Answer & Explanation for G.S. Test-4 on Polity, Geography and Science held on 10th December'2017

Q1. Consider the following statements:

1. A cyclone in tropical region is called a hurricane if its wind speed is more than or equal to 151 km per hour.

2. The hurricane Irma which affected the Caribbean region in 2017 was a Category-5 hurricane.

3. The hurricane Harvey which affected the US in 2017 was a Category-5 hurricane.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: B

Expl: The categories of hurricanes are based on their wind speed as follows:

Category 1: 119-153 km/hr

Category 2: 154-177 km/hr

Category 3: 178-208 km/hr

Category 4: 209-251 km/hr

Category 5: more than or equal to 252km/hr

• Hurricane Irma reached category 5 and it affected more than 10 Caribbean countries. The 2017 hurricane season was the worst for Caribbean countries.

• Hurricane Maria was the other major hurricane which affected the region. Hurricane Maria also reached category 5.

• Hurricane Harvey was the first major hurricane to make landfall in the US after 11 years of "hurricane drought".

Q2. Consider the following statements:

1. Recently the International Union for the Conservation of Nature (IUCN) has removed the snow leopard from the Red List of Threatened Species.

2. IUCN has estimated the global population of snow leopard as more than 2500 but fewer than 10,000 mature individuals, and decline of at least 10 per cent over the three generations.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: 1. IUCN has changed the snow leopard's status on the Red List of Threatened Species from Endangered to Vulnerable.

2. For a species to be considered vulnerable the number of mature individuals must be lower than 10000 and the decline at least 10% over the three generations.

Q3. Which of the following cities is known for the highest average number of thunderstorms in a year?

A. Kampala

B. Alexandria

C. Durban

D. Djibouti

Ans: A

Expl: Thousands of thunderstorms occur on Earth at any given moment. Equatorial regions and ITCZ experience many of them as exemplified by the city of Kampala in Uganda, East Africa, which sits virtually on the Equator and averages 242 days a year of thunderstorms – a record.

Q4. Consider the following statements:

1. Tropical cyclones are not known to cross the equator.

2. Tropical cyclones in general move from west to east.

3. Tropical cyclones represent the 'Primary Circulations' of tropical atmosphere.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: B

Expl: The low pressure/ITCZ areas, which are a few degrees (8 to 10) away from the equator promote the formation of tropical cyclones. This is so because the cyclonic system needs Coriolis force for the curvature of winds. Near the equator, Coriolis force is negligible.

Having originated over the warm waters of tropical oceans, these cyclones intensify as they move away from the equator. Tropical cyclones are the Secondary Circulations/Atmospheric Disturbances. These happen over the primary circulations (trade winds) of the tropical belt.

Since these are embedded in the trade winds, they move in general from west to east as trade winds are easterlies. Around 18-20 degrees latitudes, these systems sometimes recurve to move in northeast or north direction.

Q5. Consider the following statements with reference to frequently occurring "smog" episodes in urban areas of North India:

1. When the 'mixing depth' in the atmosphere is shallow, pollution gets enhanced.

2. Stronger winds in area enhance pollution.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: • The word "smog" was originally derived from the combination of the words smoke and fog.

• The atmospheric stability determines the extent to which vertical motions will mix the pollution with cleaner air above. The vertical distance between Earth's surface and the height to which convectional movements extend is called the mixing depth. Generally, the greater the mixing depth, the better the air quality.

• The stronger the wind, the more turbulent the air. Thus, strong winds mix polluted air more rapidly with the surrounding air, thereby causing the pollution to decrease.

Q6. Match List I with List II and select the correct answer using the code given below:

List-I	List-II
A. Granite	1. A mafic rock with large grains
B. Gabbro	2. A felsic rock with large grains
C. Basalt	3. An ultramafic rock with large grains
D. Peridotite	4. A mafic rock with small grains

A. 1:a 2:b 3:c 4:d

B. 2:a 1:b 4:c 3:d

C. 2:a 3:b 4:c 1:d

D. 1:a 4:b 3:c 2:d

Ans: B

Expl: Geologists distinguish four classes of igneous silicate rocks based on the proportions of silica to iron and magnesium. In order, from greatest to least proportion of silica to iron and magnesium, these classes are felsic, intermediate, mafic and ultramafic.

