

1. b

The Bill introduces a definition for 'public works', which includes the construction of any infrastructure that is financed and carried out by the central government for public purposes. This infrastructure must be necessary for public safety and security and must be based on a specific instance of danger to public safety. Also, there should be no reasonable alternative to carrying out construction in the prohibited area.

The Archaeological Survey of India (ASI) recently declared that it has added six structures to the list of monuments of national importance, taking the total number to 3,693.

With 506 monuments under its belt, Karnataka continues to top the list in South India, followed by Tamil Nadu (413). Nationally too, Karnataka is in the second place after Uttar Pradesh, which has 745 such monuments.

According to the Ancient Monuments and Archaeological Sites and Remains Act, 1958, any structure, sculpture, inscription, etc., which is in existence for not less than 100 years is termed ancient.

2. a

The 'Global Commons' refers to resource domains or areas that lie outside of the political reach of any one nation State. Thus international law identifies four global commons namely: the High Seas; the Atmosphere; Antarctica; and, Outer Space.

These areas have historically been guided by the principle of the common heritage of humankind - the open access doctrine or the mare liberum (free sea for everyone) in the case of the High Seas.

Despite efforts by governments or individuals to establish property rights or other forms of

control over most natural resources, the Global Commons have remained an exception.

3. d

In February 2016, the Ministry of Environment, Forest and Climate Change (MoEFCC) unveiled a new categorization of industries based on their pollution.

Re-categorization and its purpose:

Re-categorization of industries based on their pollution load is a scientific exercise. The old system of categorization was creating problems for many industries and was not reflecting the pollution of the industries. The new categories will remove this lacuna and will give clear picture to everyone.

The purpose of the categorization is to ensure that the industry is established in a manner which is consistent with the environmental objectives.

The new criteria will prompt industrial sectors willing to adopt cleaner technologies, ultimately resulting in generation of fewer pollutants.

Another feature of the new categorization system lies in facilitating self-assessment by industries as the subjectivity of earlier assessment has been eliminated.

This 'Re-categorization' is a part of the efforts, policies and objective of present government to create a clean & transparent working environment in the country and promote the Ease of Doing Business.

What's new?

A new category, white, has been added to include the industries that are "practically non-polluting". These industries, like air cooler or air conditioning units, chalk factories, biscuit tray units, won't need a green clearance enabling easier financing.

Other categories:

Red category: Includes Cement industry, Petrochemicals, pharmaceuticals, sugar, paper and pulp, nuclear power plants, organic chemicals, fertilizers, fire crackers.

Orange category: Includes coal washeries, glass manufacturing, paints, stone crushers, and aluminium and copper extraction from scrap.

Green category: Includes aluminium utensils, steel furniture, soap manufacturing and tea processing.

The categorisation is based on a pollution index developed by the environment ministry taking into account the emissions, effluents, and hazardous waste generated, and the resources it consumes. Industries scoring 60 and above on a scale of 1 to 100 have been rated red. An index between 41 and 59 earns an orange category, while a score between 21 and 39 gets a green. Pollution index lower than 20 have been rated white.

4. c

UNESCO established its lists of Intangible Cultural Heritage with the aim of ensuring the better protection of important intangible cultural heritages worldwide and the awareness of their significance. This list is published by Intergovernmental Committee for the safeguarding of Intangible Cultural Heritage and the members to this are elected by States parties meeting in UN general assembly. The list was established in 2008 when the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage took effect. Representative List of the Intangible Cultural Heritage of Humanity comprises cultural "practices and expressions that help demonstrate the diversity of this heritage and raise awareness about its importance."

5. d

Article 23 prohibits traffic in human beings, begar (forced labour) and other similar forms of forced labour. Any contravention of this provision shall be an offence punishable in accordance with law. This right is available to both citizens and non-citizens. It protects the individual not only against the State but also against private persons.

6. a

7. c

What is Devadasi system?

Devadasi system is a religious practice whereby parents marry a daughter to a deity or a temple. The marriage usually occurs before the girl reaches puberty. In recent decades, the practice has been used to push young girls into prostitution. While various state governments have enacted laws to stop such practices, the tradition remains entrenched in some parts of the country, especially some southern states.

Originally, the girls learned and practiced the arts like Bharathanatyam, Odissi or other classical dance forms, apart from taking care of the temple and engaging in rituals. They traditionally enjoyed a high status in society as music and dance were integral parts of worship in temples. They generally married wealthy patrons and engaged their time pursuing and bettering their artistic skills, instead of becoming a housewife. The job of the housewife belonged to the other wife of the patrons. The Devadasis' children were also taught music and dance.

Laws prohibiting its practice:

The practice of Devadasi system in any form is in total contravention of the provisions of Section 370 and 370A as amended through Criminal Law (Amendment) Act, 2013 as well as Section 372 of Indian Penal Code. It is also against Immoral Traffic (Prevention) Act.

8. a

9. b

An imaginary line joining the magnetic poles would be inclined by approximately 11.3 degrees from the planet's axis of rotation. The axis of earth is inclined to the plane of the ecliptic at an angle of $66\frac{1}{2}$ degree, giving rise to different seasons and varying lengths of day and night. Earth rotates on its own axis, tilted at an angle of 23.4 degrees every 23 hour 56 minutes giving rise to Day and Night.

