy was short lived. The independent Indian political elite was no

KSCSAPT 514 ans Explanation

different from the colonial rulers. British-free India did not provide any space to the nomadic way of life, either in their policies or in their nation-building process. Despite being “denotified”, we are stigmatised and labelled as criminals. Narratives from the community show the extent to which this has affected individuals and the community.

78. D

Asia-Pacific Economic Cooperation (APEC), organization that seeks to promote free trade and economic cooperation throughout the Asia-Pacific region. Established in 1989 in response to the growing interdependence of Asia-Pacific economies and the advent of regional economic blocs (such as the European Union and the North American Free Trade Area) in other parts of the world, APEC works to raise living standards and education levels through sustainable economic growth and to foster a sense of community and an appreciation of shared interests among Asia-Pacific countries. At the end of the 1990s APEC's membership included its 12 founding members—Australia, Brunei, Canada, Indonesia, Japan, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, and the United States—as well as Chile, China, Hong Kong, Mexico, Papua New Guinea, Peru, Russia, Taiwan, and Vietnam. The Pacific Economic Cooperation Council (PECC), the South Pacific Forum (SPF), and the secretariat of the Association of Southeast Asian Nations (ASEAN) maintain observer status.

79. D

80. A

81. C

Social forestry is, in effect, an integral part of the Gandhian philosophy of economic growth and community development. It was being realized that forests were under pressure because of the growing population, and land was getting degraded due to human activities. So The National Commission on Agriculture of the Indian government used the term “social forestry” for the first time in 1973.

Social Forestry and Farm Forestry:

Social Forestry means the management and protection of forests as well as afforestation of barren lands with purpose of helping in the environmental, Social and rural development. Social forestry is forestry for community development. Thus, it is people oriented, value based management of forests with a major objective of satisfying the needs, wants and aspirations of both the people and the government.

Under Farm forestry, farmers grow trees for commercial and non-commercial purposes on their lands. In Farm forestry tree plantation and management is purely on private lands. Individual farmers are encouraged to plant trees on their own farmland to meet the domestic needs of the family.

Importance of Social and Farm Forestry:

A) Ecological Importance:

They foster ecological balance with proper utilization of farm resources.

They provide efficient conservation of water and soil.

They utilise wasteland and degraded lands.

They induce environmental and tree consciousness among people

They help to reduce pressure on natural forests.

B) Economic Importance:

They meet the local needs for firewood, timber, bamboo, fuel and fodder and other minor forest produce.

They provide employment opportunities to the rural people.

They help to increase in levels of farm income due to improved and sustained productivity.

C). Social Importance:

They develop local cottage industries by providing raw materials.

They help to achieve an all-round rural development as a part of integrated rural development programme.

They provide stabilization in agricultural production.

For a determined adoption of these forestry schemes on private/ communal lands economic incentives will be helpful.

These will include supply of seeds and

seedlings free or at a nominal cost, grant of subsidies for tree planting, technical aid, training and briefing on marketing trends, and organization of forest cooperatives.

Critically discuss the importance of social forestry programme in combating climate change. Also comment on its implementation in India. (200 Words)

Social forestry emphasis on development of trees outside the forest. Groups of social forestry:

Farm forestry,

Community forestry,

Extension forestry

Agro-forestry

Objective of social forestry

To decreases dependency on natural forest for fuel wood, poles, timber and fodder.

To create jobs.

KSCSAPT 514 ans Explanation

To protect environment and aid agriculture.

Advantages of social forestry:

Decrease pressure on natural forest by increases production of timber, fuel wood, fodder etc.

Cover barren lands.

Raw material for pulp industry.

Employment generation in rural areas.

Forest restoration and improve ecological balance.

Help in research.

Importance of social forestry programme in combating climate change.

Increase in carbon stocks.

Act as Co2 sinks.

Mitigates air pollution.

Acts as alternative source of forest , which help in controlling deforestation which in turn reduce contribution of carbon from deforestation.

Implementation in India:

Social forestry started in India mid of 80s with financial assistance of World Bank and European Union. It helped in conservation and afforestation of forest. The forest policy act 1988 supported the social forestry which made it as people's movement. Government initiatives to support social forestry like MGNREGA, Silviculture and Forestry Research, Natural Regeneration and Enrichment of Forests etc. and Awareness campaigns like of Van Mahotsava, environment day, wildlife week.