Q7. Consider the following statements:

1. Oxygen is the most abundant element in the earth's crust.

2. Silicon is the most abundant element in the earth's crust.

3. Iron is the most abundant element in earth's composition.

4. Oxygen is the second most abundant element in earth's composition.

Which of the statements given above is/are correct?

A. 2 only

B. 2 and 3 only

C. 1, 3 and 4 only

D. 2, 3 and 4 only

Ans: C

Expl: There are more than 100 chemical elements but 99 % of earth's mass is constituted by only 8 elements. The first four are: Iron (35%), Oxygen (30%), Silicon (15%) and Magnesium (13%).

In earth's crust, the four most abundant elements are: Oxygen (46%), Silicon (28%), Aluminium (8%) and Iron (6%).

Q8. Assertion (A): Without Greenhouse gases, Earth would be a frozen wasteland.

Reason (R): The balance of insolation and outgoing radiation results in a constancy of average temperature of earth's surface.

A. if both A and R are true and R is the correct explanation of A

B. if both A and R are true but R is not the correct explanation of A

C. if A is true but R is false

D. if A is false but R is true

Ans: B

Expl: Both these statements are correct.

• The earth's surface absorbs insolation and radiates it in the form of thermal energy (infrared radiation) that heads back upward. If the earth had no atmosphere, all this energy would escape back into space. But our planet does have an atmosphere, and certain gases (water vapour, carbon dioxide, methane, nitrogen dioxide and ozone) in air absorb thermal radiation and re-radiate it. In effect, these gases trap infrared radiation and keep the lower atmosphere warm.

• Since the amount of incoming solar radiation is nearly equal to the amount of outgoing terrestrial radiation for Earth as a whole, the average worldwide temperature remains constant.

Q9. With which of the following, the phenomenon “western intensification” is directly associated with?

A. Sub-tropical Gyres

B. West Wind Drift

C. Upwelling

D. Down-welling

Ans: A

Expl: In addition to differences in temperature, the poleward moving warm currents off the east coast of continents tend to be narrower, deeper, and faster than the equatorward moving cool currents flowing off the west coast of continents. This phenomenon is called western intensification because it occurs on the western side of the sub-tropical gyres. There are a number of reasons for it – the main being Coriolis effect. The Coriolis effect is greater in higher latitudes, the eastward moving high latitude current flow is deflected back toward the equator more strongly than the westward moving equatorial current flow which is deflected toward the poles. This means that the cool water is slowly flowing back toward the equator across much of the eastward-moving high latitude currents, whereas the poleward-moving warm currents are confined to a fairly narrow zone off the east coasts of continents.

Q10. Which of the following is a katabatic wind that blows from the French Alps towards the Mediterranean Sea?

A. Mistral

B. Santa Ana

C. Chinook

D. Foehns

Ans: A

Expl: Katabatic (Fall) Wind: In the winter, areas adjacent to highlands may experience a local wind called a katabatic wind or fall wind. Under the influence of gravity, the cold air cascades over the rim of a highland like a waterfall. Mistral is one of the most famous katabatic winds.

Warm, dry winds sometimes move down the east slopes of the Rockies, where they are called chinooks, and the Alps, where they are called foehns. Such winds are often created when a pressure system on the leeward side of the mountains, such as a cyclone, pulls air over these imposing barriers. Another chinooklike wind that occurs in the US is the Santa Ana.

Q11. Consider the following statements:

1. A cold front has precipitation more or less similar to convectional type precipitation.

2. Orographic precipitation is gentler and prolonged.

3. Orographic precipitation is restricted in terms of time of the day.

4. Frontal precipitation does not take place outside the temperate region.

Which of the statements given above are correct?