10. c

India has hosted three IBSA (founded in 2003) summits, all in New

Delhin in 2008, 2013 and 2015 . So, 2 is wrong. The main objective of the IBSA Fund (established in 2004) is to benefit other developing countries, particularly Least Developed Countries (LDCs) and Post Conflict Reconstruction and Development (PCRD) countries around the world in partnership with the UN. So, 4 is correct

11. c

works in partnership with Commonwealth War Graves Commission and the United Service Institution of India to develop and deliver the India Remembers project. India Remembers is an India-wide initiative designed to raise awareness of the contribution and sacrifices made by India's servicemen and women since 1914. The project encourages diverse groups across India to discover, explore and remember the stories of India's war dead. As a result of India Remembers, the saffron marigold has been adopted as India's new symbol of remembrance. It is hoped it will become as recognisable within India as the red poppy is in the United Kingdom.

12. d

Recent action of the Lok Sabha Speaker with regard to Suspension of 25 members + Previous UPSC questions on the Office of the Speaker

Statement 1: The Speaker may invoke Rule 374A in case of "grave disorder occasioned by a member coming into the well of the House or abusing the Rules of the House, persistently and wilfully obstructing its business by shouting slogans or otherwise...". The member concerned, "on being named by the Speaker, stands automatically suspended from the service of the House for five consecutive sittings or the remainder of the session, whichever is less". This clause was incorporated in the Rule Book on December 5, 2001. Obviously, the intention was to skirt around the necessity of moving and adopting a motion for suspension.

Hence Statement 1 is INCORRECT.

While the Speaker is empowered to place a member under suspension, the authority for revocation of this order is not vested in her. It is for the House, if it so desires, to resolve on a motion to revoke the suspension.

Statement 2: The Chairman may "name a member who disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing" business. **In such a situation, the House may adopt a motion suspending the member from the service of the House for a period not exceeding the remainder of the session. The House may, however, by another motion, terminate the suspension. Unlike the Speaker, the Rajya Sabha Chairman does not have the power to suspend a member.**

Hence Statement 2 is INCORRECT.

13. b

14. c

Sunspots are temporary phenomena on the photosphere of the Sun that appear visibly as dark spots compared to surrounding regions.

They reduce solar output if increase in number. So, 1 is correct.

They reflect intense magnetic activity on the Sun at those spots, and not earth. So, 2 is incorrect.

Change in earth's axial tilt is a long-term phenomenon. So, 3 is incorrect.

15. b

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal.

The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C.

Mitigation: reducing emissions

Governments agreed

A long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels;

To aim to limit the increase to 1.5°C, since this would significantly reduce risks and the impacts of climate change;

On the need for global emissions to peak as soon as possible, recognizing that this will take longer for developing countries;

To undertake rapid reductions thereafter in accordance with the best available science.

Before and during the Paris conference, countries submitted comprehensive national climate action plans (INDCs). These are not yet enough to keep global warming below 2°C, but the agreement traces the way to achieving this target.

Transparency and global stocktake

Governments agreed to

Come together every 5 years to set more ambitious targets as required by science;

Report to each other and the public on how well they are doing to implement their targets;

Track progress towards the long-term goal through a robust transparency and accountability system.

Adaptation

Governments agreed to

Strengthen societies' ability to deal with the impacts of climate change;

Provide continued and enhanced international support for adaptation to developing countries.

Loss and damage

The agreement also

Recognizes the importance of averting, minimising and addressing loss and damage associated with the adverse effects of climate change;

Acknowledges the need to cooperate and enhance the understanding, action and support in different areas such as early warning systems, emergency preparedness and risk insurance.

16. d

Cooperation between member-countries of the South Asia Sub-regional Economic Cooperation (SASEC) could generate \$70 billion in GDP and more employment.

The joint statement, made in Delhi following a meeting of the Finance Ministers from Bangladesh, Bhutan, India, Nepal, Maldives,

and Sri Lanka, also welcomed Myanmar into the coalition.

The South Asia Subregional Economic Cooperation (SASEC) Program, set up in 2001, brings together Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal and Sri Lanka in a project-based partnership.

To promote regional prosperity by improving cross-border connectivity, boosting trade among member countries, and strengthening regional economic cooperation.

Since 2001, SASEC countries have implemented 46 regional projects worth over \$9 billion in the energy, transport, trade facilitation, economic corridor development, and information and communications technology (ICT) sectors.

The Manila, Philippines-based Asian Development Bank (ADB) serves as the Secretariat for the SASEC member countries.

SASEC seeks to strengthen multimodal cross-border transport networks that boosts intraregional trade and open up trade opportunities with East and Southeast Asia.

Area of Cooperation under SASEC

In 2005, the SASEC countries agreed on priority sectors for investment and coordinated action: transport, trade facilitation, and energy.

In 2016, the SASEC countries approved the SASEC Operational Plan 2016-2025, a 10-year strategic roadmap, which introduced Economic Corridor Development (ECD) as a fourth sectoral area of focus. SASEC also supports regional initiatives in ICT.

Transport — SASEC aims to put in place the critical multi-modal transport networks that will enhance intraregional trade and investment in the subregion and, in turn, boost economic growth.

SASEC works to strengthen road, rail, and air links, as well as developing port infrastructure to match the needs of the region's growing economies, and to support the SAARC transport corridor network.

Trade Facilitation — SASEC is helping speed up the time and reduce the costs of trading across borders throughout the subregion.

Regional SASEC trade facilitation initiatives are creating modern customs administrations that are compliant with the terms and provisions of the Revised Kyoto Convention.

They are streamlined and transparent cross-border trade regulations and procedures, and improved information and services for the private sector.

Energy — SASEC is working to improve energy access and security in the region by developing essential infrastructure, and promoting intraregional power trade to reduce costs and import dependence.

SASEC energy initiatives focus on renewable energy.