82. D

The Central Pollution Control Board (CPCB) of India is a statutory organisation under the Ministry of Environment and Forests (MoEF). It was established in 1974 under the Water (Prevention and Control of pollution) Act, 1974. CPCB is also entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. It serves as a field formation and also provides technical services to the Ministry of Environment and Forests under the provisions of the Environment (Protection) Act, 1986. It Co-ordinates the activities of the State Pollution Control Boards by providing technical assistance and guidance and also resolves disputes among them. It is the apex organisation in country in the field of pollution control, as a technical wing of MoEF.

83. D

Primary Pollutants Persist in the form in which they are added to the environment for ex. DDT, Plastic

Secondary Pollutants Formed by interaction among primary pollutants viz. PAN by interaction of NO_x & Hydrocarbons

Biodegradable Pollutants Waste products which are degraded by microbial action for ex. Sewage

Non-Biodegradable Pollutants Not decomposed by microbial action for ex. Plastic, Glass, DDT, Radioactive substances

Quantitative Pollutants Occur in nature & become pollutant when their concentration reaches beyond a threshold level for ex. CO₂, NO_x

Qualitative Pollutants Do not occur in nature & are man-made for ex. fungicides, herbicides, DDT

84. D

1. Volcanoes: Volcanic activity produces smoke, ash, carbon dioxide, sulfur dioxide and other air pollutants.

2. Geysers: The air pollutants emitted by geysers include hydrogen sulfide, arsenic and other heavy metals.

3. Digestive gases: Methane and other gases generated by the digestion of food and emitted by animals such as cattle.

4. Oceans, Rivers and Estuaries: These are sources of methane emissions thought to be caused by the digestive systems of marine life, methanogenesis in sediments and drainage areas along coastal regions, and possibly seepage from methane hydrates on the ocean floors.

5. Dust: Windblown dust from areas with little or no vegetation such as desert areas.

6. Sea salt: Wind-blown sea water which evaporates in the atmosphere and releases sodium chloride and other particulates into the atmosphere.

7. Radioactive decay: Radon gas is released into the atmosphere by radioactive decay occurring in the Earth's crust.

85. D

SAFAR stands for System of Air Quality and Weather Forecasting And Research

It is a research program to build Air-Pollution mitigation strategies in consonance with nation's economic development

It is launched in greater metropolitan cities of India to provide location specific information on air quality in near real time

KSCSAPT 514 ans Explanation

It has been combined with the early warning system on weather parameters

The ultimate objective of the project is to increase awareness among general public regarding the air quality in their city well in advance so that appropriate mitigation measures and systematic action can be taken up for betterment of air quality and related health issues.

SAFAR was developed indigenously by Indian Institute of Tropical Meteorology (IITM), Pune and operationalized by India Meteorological Department (IMD).

Pollutants monitored: PM1, PM2.5, PM10, Ozone, CO, NO_x (NO, NO₂), SO₂, BC, Methane (CH₄), Non-methane hydrocarbons (NMHC), VOC's, Benzene, Mercury.

Monitored Meteorological Parameters: UV Radiation, Rainfall, Temperature, Humidity, Wind speed, Wind direction, sola

86. A

Oil is a complex mixture, it contains four major fractions of hydrocarbons and floats on water because of high surface tension.

During an Oil Spill dispersants are used which reduce the surface tension between oil and water allowing oil to dilute and spread or it will fall to the ocean floor.

However, using dispersants are not a solution because the oil won't be visible but it will remain in the water. Also, most dispersants are man-made chemicals and some are toxic.

To address such concerns Dr Banwari Lal's team at TERI developed Oilzapper, a patented light brown powder that is a cocktail of four different bacteria that degrade these hydrocarbons. The powder can be used both on the sea and also on land.

Patent for this technology, for which the patent is held by a joint ONGC TERI Biotech Ltd and was used during the last major oil spill near Mumbai in 2010.

There are five different bacterial strains that are immobilized and mixed with a carrier material such as powdered corncob. This mixture of five bacteria is called Oil Zapper. Oilzapper feeds on hydrocarbon compounds present in crude oil and the hazardous hydrocarbon waste generated by oil refiners, known as Oil Sludge and converts them into harmless CO₂ and water. The Oilzapper is neatly packed into sterile polythene bags and sealed aseptically for safe transport

87. A

Minamata disease :

A crippling deformity caused by methyl mercury poisoning that was first described in the inhabitants of Minamata Bay, Japan and resulted from their eating fish contaminated with mercury industrial waste.