A. 1 and 2 only

B. 2 and 4 only

C. 2 and 3 only

D. 1, 2 and 4 only

Ans: A

Expl: • A cold front is one in which cold air is aggressive and it cuts-off the warm air from the ground and forcibly uplifts the warm air to great heights in a narrow zone, resulting in precipitation almost similar to convectional type precipitation. The convectional precipitation is with larger drops, showery and short duration.

• In orographic uplift, the warm air rises gradually and as it rises, it also spreads horizontally resulting in precipitation which is more likely to be gentler, widespread and prolonged.

• Orographic precipitation has no restriction in terms of latitude, season and time of the day. It can occur when a moist parcel of air is forced to rise because of a barrier.

• Frontal precipitation is primarily restricted to middle latitudes as fronts are rare and less significant in other regions. But the frontal systems of middle latitudes do travel to other regions and cause precipitation there, like for example, in north-west India during winter season, these systems (called Western Disturbances) cause precipitation.

Q12. Which one of the following banks is NOT associated with North-West Atlantic fishing zone?

A. Grand Banks

B. Sable Bank

C. Georges Bank

D. Dogger Banks

Ans: D

Expl: • An ocean bank is a part of the sea which is shallow compared to its surrounding area, such as a shoal or the top of an underwater hill. Such locations are rich in nutrients and make important fishing zones.

• In North-West Atlantic, the important banks/fishing zones are: The Grand Banks – southeast of Newfoundland, the Sable Bank – near Nova Scotia and the Georges Bank – near New England State.

• Dogger Bank is an important fishing ground in the North-East Atlantic fishing zone.

Q13. Which one of the following climatic types is primarily the outcome of shifting of pressure belts with the seasonal apparent movement of the Sun in the sky?

A. Equatorial Type

B. Mediterranean Type

C. Tundra Type

D. None of the above

Ans: B

Expl: • Mediterranean Type Climate Regions are the tropical margins of middle latitudes (30 to 40 degrees N and S) and occupy the western margins of the continents. Summers are hot and nearly dry whereas the winters are cool and moist.

• The major areas under this climate are: Areas around the Mediterranean Sea, California, Central Chile, Southern parts of South Africa and Southern and Southwestern parts of Australia.

• In June when the overhead Sun is at the Tropic of Cancer, all the pressure belts move about 5 to 10 degrees north of their average positions. The 'Mediterranean' parts of the southern continents then come under the influence of the westerlies and receive rain in June (winter in southern hemisphere).

• In the same manner, when the Sun is overhead at the tropic of Capricorn in December, all the pressure belts shift 5 to 10 degrees south of their average positions. The 'Mediterranean' parts of Europe and California then come under the influence of the Westerlies and receive rain in December (winter in the northern hemisphere).

• In their respective summer season, these areas are under the influence of trade winds and being on the west do not get rain (as trade winds are easterlies).

Q14. Consider the following:

1. Brackish Water Aquaculture.

2. Unlined Canals (Kutcha canals)

3. Over Irrigation

Which of the statements given above is/are causes of soil salinization?

A. 3 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Ans: D

Expl: Brackish water aquaculture in Andhra Pradesh has created problems of ground water pollution and soil salinization. Unlined distribution channels of Indira Gandhi Canals are reasons for soil salinization in Rajasthan. Over irrigation has created the problem in Punjab.

Q15. Consider the sub component of "Pradhan Mantri Krishi Sinchayi Yojna":

1. Accelerated Irrigation Benefit Programme (AIBP) : Ministry of Agriculture and Farmer's Welfare

2. On Farm Water Management (OFWM): Ministry of Rural Development

3. Watershed Management: Ministry of Water Resources and Ganga Rejuvenation

Which of the above pairs is/are correctly matched?

A. 1 only

B. 1 and 2 only

C. 1, 2 and 3

D. None of the above

Ans: D

Expl: AIBP – Ministry of Water Resources and Ganga Rrejuvenation.