Economic Corridor Development — SASEC is promoting synergies and linkages between economic corridors across SASEC countries to

Optimize development gains,

Including industrial growth and competitiveness,

The creation of high-quality jobs,

Increased productivity, and the strengthening existing value chains.

17. c

18. d

The Constitution has not fixed the tenure of Judge of a Supreme Court. However, Constitution stipulated that he holds office until he attains the age of 65 years and

any question regarding his age is to be determined by such authority and in such manner as provided by Parliament.

Statement 1 is INCORRECT

Statement 2: Constitution stipulated that “He can resign his office by writing to the president.”[Not to the Chief Justice]

Statement 2 is INCORRECT

19. c

The Election Commission of India draws the attention of all Print Media to guidelines issued by the Press Council of India (in 2010) to be followed for observance during elections. **Print Media is currently not included in Section 126 of the RPA, 1951.**

“The ECI... requested that print media should also be included in Section 126 of the RP Act. The provision currently prohibits publication of ads by political parties in electronic media — TV, radio and, more recently, social media — 48 hours before voting ends. This proposal was first mooted by the EC on April 13, 2012, and it has been endorsed by the Law Commission, but the government hasn’t acted on it..”

20. b

Article 324 of the Constitution has made the provisions with regard to the composition of election commission.

The Election Commission shall consist of the chief election commissioner and such number of other election commissioners, if any, as the president may from time to time fix.

The conditions of service and tenure of office of the election commissioners and the regional commissioners shall be determined by the president.

In case of difference of opinion amongst the Chief election commissioner and/or two other election commissioners, the matter is decided by the Commission by majority.

21. a

22. d

23. d

As a Court of Record, the Supreme Court has two powers:

(a) The judgements, proceedings and acts of the Supreme Court are recorded for perpetual memory and testimony. These records are admitted to be of evidentiary value and cannot be questioned when produced before any court. They are recognized as legal precedents and legal references.

(b) It has power to punish for contempt of court, either with simple imprisonment for a term up to six months or with fine up to ₹2,000 or with both. In 1991, the Supreme Court has ruled that it has power to punish for contempt not only of itself but also of high courts, subordinate courts and tribunals functioning in the entire country.

24. a

The tribal areas in the four states of Assam, Meghalaya, Tripura and Mizoram have been constituted as autonomous districts. If there are different tribes in an autonomous district, the governor can divide the district into several autonomous regions. Each autonomous district has a district council. Each autonomous region also has a separate regional council.

The district and regional councils administer the areas under their jurisdiction. They can make laws on certain specified matters like land, forests, canal water, shifting cultivation, village administration, inheritance of property, marriage and

divorce, social customs and so on. But all such laws require the assent of the governor.

The acts of Parliament or the state legislature do not apply to autonomous districts and

autonomous regions or apply with specified modifications and exceptions. The power of direction, in this regard, lies either with the president or governor. Thus, in the case of Assam, it lies with the Governor, both in respect of acts of Parliament or state legislature. In the case of Meghalaya, Tripura and Mizoram, it lies with the president in respect of acts of Parliament and governor in respect of acts of state legislature.

25. b

District Mineral Foundation (DMF) is a trust set up as a non-profit body, in those districts affected by the mining works, to work for the interest and benefit of persons and areas affected by mining related operations. It is funded through the contributions from miners.

Its manner of operation comes under the jurisdiction of the relevant State Government.

Setting up of District Mineral Foundations (DMFs) in all districts in the country affected by mining related operations was mandated through the Mines and Minerals (Development & Regulation) Amendment Act, (MMDRA) 2015. On 16 September 2015, Central Government issued a notification directing states to set up DMF.

In addition, the Central Government notified on 17 September 2015, the rates of contribution payable by miners to the DMFs. In case of all mining leases executed before 12th January, 2015 (the date on which MMDR Amendment Act came into force) miners will have to contribute an amount equal to 30% of the royalty payable by them to the DMFs. Where mining leases are granted after

12.01.2015, the rate of contribution would be 10% of the royalty payable (Subsequent to the enactment of MMDR Amendment Act, mining leases are given out after auctions; hence, a lower levy).

Thus, every holder of a mining lease or a prospecting licence-cum-mining lease shall, in addition to the royalty, pay to the District Mineral Foundation of the district in which their mining operations are carried on. If the mining area is spread across several districts, the fund is shared on a pro-rata basis by these districts. DMF contribution would not be exceeding one-third of royalty and the Central Government retains the power to prescribe the rates of contribution, though DMF's operation is under state governments. The contributions made to DMFs are collected by the State Governments and the details in this regard are not maintained centrally at the moment.

Under the above mentioned MMRD Amendment Act of 2015, a provision was made also to create a National Mineral Exploration Trust under the jurisdiction of central government, with 2% of royalty as levy, for boosting detailed exploration of minerals.

The contribution to DMFs has been made effective from 12 January, 2015 though DMF was notified only on 16 September 2015. At the above mentioned prescribed rates of contribution, it's expected that, nearly Rs.6000 crore could be utilized for the development of mining areas of different States, at the current level of royalty collection.

DMF funds are treated as extra-budgetary resources for the State Plan. Efforts are made to achieve convergence with the State and the District Plans so that the activities taken up by the DMF can supplement the development and welfare activities already being carried out.

Further, using the funds generated by this contribution, the DMFs are expected to implement the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY), launched on 17 September 2015 for the welfare of mining areas and affected population. The Central Government has issued a directive to the State Governments, under Section 20A of the MMDR Act, 1957, laying down the guidelines for implementation of PMKKKY and directing the States to incorporate the same in the Rules framed by them for the DMFs.

26. a

27. c

Water vapour and steam constitute 60 to 90 per cent of the total gases discharged during a volcanic eruption.