Itai Itai :

Water contaminated with cadmium can cause itai itai disease, Lung & Liver cancer Itai Itai also known as Ouch Ouch disease (a painful disease of bones & joints) caused by water contamination by cadmium

Lead Anaemia :

Water contaminated with lead can cause anaemia, loss of muscle power & bluish lines around the gums

Blue Baby Syndrome :

Excess nitrates in drinking water reacts with hemoglobin to form non functional methaemoglobin which impairs oxygen transport

Skeletal Fluorosis :

Excess of fluorides in drinking water can cause neuromuscular disorders, teeth deformity, hardening of bones, painful joints & outward bending of legs from knees (Knock knee syndrome)

Black foot disease :

Caused by leaching of arsenic from soil & rocks to ground water used for drinking purposes.

Iodine 131 :

Iodine 131 produced by nuclear tests is passed to vegetations & then appears in milk of the cattle that consume the contaminated vegetation & is passed to humans. Iodine 131 causes serious damage to thyroid glands especially among children

Yokkaichi asthma (SO₂) :

The burning of petroleum and crude oil released large quantities of sulfur oxide that caused severe smog, resulting in severe cases of chronic obstructive pulmonary disease, chronic bronchitis, pulmonary emphysema, and bronchial asthma among the local inhabitants

Pneumoconiosis :

KSCSAPT 514 ans Explanation

Pneumoconiosis is an occupational lung disease caused by the inhalation of coal dust, often in mines, also known as Black Lung Disease

Asbestosis :

Asbestosis is a chronic lung disease, which leads to long-term breathing complications, caused exclusively by exposure to asbestos (No cure)

Silicosis :

Silicosis is a lung disease that is caused by inhaling tiny bits of silica mainly by the workers working in silica industries or sand blasting sites.

88. C

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89. B

Ministry : Ministry of Textiles

Aims to boost common infrastructure and modernisation of the powerloom sector in the country.

Scheme:

KSCSAPT 514 ans Explanation

PowerTex India scheme comprises new research and development in power loom textiles, new markets, branding, subsidies and welfare schemes for the workers.

It has two schemes:

Pradhan Mantri Credit Scheme (PMCS) for powerloom weavers and

Solar energy scheme (SEC) for powerlooms.

PMCS for power looms: Under it, financial assistance, including margin money subsidy and interest reimbursement, will be given as against the credit facility under Pradhan Mantri Mudra Yojana to the decentralised power loom units.

SEC for power looms: Under it, financial subsidy for the installation of the Solar Photo Voltaic Plants will be provided to alleviate the problems of power cuts.

Government will provide subsidy of 50% to power loom units having maximum eight looms for adopting solar energy for captive use either in grid or off grid system

PowerTex India is a comprehensive and integrated scheme for power loom sector development. The components of the scheme are:

In-situ Upgradation of Plain Power looms.

Group Workshed Scheme.

Yarn Bank Scheme.

Common Facility Centre.

Pradhan Mantri Credit Scheme for Power loom Weavers.

Solar Energy Scheme for Power looms.

Facilitation, IT, Awareness, Market Development and Publicity for Power loom Schemes.

Tex Venture Capital Fund.

Grant- in-Aid and Modernisation & Upgradation of Power loom Service Centres (PSCs). Scheme for Development of Knitwear Sector

90. C

Udaan, the Special Industry Initiative (SII) for J&K is funded by Ministry of Home Affairs and implemented by National Skill Development Corporation (NSDC). The programme is a part of the overall initiative for addressing economic issues in J&K. While steps are being taken by the State and Central Government to revive economic activity in J&K, Udaan programme is a special initiative to address the needs of the educated unemployed in J&K. Udaan program is focused on youth of Jammu & Kashmir (J&K) who are graduate, post graduate and three year diploma engineers.

The aim is to provide skills and job opportunities to the youth. Simultaneously, the aim is also to provide exposure to corporate India towards the rich talent pool available in J&K.

The target was to reach out to 40,000 youth in J&K over a period of 5 years. It was observed that youth from J&K were unable to find employment in many companies as either they were unaware of the opportunity in the companies or the companies were unaware of the talent pool that existed in J&K.

The principal focus of the Udaan programme is to create an ecosystem that would bridge this gap.