OFWM – Ministry of Agriculture and Farmer's Welfare.

Watershed Management – Ministry of Rural Development.

Q16. Consider the following rivers:

1. Kali Sindh

2. Sindh

3. Parbati

4. Banas

5. Shipra

Which of the above are right bank tributaries of Chambal river?

A. 1, 2 and 3 only

B. 1, 3, 4 and 5 only

C. 1, 3 and 5 only

D. 1, 2, 3, 4 and 5

Ans: C

Expl: Banas is the left bank tributary of Chambal. Sindh is not a tributary of Chambal but of Yamuna.

Q17. Consider the following statements:

1. Soil texture and structure largely determine the water retention properties of soil.

2. Moisture holding capacity of the soil is inversely proportional to grain size of soil.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: Soils with large grains have coarse texture and fine texture is due to small grains in soil. It means more is the dry content, finer is the texture.

Soil is made up of particles and small aggregates, these can clump together to form larger aggregates (peds) which are the 'building blocks' of the soil. Granular structure is best suited for plant growth.

Q18. Consider the following statements:

1. Tamil Nadu receives maximum of its rainfall from North East Monsoon.

2. Tamil Nadu on an average received deficit rainfall during North East Monsoon in 2017.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: Tamil Nadu received 9% deficit this year from North East Monsoon. Of 32 districts only 4 including Chennai had an excess of 20%. Ramanantha Puram witnessed a deficit of 46% this year.

Though some areas of Tamil Nadu receive rainfall from South West Monsoon but most of its rainfall comes from North East Monsoon.

Q19. Consider the following statements with reference to "Black Soils" of India:

1. They are poor in Nitrogen and Humus.

2. Sand and silt make up more than 60% of the soil.

3. They have inverted profile.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 3 only

C. 1 and 2 only

D. 2 and 3 only

Ans: B

Expl: Black soils are poor in Nitrogen, Humus and Phosphorus. They are rich in Iron, Magnesium and Aluminium along with lime. Clay makes upto 60-62% of soil.

Q20. Which of the following statement/s is/ are correct in the context of Wildlife Protection Act, 1972?

1. It extends to the whole of India and provides for protection of wild animals, birds & plants.

2. It has six Schedules which give varying degrees of protection.

3. Schedule I and part II of Schedule II provide absolute protection- offences under these are prescribed the highest penalties.

4. The plants in Schedule VI are prohibited from cultivation and planting.

Select the correct answer using the code given below:

A. 1, 2 and 3 only

B. 2, 3 and 4 only

C. 2 and 3 only

D. 1, 2, 3 and 4

Ans: B

Expl: Statement 1 is not correct as the Act extends to whole of India except the State of Jammu & Kashmir which has its own wildlife act. The second part of the statement is correct that it provides for protection of wild animals, birds and plants.

Also know that- Schedule I and part II of Schedule II provide absolute protection - offences under these are prescribed the highest penalties. Species listed in Schedule III and Schedule IV are also protected, but the penalties are much lower. Schedule V includes the animals which may be hunted. The plants in Schedule VI are prohibited from cultivation and planting.

Some of the common animals, birds which are part of Schedule I are-

Blackbuck, Cheetah, Gangetic Dolphin, Gaur or Indian Bison, Indian Elephant, Indian Lion, Indian Wild Ass, Lion- tailed Macaque, Pygmy Hog, Rhinoceros, Snow leopard, Tiger, Crocodile, Gharial, Great Indian Bustard

Q21. Which of the following statement/s is/are correct?

1. Bamboo, though, taxonomically a grass, was till recently, legally defined as a tree under the Indian Forest Act, 1927.

2. Recently, Union Government has promulgated the Indian Forest (Amendment) Ordinance, 2017 to exempt bamboo grown anywhere from definition of tree.

3. Before this amendment, the felling and transit of bamboo grown on forest as well non-forest land attracted the provisions of the Indian Forest Act, 1927.