28. b

Prime Minister's Employment Generation Programme (PMEGP) is implemented by Ministry of Micro, Small and Medium Enterprises (MSME).

PMEGP is a major credit-linked subsidy programme, aimed at generating self-employment opportunities through establishment of micro-enterprises in the non-farm sector by helping traditional artisans and unemployed youth.

Subsidy under PMEGP Scheme is provided by the Union Government. The PMEGP Scheme was launched during 2008-09. Khadi and Village Industries Commission (KVIC) is the nodal agency at the national level.

29. c

He had helped establish the nationalistic Dayanand Anglo- Vedic School and became a follower of Dayanand Saraswati (founder of the Arya Samaj). He was not its co-founder.

Statement 2: In 1921, he had founded Servants of the People Society, a non-profit

welfare organisation, in Lahore, which shifted based to Delhi after partition, and has branches in many parts of India.

Statement 3: In 1888 and 1889 he was a delegate to the annual sessions of Indian National Congress (INC) and was elected as its President in the Calcutta Special Session of 1920.

30. c

The cities that have been covered by the 'safe city project' under the Nirbhaya Fund are:

Bengaluru, Delhi, Chennai, Hyderabad, Mumbai, Ahmedabad, Kolkata and Lucknow.

31. c

The most corroborative theory that gives a good explanation for the formation of the Moon is the Giant Impact Theory, which was given in the 1970s and has stood for the past four decades. This theory suggested that a huge impactor - of the size of the planet Mars - during its space journey had collided with the Earth.

This theory is by far the most widely accepted theory as it explains many concepts which were understood clearly earlier. The low iron content of Moon's core is explained as the Moon is said to be formed from surface mining. Since the major concentration of iron is in the Earth's core, it can be understood why it is absent from the Moon's core.

The geo-chemical similarity - the elemental and surface similarities of Moon and Earth - stand explained as Moon was formed from a part of the Earth. The presence of oxygen isotopes similar to Earth's is also assessed to coincide. The angular momentum of the pair is well understood.

When Apollo missions brought back samples of Moon rocks, it was studied much more deeply and the theory was validated further.

32. d

33. c

The sun's closest stellar neighbours are three stars in the Alpha Centauri system. The two main stars are Alpha Centauri A and Alpha Centauri B, which form a binary pair. They are an average of 4.3 light-years from Earth. The third star is **Proxima Centauri**. It is about 4.22 lightyears from Earth and is the closest star other than the sun.

The **asteroid belt** is the circumstellar disc in the Solar System located roughly between the orbits of the planets Mars and Jupiter. It is occupied by numerous irregularly shaped bodies called asteroids or minor planets.

34. b

Gravitational waves are 'ripples' in the fabric of space-time caused by some of the most violent and energetic processes in the Universe.

- Albert Einstein predicted the existence of gravitational waves in 1916 in his general theory of relativity.

Einstein's mathematics showed that massive accelerating objects (such as neutron stars or black holes orbiting each other) would disrupt space-time in such a way that 'waves' of distorted space would radiate from the source.

35. a

Distressed Asset Recovery Program (DARP) is an initiative of International Finance Corporation, the World Bank Group's private sector financing arm.

International Finance Corporation (IFC) is looking to commit around \$250 million in distressed assets and rope in partners to help clean up nonperforming assets in the Indian banking sector.

36. a

Scheme for Human Resources and Institution – Skill Development (**SHRISD**) is a new subscheme under the **Pradhan Mantri Kisan Sampada Yojana (PMKSY)**.

SHRISD was launched for assisting skilling infrastructure and Development of Course Curriculum related to food processing industries, with a budget outlay of Rs.27.50 Crore from 2017-18 to 2019-20. The scheme was launched by **Ministry of Food Processing Industries**

37. b

38. b

Releasing its first official Arctic policy white paper, China said it would encourage enterprises to build infrastructure and conduct commercial trial voyages, paving the way for Arctic shipping routes that would form a "Polar Silk Road". China hopes to work with all parties to build a 'Polar Silk Road' through developing the Arctic shipping routes.

39. a

Super moon occurs when a full moon coincides with the closest the moon gets to the earth during its orbit around our planet. During the super moon, the moon appears about 14 per cent larger than a normal full moon and around 30 per cent brighter.

Blue moon occurs when there are two full moons in a single calendar month. The phenomenon occurs due to slight differences in the calendar month and lunar phases. Each full moon happens every 29.5 days, but because months can last up to 31 days, there remains a possibility of a full moon to occur at the very beginning as well as the end of a single month.

The "**blood moon**" refers to a total lunar eclipse when a full moon lines up with the earth and the sun. In this configuration, the

earth blocks out the sun's light, turning the moon from white to a deep red.

40. a

Statement 1: The Labour Party from Britain and the Indian National Congress refused to attend. So, 1 is correct.

Statement 2: The recommendations of conference were published in a White Paper in March 1933 and debated in Parliament afterwards. A Joint Select Committee was formed to analyse the recommendations and formulate a new GoI Act 1935 for India. So, 2 is correct.

Statement 3: The Commonwealth dates back to the mid-20th century with the decolonisation of the British Empire through increased self-governance of its territories. It was formally constituted by the London Declaration in 1949. So, 3 is wrong.

41. d

Both parks are encompassed in the Nanda Devi Biosphere Reserve which is further surrounded by a buffer zone, this Reserve is in the UNESCO World Network of Biosphere Reserves since 2004.