The Udaan programme is designed to encourage corporates to travel to J&K meet with the youth and hire aspiring youth in J&K who wish to explore the opportunity to work with corporates. Udaan provides a framework of support to the youth to travel, undergo training in firms and transit to work. Udaan has two objectives :

To provide exposure to the graduates and post graduates of Jammu and Kashmir to the best of corporate India and

To provide corporate India with exposure to the rich talent pool available in the state

91. C

92. C

The Mangroves and Coral Reef areas are ecologically sensitive and they require protection of the highest order. The India reef area is estimated at 2375 sq. km. which is cater in four states namely, Gujarat and Tamil Nadu and Union Territories of Andaman and Nicobar Islands and Lakhshadweep. As the restoration work is very expensive and time consuming the emphasis is given on preventive aspects through monitoring and surveillance.

Number of National Mangroves sites in the country are 38 which are situated in ten States of the country namely, West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Andaman & Nicobar, Kerala, Goa, Karnataka, Maharashtra and Gujarat. The State-wise list is given in the Annexure. Mangroves vegetation are spread over an area of about 4500 sq. km. Sunderbans in West Bengal account for a little than half of the total areas under Mangroves in India. West Bengal

KSCSAPT 514 ans Explanation

has maximum of Mangroves cover in the country followed by Gujarat. India is home to some of the best Mangroves in the world. The Ministry of Environment and Forests has also established a National Mangroves genetic sources centers in Orissa.

Mangroves require an appropriate mixture of saline and freshwater and soft substrate like mudflats to be able to grow and perpetuate. Under the scheme, 100% of Central assistance is given to coastal states and Union Territories for implementing the approved Management Action Plans in the identified sites for components like Survey and Demarcation, Mangroves Planting, Restoration and Regeneration, Livelihood Support, Protection and Surveillance measures and education and Awareness.

In view of the multiple benefits offered by mangroves forests to the coastal ecology and the local population, the Coastal states and Union Territories have been requested to identify additional areas suitable for mangroves plantation with people's participation and augment the existing efforts related to education, awareness and alternative/supplementary livelihoods.

Four Coral Reef sites have been identified for intensive conservation and management since 1987:

- a. Andaman and Nicobar Islands
- b. Lakshadweep Islands
- c. Gulf of Kutchch (Gujarat)
- d. Gulf of Mannar (Tamil Nadu)

93. D

94. C

95. D

Thus in biomagnification there is an increase in concentration of a pollutant from one link in a food chain to another. In order for biomagnification to occur, the pollutant must be: long-lived, mobile, soluble in fats, biologically active. E.g. DDT.

If a pollutant is short-lived, it will be broken down before it can become dangerous.

If it is not mobile, it will stay in one place and is unlikely to be taken up by organisms.

If the pollutant is soluble in water, it will be excreted by the organism. Pollutants that dissolve in fats, however, may be retained for a long time.

It is traditional to measure the amount of pollutants in fatty tissues of organisms such as fish.

In mammals, we often test the milk produced by females, since the milk has a lot of fat in it and is often more susceptible to damage from toxins (poisons)

96. B

97. C

98. D

99. D

The International Date Line

A traveler going eastwards gains time from Green-wich until he reaches the meridian 180°E , when he will be 12 hours ahead of G.M.T.

Similarly in going westwards, he loses 12 hours when he reaches 180°W . There is thus a total difference of 24 hours or a whole day between the two sides of the 180° meridian.

This is the International Date Line where the date changes by exactly one day when it is crossed. A traveler crossing the date line from east to west loses a day (because of the loss in time he has made); and while crossing the dateline from west to east he gains a day (because of the gain in time he encountered).

The International Date Line in the mid-Pacific curves from the normal 180° meridian at the Bering Strait, Fiji, Tonga and other islands to prevent confusion of day and date in some of the island groups that are cut through by the meridian.

Some of them keep Asiatic or New Zealand standard time, others follow the American date and time

Standard Meridian of India which is $82^{\circ}30'$ East longitude passes through Uttar Pradesh, Madhya Pradesh, Chattisgarh, Odisha and Andhra Pradesh.

100. D

In mountainous regions, during the day the slopes get heated up and air moves upslope and to fill the resulting gap the air from the valley blows up the valley. This wind is known as the valley breeze. During the night the slopes get

KSCSAPT 514 ans Explanation

cooled and the dense air descends into the valley as the mountain wind. The cool air, of the high plateaus and ice fields draining into the valley is called katabatic wind.

Another type of warm wind (katabatic wind) occurs on the leeward side of the mountain ranges. The moisture in these winds, while crossing the mountain ranges condense and precipitate. When it descends down the leeward side of the slope the dry air gets warmed up by adiabatic process. This dry air may melt the snow in a short time.