4. India is world's largest bamboo producer.

Select the correct answer using the code given below:

A. 1, 2 and 3 only

B. 1, 3 and 4 only

C. 1 and 2 only

D. 2, 3 and 4 only

Ans: C

Expl: Statement 2 is incorrect as Union Government has promulgated the Indian Forest (Amendment) Ordinance, 2017 to exempt bamboo grown in non-forest areas (and not forest areas. Bamboo grown in forest areas would continue to be governed by the provisions of Indian Forest Act) from definition of tree, thereby dispensing with the requirement of felling/transit permit for its economic use. Bamboo, though, taxonomically a grass, was legally defined as a tree under the Indian Forest Act, 1927. Before this amendment, the felling and transit of bamboo grown on forest as well non-forest land attracted the provisions of the Indian Forest Act, 1927. This was a major impediment for bamboo cultivation by farmers on non-forest land.

Statement 4 is incorrect as India is world's second largest producer of bamboo.

Also know that – major objective of the amendment is to promote cultivation of bamboo in non-forest areas to achieve twin objectives of increasing the income of farmers and also increasing the green cover of the country. It will also create a viable option for cultivation in 12.6 million hectares of cultivable waste land. The measure will go a long way in enhancing the agricultural income of farmers and tribals, especially in North-East and Central India. The amendment will encourage farmers and other individuals to take up plantation/ block plantation of suitable bamboo species on degraded land, in addition to plantation on agricultural land and other private lands under agroforestry mission. The move is in line with the objective of doubling the income of farmers, besides conservation and sustainable development. Some of the other benefits of amendment include enhancing supply of raw material to the traditional craftsmen of rural India, bamboo based/ paper & pulp industries, cottage industries, furniture making units, fabric making units, incense stick making units. Besides promoting major bamboo applications such as wood substitutes and composites like panels, flooring, furniture and bamboo blind, it will also help industries such as those dealing with food products (bamboo shoots), constructions and housing, bamboo charcoal etc. The amendment will greatly aid the success of recently constituted National Bamboo Mission.

Bamboo grows abundantly in areas outside forests with an estimated growing stock of 10.20 million tonnes. About 20 million people are involved in bamboo related activities. One tonne of bamboo provides 350 man days of employment. An enabling environment for the cultivation of bamboo will help in creation of job opportunities in the country. The amendment will unleash the potential of bamboo in terms of rural and national economy apart from ecological benefits such as soil-moisture conservation, landslide prevention and rehabilitation, conserving wildlife habitat, enhancing source of bio-mass, besides serving as a substitute for timber.

The current demand of bamboo in India is estimated at 28 million tonnes. Though India has 19% share of world's area under bamboo cultivation, its market share in the sector is only 6%. At present, India imports timber and allied products, such as pulp, paper, furniture etc. In 2015, India imported about 18.01 million cubic meters of timber and allied products worth Rs 43000 crores. The amendment will help in addressing some of these issues, besides meeting the demand from domestic production. As per the assessment of United Nation's Industrial Development Organisation (UNIDO), the bamboo business in the North-East Region alone has a potential of about Rs. 5000 crores in the next ten years. The amendment will therefore, help in harnessing this great potential and enhance the scope to increase the present level of market share and improve the economy of the entire country, particularly the North Eastern region.

Q22. Which of the following statements is/ are correct about 'Zoonoses'?

1. As per UNEP, about 60% of all infectious diseases in humans are zoonotic in origin.

2. Some of the examples of zoonoses are- Ebola, Anthrax, Middle East Respiratory Syndrome (MERS), Sudden Acute Respiratory Syndrome (SARS), Zika virus etc.

3. While many zoonoses originate in the wild, livestock often serves as an epidemiological bridge between wildlife and human infections.