The Valley of Flowers has gained importance as a region containing a diversity of alpine flora, representative of the Western Himalayan alpine shrub and meadows ecoregion. The rich diversity of species reflects the valley's location within a transition zone between the Zaskar and Great Himalayas ranges to the north and south, respectively, and between the Eastern Himalaya and Western Himalaya flora.

42. a

43. b

Kala-azar is endemic to the Indian subcontinent in 119 districts in four countries (**Bangladesh, Bhutan, India and Nepal**). India

itself accounts for half the global burden of the disease.

Historically, the parasite *Leishmania donovani* is believed to be responsible for the dreaded infection. People get infected when bitten by an insect called the **sandfly**, which harbours the disease-causing parasite.

44. b

Statement 1 is correct: The Ease of Doing Business Grand Challenge was launched by the government with the objective **to resolve seven identified Ease of Doing Business problems with use of cutting edge technologies like** Artificial Intelligence, Internet of Things, Big Data Analytics, and Block chain to reform Government processes.

The objective of this challenge is to tap potential of young Indians, startups and other private enterprises to provide solutions to complex problems using current technology. It is **in pursuance of Government's resolve to make India one of the easiest places to conduct business in the world.**

Statement 2 is correct: The **platform for the Grand Challenge is the Startup India Portal.**

The date for closing of applications is January 1, 2019 and the final results will be declared on February 1, 2019.

The **top 3 teams for each problem statement would be awarded cash prizes worth Rs 1 lakh, Rs 2 lakh and Rs 3 lakh respectively.**

45. a

Option (a) is correct: The Republic of Seychelles launched the world's first Sovereign Blue Bond, a financial instrument designed to support sustainable marine and fisheries projects.

The bond raised USD 15 million from international investors. The bond demonstrates the potential for countries to harness capital markets for financing the sustainable use of marine resources.

The Blue Bond is a part of an initiative that **combines public and private investment** to mobilise resources for empowering local communities and businesses.

Proceeds from the bond will be utilised for the expansion of marine protected areas, improved governance of priority fisheries and the development of the Seychelles' blue economy.

Proceeds from the bond will also contribute to the **World Bank's South West Indian Ocean Fisheries Governance and Shared Growth Program**, which supports countries in the region to sustainably manage their fisheries and increase economic benefits from their fisheries sectors.

The World Bank assisted in developing the Blue Bond.

46. a

Statement 1 is correct: The government has launched "Operation Green" for tomato, onion and potato (TOP) crops on the line of "Operation Flood". It will promote FPOs, agro logistics, processing facilities and professional management with a budgetary allocation of Rs 500 crores. These three vegetables are consumed throughout the year, however, the seasonal and regional production of these perishable commodities pose a challenge in connecting farmers and consumers.

Statement 2 is incorrect:

Major objectives of "Operation Greens" are as under:

Enhancing value realisation of TOP farmers by targeted interventions to strengthen TOP

production clusters and their FPOs, and linking/connecting them with the market.

Price stabilisation for producers and consumers by proper production planning in the TOP clusters and introduction of dual use varieties.

Reduction in post-harvest losses by creation of farm gate infrastructure, development of suitable agro-logistics, and creation of appropriate storage capacity linking consumption centres.

Increase in food processing capacities and value addition in TOP value chain with firm linkages with production clusters.

Setting up of a market intelligence network to collect and collate real time data on demand.

47. a

Option b is correct: Dissolved oxygen, often referred to as DO, is simply the amount of oxygen that is dissolved in the water.

When DO levels fall below 8 or 9, most trout and oxygen-sensitive aquatic insect populations like stoneflies become highly stressed. Dissolved oxygen levels less than 6 mg/L will not support trout or many other species of good aquatic life.

Biochemical Oxygen Demand (BOD, also called Biological Oxygen Demand) is the amount of dissolved oxygen needed (i.e. demanded) by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period.

BOD can be used as a gauge of the effectiveness of wastewater treatment plants. BOD is similar in function to chemical oxygen demand (COD), in that both measure the amount of organic components in water. However, COD is less specific, since it measures everything that can be chemically

oxidized, rather than just levels of biodegradable organic matter.

The presence of faecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the faecal material of man or other animals.

At the time this occurred, the source water may have been contaminated by pathogens or disease producing bacteria or viruses which can also exist in faecal material. Some waterborne pathogenic diseases include typhoid fever, viral and bacterial gastroenteritis and hepatitis A.

The presence of faecal contamination is an indicator that a potential health risk exists for individuals exposed to this water. Faecal coliform bacteria may occur in ambient water as a result of the overflow of domestic sewage or nonpoint sources of human and animal waste.

A wetland is a place where the land is covered by water, either salt, fresh or somewhere in between. Marshes and ponds, the edge of a lake or ocean, the delta at the mouth of a river, low-lying areas that frequently flood—all of these are wetlands

48. c

“We are Survival, the global movement for tribal peoples’ rights. We’re the only organization that champions tribal peoples around the world. We help them defend their lives, protect their lands and determine their own futures.”

49. c

50. c

In the dayside ionosphere, the neutral winds set up a polarization electric field which usually points into the eastward direction. At the magnetic dip equator, where the magnetic field is exactly horizontal, this electric field

has an interesting effect: The resulting upward $E \times B$ drift of the electrons generates a negative charge at the top and a positive charge at the bottom of the ionospheric E-region (about 90 to 130 km altitude). The resulting electric field prevents the further upward drift of electrons. Instead, they are now propelled westward by the eastward electric field. This westward movement of the electrons constitutes an eastward electric current which is called the Equatorial Electrojet. The motion of the ions is largely inhibited at this altitude, due to their collisions with the neutral gas. A new study shows it amplifies the effects of space weather near the equator, putting power grids at risk in regions previously thought to be less prone to space weather than high-latitude regions. It runs directly above the magnetic equator, affecting worldwide radio communication

51. d

The themes of the paintings are the events from the life of the Buddha, the Jatakas and the Avadanas. Some paintings such as Simhala Avadana, Mahajanaka Jataka and Vidharpundita Jataka cover the entire wall of the cave.