4. Climate change is also a major factor for zoonoses emergence.

Select the correct answer using the code given below:

A. 2, 3 and 4 only

B. 1, 2 and 3 only

C. 1 and 2 only

D. 1, 2, 3 and 4

Ans: D

Expl: Zoonotic diseases or Zoonoses are caused when pathogens pass from wild or domestic animals through the biophysical environment to the human beings. UNEP 2016 Frontiers Report has identified this as an emerging issue of environmental concern.

Q23. 'Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development' or 'Global Wildlife Program' is led by which of the following international organizations?

A. United Nations Environment Programme

B. International Union for Conservation of Nature

C. World Bank

D. Global Environment Facility

Ans: C

Expl: Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development" program also known as the Global Wildlife Program (GWP). The GWP is a World-Bank led global partnership that promotes wildlife conservation and sustainable development by combating illicit trafficking in wildlife. This seven-year, $131 million grant program is expected to leverage an additional $704 million in additional co-financing from a wide range of partners to promote investments across Africa and Asia. By approaching the poaching crisis holistically through various country projects and a larger global project, it seeks to reduce both the supply and demand that drives the illegal wildlife trade, and protect species and habitats through integrated landscape planning.

India has jointly hosted the Global Wildlife Programme (GWP) with World Bank and United Nations Development Programme. The programme was launched on October 2. The GWP will address issues related to illegal wildlife trade across 19 countries in Asia and Africa. It will act as a platform to exchange knowledge and coordinate in on-ground action for combating illegal poaching of wildlife and improve governance on wildlife conservation.

Also know that- The Global Environment Facility (GEF) in June 2015 launched the "Global Partnership on Wildlife Conservation and Crime Prevention for Sustainable Development" program also known as the Global Wildlife Program (GWP) but it is led by World Bank. The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit to help tackle our planet's most pressing environmental problems. Since then, the GEF has provided over $17 billion in grants and mobilized an additional $88 billion in financing for more than 4000 projects in 170 countries. Today, the GEF is an international partnership of 183 countries, international institutions, civil society organizations and the private sector that addresses global environmental issues.

Q24. Which of the following statement/s is/are correct in the context of a recent ban on pet coke?

1. Petroleum coke, the leftover from refining Canadian tar sands and other heavy crude, is cheaper and burns hotter than coal.

2. Environment Protection (Prevention and Control) Authority (EPCA) investigation has exposed extremely high sulphur level in these fuels ranging from more than 20,000 PPM to 74,000 PPM.

3. Apart from high sulphur level, it also has emissions of heavy metals and mercury.

4. China is the biggest producer and exporter of petcoke in the world.

Select the correct answer using the code given below:

A. 1, 2 and 4 only

B. 1, 2 and 3 only

C. 1 and 2 only

D. 1, 2, 3 and 4

Ans: B

Expl: Statement 4. is incorrect as the USA is the largest producer and exporter of petcoke in the world. China traditionally has been the largest importer but India was also catching up fast. Demand for pet-coke has increased to such an extent that in 2016, India imported 14 million tonnes of pet-coke, which is more than the domestic production. If import and domestic production is added, then India has used more pet-coke than China, when its pollution was at its peak. Today, China has stopped imports of pet-coke. But India has become a dumping ground of pet-coke from the US, which has banned its internal use because of pollution.

Q25. The concentration of a substance, such as a toxic chemical in various tissues of a living organism is called as

A. Biomagnification

B. Bioaccumulation

C. Persistent Organic Pollutant

D. Eutrophication

Ans: B

Expl: Bioaccumulation is the accumulation or concentration of a substance such as toxic chemicals in various tissues of a living organism. Bioaccumulation takes places within an organism when the rate of intake of a substance is greater than the rate of excretion or metabolic transformation at that substance.

Also know that- Biomagnification is the increasing concentration of a substance such as a toxic chemical in tissues of organisms at successively higher levels in food chain. As a result of bio magnification, organisms at the top of food chain generally suffer greater harm from a persistent toxin or pollutant than those at lower levels.

Persistent Organic Pollutants are the chemical substances than remain in the environment are transported over large distances, bioaccumulate through the food web and pose a risk of causing adverse effects to the environment and human health. PoPs include pesticides like DDT, etc.

Eutrophication or more precisely hypertrophication, is the enrichment of a water body with nutrients, usually with an excess amount of nutrients. This process induces growth of plants and algae and due to the biomass load, may result in oxygen depletion of the water body.

Q26. Which of the following statement/s is/ are correct about ozone layer?

1. The ozone layer in the stratosphere absorbs a portion of the radiation from the Sun called as UVB radiation, preventing it from reaching the Earth's surface.

2. Ozone Depleting Substances (ODS) release chlorine or bromine when they are exposed to intense UV light in the stratosphere.

3. Some natural processes, such as large volcanic eruptions, can have an effect on ozone levels.

4. All chlorine and bromine sources on the earth contribute to ozone layer depletion.

Select the correct answer using the code given below:

A. 1 and 4 only

B. 1, 2 and 3 only

C. 2 and 4 only

D. 1, 2, 3 and 4

Ans: B

Expl: Statement 4. is not correct as not all chlorine and bromine sources contribute to ozone layer depletion. For example, researchers have found that chlorine from swimming pools, industrial plants, sea salt, and volcanoes does not reach the stratosphere. In contrast, ODS are very stable and do not dissolve in rain. Thus, there are no natural processes that remove the ODS from the lower atmosphere.

Also know that- Some natural processes, such as large volcanic eruptions, can have an indirect effect on ozone levels. For example, Mt. Pinatubo's 1991 eruption did not increase stratospheric chlorine concentrations, but it did produce large amounts of tiny particles called aerosols- small particles or liquid droplets in the atmosphere that can absorb or reflect sunlight depending on their composition (different from consumer products also known as aerosols). These aerosols increase chlorine's effectiveness at destroying ozone. The aerosols in the stratosphere create a surface on which CFC-based chlorine can destroy ozone. However, the effect from volcanoes is short-lived.

Q27. Consider the following statements:

1. Kiel Canal connects North Sea with Baltic Sea.

2. Sea of Marmara connects Black Sea with Mediterranean Sea.

Which of the statements given above is/are incorrect?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: Both statements are correct.

Q28. Consider the following statements:

1. Rio Grande forms the natural boundary between USA and Mexico.

2. 28th Parallel lies between USA and Canada.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: 49th Parallel lies between USA and Canada.

38Th Parallel lies between North Korea and South Korea.

Q29. Consider the following statements:

1. Danube is the longest river in Europe.

2. Salween is the longest river in Myanmar.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: Rank

River	Length (in km)
1 Volga	3,692
2 Danube	2,860
3 Ural	2,428
4 Dnieper	2,290

The Irrawaddy River (also known as the Ayeyarwady River) is the longest river in Myanmar which flows from north to south originating in the Kachin River at the N'mai and Mali River's confluence.

Q30. Match List-I with List-II and select the correct answer from the codes given below:

List-I	List-II
A. Perth	1. South Australia
B. Adelaide	2. Western Australia
C. Sydney	3. New South Wales
D. Hobart	4. Tasmania

A. 1:a 2:b 4:c 3:d

B. 2:a 1:b 3:c 4:d

C. 1:a 2:b 3:c 4:d

D. 4:a 3:b 1:c 2:d

Ans: B

Expl: None

Q31. In the context of the Election Commission of India (ECI), consider the following statements:

1. Election Commission is not concerned with the election of Panchayats and Municipalities in the States.

2. The Constitution has not prescribed any qualification for a person to be appointed as the Chief Election Commissioner (CEC) or the Election Commissioners (ECs).

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: Recently the Supreme Court (SC) recommended the enactment of legislation for reforms in the appointments of the Chief Election Commissioner (CEC) and Election Commissioners (ECs). The President appoints CEC and other ECs, on the advice given by the Prime Minister and his Cabinet.