The other important paintings are the famous Padmapani and Vajrapan.

Figures in these caves are painted with considerable naturalism and there is no overstylisation.

52. c

The Rashtriya Yuva Sashaktikaran Karyakram Scheme is an ongoing Central Sector Scheme of the Ministry of Youth Affairs & Sports and has been continuing since 12th Five Year Plan. The Scheme aims to develop the personality and leadership qualities of the youth and to engage them in nation building activities. During 12th FYP period, in rationalization exercise undertaken in

consultation with Ministry of Finance and NITI Aayog, the eight schemes were brought under the umbrella scheme of Rashtriya Yuva Sashaktikaran Karyakram as sub-schemes. This has helped in achieving better synergies between the Schemes and thereby, improves their effectiveness and help in achieving better outcomes with the available resources. The Scheme beneficiaries are the youth in the age-group of 15-29 years, in line with the definition of 'youth' in the National Youth Policy, 2014. In case of programme components specifically meant for the adolescents, the age-group is 10-19 years.

Following are eight sub-schemes under Rashtriya Yuva Sashaktikaran Karyakram: Nehru Yuva Kendra Sangathan(NYKS);• National Youth Corps (NYC);• National Programme for Youth• & Adolescent Development (NPYAD); International Cooperation;• Youth Hostels (YH);• Assistance to Scouting• & Guiding Organizations; National Discipline Scheme (NDS); and• National Young Leaders Programme (NYLP).•

53. c

54. a

The Chemical Weapons Convention (CWC) is a multilateral treaty that bans chemical weapons and requires their destruction within a specified period of time. CWC negotiations started in 1980 in the UN Conference on Disarmament. The convention opened for signature on January 13, 1993, and entered into force on April 29, 1997. The CWC is implemented by the Organization for the Prohibition of Chemical Weapons (OPCW), which is headquartered in The Hague with about 500 employees. The OPCW receives states-parties' declarations detailing chemical weapons-related activities or materials and relevant industrial activities. After receiving declarations, the OPCW inspects and monitors

states-parties' facilities and activities that are relevant to the convention, to ensure compliance. The CWC is open to all nations and currently has 192 states-parties. Israel has signed but has yet to ratify the convention. A key non-signatory includes North Korea, which is believed to possess chemical weapons. Egypt, North Korea, and South Sudan have neither signed nor acceded to the Convention.

55. c

56. c

57. d

The Climate Change Performance Index (CCPI) is an annual publication by Germanwatch, NewClimate Institute and Climate Action Network Europe. It evaluates the climate protection performance of 60 countries, responsible for over 90% of global energy-related CO2 emissions.

58. d

59. d

60. a

Statement 1: She co-founded the Paris Indian Society together with Singh Rewabhai Rana and Munchers Shah Burjorji Godre.

Statement 2 and 4: She served as the private secretary of Dadabhai Naoroji, the president of the British Committee of the Indian National Congress. Together with Naoroji and Singh Rewabhai Rana, Cama supported the founding of Varma's Indian Home Rule Society in 1905.

Statement 3: In her appeal for human rights, equality and for autonomy from Great Britain, she unfurled what she called the "Flag of Indian Independence"

61. b

62. d

There has been lots of negative press about artificial sweeteners. Some studies have claimed they might make people more hungry and upset blood-sugar levels, but there is no convincing evidence of harm.

There are some people who cannot or should not consume artificial sweeteners, however. Children up to the age of three should not have them, but pregnant women can. People born with a rare genetic condition called phenylketonuria should avoid aspartame because it can be harmful to them (This condition stops their body from properly breaking down the amino acid phenylalanine – one of the building blocks of proteins, which is also found in aspartame. In such persons, high levels of phenylalanine can cause nerve damage and mental retardation). For the rest of us, it is worth noting that consuming lots of them may cause flatulence and diarrhoea.

63. c

The word retrograde literally means ‘moving backwards’.

All of the planets in our solar system orbit the Sun in the same direction (anti-clockwise, if you're viewing from a position floating somewhere above the Sun's North pole). These general-consensus orbits are known as ‘prograde’ orbits (literally ‘moving forwards’). Most of the objects in our solar system are in prograde orbits around their parents (for earth, ‘parent’ is sun, for our moon, ‘parent’ is earth), but a handful are on retrograde orbits.

This simply means that, when viewed from our imaginary vantage point ‘above’ the solar system, these objects orbit their parents in a

clockwise direction, instead of the more mainstream anti-clockwise choice.

In the news (BBC): An asteroid in Jupiter's orbit may have come from outside our Solar System, according to a new study. Unlike ‘Oumuamua, the interstellar object which briefly visited the Solar System earlier this year, 2015 BZ509 (known as BZ) seems to have been here for 4.5 billion years. This makes it the first known interstellar asteroid to have taken up residence orbiting the Sun. It is not yet known where the object came from. BZ is in a retrograde orbit, moving around the Sun in the opposite direction to the eight planets, and the majority of other objects in the Solar System.

This immediately makes it stick out, as almost everything which formed from the disk of gas and debris around the Sun follows the direction of the star's rotation.

64. d

It was launched by Mappila Muslims and was the culmination of a series of Mappila revolts that recurred throughout the 19th century and early 20th century.

The Mappilas attacked and took control of police stations, British government offices, courts and government treasuries.

In the later stages of the uprising, Mappilas committed several atrocities against the Hindu community, who they accused of helping the police to suppress their rebellion.

65. c

66. b

The Setting in Motion of the Dharmachakra Sutra or Promulgation of the Law Sutra) is a Buddhist text that is considered to be a record of the first teaching given by Gautama Buddha after he attained enlightenment.

According to tradition, the Buddha gave this teaching in Sarnath, India, to the "five ascetics", his former companions with whom he had spent six years practicing austerities.

The main topic of this sutra is the Four Noble Truths, which are the central teachings of Buddhism that provide a unifying theme, or conceptual framework, for all of Buddhist thought. This sutra also introduces the Buddhist concepts of the Middle Way, impermanence, and dependent origination.

67. c

The Subglacial Antarctic Lakes Scientific Access (SALSA) project is an integrative study of subglacial geobiology, water column and sedimentary organic carbon, and geological processes in Mercer Subglacial Lake, a hydrologically active subglacial lake beneath the Whillans and Mercer ice streams in West Antarctica. The project was funded in 2016 by the Antarctic Integrated System Science Program with the National Science Foundation's Office of Polar Programs. There are eleven principal investigators at eight different US institutions with additional US and international collaborators. The expedition, known as SALSA (Subglacial Antarctic Lakes Scientific Access), hopes to shed light on what kind of life can survive in such remote regions and serve as an on-Earth comparison for habitats deep inside Mars or on the ice-covered moons of Jupiter and Saturn.

68. b

The government will use a 70 point Performance Grading Index (PGI) to assess areas of deficiency in each state's school education system.

69. a

The Treaty of Madras was a peace agreement which brought an end to the First Anglo-Mysore War. Fighting had broken out in 1767

and the forces of Hyder Ali had come close to capturing Madras at one point.

The Treaty contained a clause requiring the British to assist Hyder Ali if he was attacked by his neighbours.

Hyder felt this agreement was broken when he didn't receive any help when Mysore went to war with the Marathas in 1771.

Bad faith arising from the broken clause may have been a reason behind the outbreak of the Second Anglo-Mysore War a decade later

70. a

71. b

Reference:

<http://www.isro.gov.in/Spacecraft/gsat-6>.

72. d

Statement 1: It is an economic Union, not a political Union, as all member states are autonomous units.

Statement 2: Some EU members are also NATO members, but EU is not its subagency.

Statement 3: The Treaty establishing a Constitution for Europe (TCE), (commonly referred to as the European Constitution or as the Constitutional Treaty), was an unratified international treaty intended to create a consolidated constitution for the European Union (EU). It would have replaced the existing European Union treaties with a single text. But it was rejected by the French and Dutch voters.

Statement 4: It has its own flag, anthem, founding date, and currency. It also has some form of a common foreign and security policy in its dealings with other nations.

73. c

74. a

It was established in Madras (Chennai) in 1864.

It was inspired by the Brahmo Samaj and worked to abolish caste distinctions and promote widow remarriage and women's education. So, 1 is correct.

Its members believed in one God. They condemned the superstitions and rituals of orthodox Hinduism. So, 2 and 4 are incorrect

75. a

Statement 1: He was a member of the Imperial Legislative Council from 1912 and when in 1919 it was converted to the Central Legislative Assembly he remained its member till 1926.

Statement 2: He founded it at Haridwar in 1905. He was a member of the Hindu Mahasabha.

Statement 3: He was a moderate leader and opposed communal politics by the British. He was an important figure in the Non-cooperation movement. However, he was opposed to the politics of appeasement by Congress and its participation in the Khilafat movement.

Statement 4: Malaviya was the President of the Indian National Congress on two occasions (1909, 1918). He left Congress in 1934.

76. a

77. a

78. d

The Kessler syndrome (also called the Kessler effect, proposed by the NASA scientist Donald J. Kessler in 1978, is a scenario in which the density of objects in low Earth orbit (LEO) is high enough that collisions between objects could cause a cascade—each collision generating space debris which increases the

likelihood of further collisions. One implication is that the distribution of debris in orbit could render space exploration, and even the use of satellites, unfeasible for many generations.

79. c

Priority Sector Lending Certificates (PSLCs) are tradable certificates issued against priority sector loans of banks so as to enable banks to achieve their specified target and sub-targets for priority sector lending through purchase of these instruments in the event of a shortfall and at the same time incentivizing the surplus banks to lend more to these sectors. The idea of issuing priority sector lending certificates first appeared in the Report of the Dr. Raghu Ram Rajan led Committee on Financial Sector Reforms – A Hundred Small Steps. The Committee proposed the PSLC scheme to allow a more efficient implementation of the priority sector lending mandate (with similar schemes extending to possible financial service mandates also). There would be four kinds of PSLCs: PSLC Agriculture: Counting for achievement towards the total agriculture lending target. PSLC SF/MF: Counting for achievement towards the sub-target for lending to Small and Marginal Farmers. PSLC Micro Enterprises: Counting for achievement towards the sub target for lending to Micro Enterprises. PSLC General: Counting for achievement towards the overall priority sector target.

80. b

The Urban Climate Change Resilience Trust Fund (UCCRTF) was established in December 2013 under the Urban Financing Partnership Facility. It supports ADB's response to the huge unmet needs of the region for both basic and economic infrastructure, being a core business area of operations under the Strategy 2020. The UCCRTF will help build resilience to the effects of climate variability

and climate change within medium-sized cities in Asia, particularly to reduce the vulnerability of the urban poor. The UCCRTF will use a systems-centered approach that supports making climate change a central element of city planning. This will be linked to the implementation of infrastructure and policy or institutional interventions, as well as strong knowledge, capacity building, and networking components.

The eligible countries to receive support from the fund are Bangladesh, Pakistan, India, Indonesia, Myanmar, Philippines, and Viet Nam. The Rockefeller Foundation, Switzerland, the United Kingdom, and the United States support the fund.

81. c

82. a

83. d

Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans. The virus is transmitted to people from wild animals and spreads in the human population through human-to-human transmission.

84. c

As per the commission, there should be a constitutional reconstruction in the form of a federal constitution. The provinces should be given full autonomy including law.

Other major recommendations include:

The number of members of provincial legislative council should be increased. Governor-general should have complete power to appoint the members of the cabinet.

The governor should have discretionary power to relate to internal security and administrative powers to protect the different communities.

The government of India should have complete control over the high court.

There were no Indian members in the commission. No universal franchise was proposed and the position of governor-general remained unaffected.

There was no provision to abolish separate electorate but it was rather extended to other communities as well. No financial devolution was proposed.

85. c

86. c

87. c

88. a

Multi-drug-resistant tuberculosis (MDR-TB) is a form of tuberculosis (TB) infection caused by bacteria that are resistant to treatment with at least two of the most powerful first-line anti-TB medications (drugs), isoniazid and rifampin. Some forms of TB are also resistant to second-line medications, and are called extensively drug-resistant TB (XDR-TB).

Tuberculosis is caused by infection with the bacteria *Mycobacterium tuberculosis*. Almost one in four people in the world are infected with TB bacteria. Only when the bacteria become active do people become ill with TB. Bacteria become active as a result of anything that can reduce the person's immunity, such as HIV, advancing age, diabetes or other immunocompromising illnesses.

TB can usually be treated with a course of four standard, or first-line, anti-TB drugs (i.e., isoniazid, rifampin and any fluoroquinolone).

89. b

90. d

It is a respiratory disease caused by virus that is endemic in pigs. The symptoms are the

same as the seasonal flu -- cough, sore throat, and body aches. Swine flu is transmitted from person to person by inhalation or ingestion of droplets containing virus from people sneezing or coughing; it is not transmitted by eating cooked pork products. The recent outbreak of swine flu in India is due to influenza virus H1N1.

91. d

92. d

It is a national park in the Golaghat and Nagaon districts of Assam. The sanctuary, which hosts two-thirds of the world's great one-horned rhinoceroses, is a World Heritage Site. Kaziranga is recognized as an Important Bird Area by BirdLife International for conservation of avifaunal species. Kaziranga has the largest population of the Wild water buffalo anywhere accounting for about 57% of the world population.

93. a

94. d

95. c

96. d

The Global Solar Council is international non-profit association of the national, regional and international associations in solar energy and the world's leading corporations. Founded in 2015, It offer programs in regulatory policy, trade policy, new market opening and jobs & skills training. It aims to enable solar energy to deliver on the promise of clean & distributed power, economic development and access to opportunity. International Solar Energy Society (ISES) is a founding member of the Global Solar Council, launched at the COP 21 climate change meeting in Paris.

97. c

Whether Green buildings are really green is to be decided against the predefined rating

systems. There are three primary Rating systems in India.

- GRIHA
- IGBC
- BEE

Green Rating for Integrated Habitat Assessment (GRIHA) is India's own rating system jointly developed by TERI and the Ministry of New and Renewable Energy, Government of India. It is a green building design evaluation system where buildings are rated in a three-tier process. The process initiates with the online submission of documents as per the prescribed criteria followed by on site visit and evaluation of the building by a team of professionals and experts from GRIHA Secretariat. GRIHA rating system consists of 34 criteria categorised in four different sections. Some of them are - (1) Site selection and site planning, (2) Conservation and efficient utilization of resources, (3) Building operation and maintenance, and (4) Innovation (CII) formed the Indian Green Building Council (IGBC) in year 2001. IGBC is the non-profit research institution having its offices in CII-Sohrabji Godrej Green Business Centre, which is itself a LEED certified Green building. Indian Green Building Council (IGBC) has licensed the LEED Green Building Standard from the USGBC. IGBC facilitates Indian green structures to become one of the green buildings. BEE developed its own rating system for the buildings based on a 1 to 5 star scale. More stars mean more energy efficiency. BEE has developed the Energy Performance Index (EPI). The unit of Kilo watt hours per square meter per year is considered for rating the building and especially targets air conditioned and non-air conditioned office buildings. Comprehensive Assessment System for Built Environment Efficiency (CASBEE) is a method for evaluating and rating the environmental performance of buildings and

the built environment. It is a system used by Japan.

98. d

As per some commentators, "Their view, at least in the early years, was that the world is created by God, and all things within it are pathways to knowledge of Brahman, the Ultimate Self, and the ultimate goal. Similarly, they saw that material wealth, if made and possessed with the correct intention - that of helping society and others - was in fact not only ethically sound, but an utter necessity for harmonious society."

In 1859, the Sabha was dissolved back into the Brahmo Samaj by Debendranath

Tagore.

99. a

100. c

IPCC is the leading international body for the assessment of climate change.

It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. So, 1 is wrong.

The IPCC reviews and assesses the most recent scientific, technical and socioeconomic information produced worldwide relevant to the understanding of climate change. It does not conduct any research nor does it monitor climate related data or parameters. So, 3 and 4 are wrong.

As an intergovernmental body, membership of the IPCC is open to all member countries of the United Nations (UN) and WMO. Currently 195 countries are Members of the IPCC. So, 2 is correct.

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