Q32. In the context of the Finance Commission of India, consider the following statements:

1. The Commission has all the powers of a civil court.

2. Arvind Panagariya is the chairperson of the 15th Finance Commission.

3. The Constitution requires the Finance Commission to be set up every five years or earlier.

Which of the statements given above is/are correct?

A. 1 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Ans: C

Expl: The Union Cabinet approved the setting up of the 15th Finance Commission under Mr. N.K. Singh (former MP and Secretary, Government of India). The Constitution requires the Finance Commission to be set up every five years or earlier. The Commission will make recommendations for the five year period from 2020 to 2025.

Q33. Consider the following statements in the context of the guidelines laid down for the election of the President of India:

1. Political parties are not allowed to issue a whip to their members for voting in the Presidential election.

2. A candidate is declared elected as the President on the basis of plurality of valid votes polled in the Presidential election.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: Article 55 of the Indian Constitution lays the guidelines about the way Indian President is to be elected. It says, “The election of the President shall be held in accordance with the system of proportional representation by means of the single transferable vote and the voting at such election shall be by secret ballot.” Parties can’t issue a whip to their members. Since the representatives are supposed to exercise their free will, political parties are not allowed to issue a whip to their members for voting. The President is elected on the basis of majority i.e., more than 50% of valid votes polled. In the Lok Sabha and Assembly elections, a candidate is declared elected on the basis of plurality i.e. whoever gets the highest number of valid votes polled is declared elected.

Q34. With reference to the National Flag of India, which of the following statements is/are correct?

1. Right to fly the national flag is a fundamental right given under Article 21 of the Constitution.

2. There is no prohibition in the Constitution for a State to have its own flag.

3. It is an offence to display the national flag in an inverted position.

Select the correct answer using the code given below:

A. 1 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Ans: B

Expl: In 2004, the Supreme Court ruled that the "right to fly the national flag freely with respect and dignity is a fundamental right of a citizen within the meaning of Article 191.A. of the Constitution of India, being an expression and manifestation of his allegiance and feelings and sentiments of pride for the nation." In S.R. Bommai v/s Union of India (Supreme Court 1994) case, the Supreme Court has declared that federalism is a basic feature of the Constitution and States are supreme in their sphere. This being the Constitutional position, there is no prohibition in the Constitution for the State to have its own flag. The Indian Tricolour flag is made up of three equal rectangular bands – saffron on top, white in the middle, and green in the bottom. The length height ratio of the flag is 3:2. The dark blue Asoka Chakra in the middle band has 24 spokes. On July 22, 1947, the Constituent Assembly adopted the Indian flag in its current form during one of its meetings.

Q35. With reference to the Parliament of India, consider the following statements:

1. A private member's bill can only be introduced by the members of the opposition party.

2. A member who wants to introduce a private member's bill has to give prior notice of one month.

3. A member cannot introduce more than four bills during a session of the Parliament.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: C

Expl: A private member's bill is introduced by an individual member of the legislature as opposed to a party. He/She may belong to the party in power or the Opposition. A member who wants to introduce a bill has to give prior notice of one month, with a copy of the Statement of Objects and Reasons, unless the Speaker permits a shorter notice. If the bill accompanies the President's recommendation, if necessary, the period of notice is calculated from the date of receipt of the recommendation in Lok Sabha Secretariat. Once the bill is drafted, it is circulated among members of the Lok Sabha two days before its introduction. When the bill is tabled in the House, by convention, the motion is not opposed. There have been exceptions, however. A member cannot introduce more than four bills during a session and while a bill is pending, a similar bill cannot be admitted.

Q36. In the context of the various forms of democratically elected governments, consider the following statements:

1. The core principle of Presidential form of government involves separation of the Legislature and the Executive.

2. The core principle of a Parliamentary form of government is the responsibility of the Executive to the Legislature.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: Both statements are correct.

Q37. Consider the following statements regarding the geographical boundaries of India:

1. The Union of India includes only the States and the two Union Territories of Delhi and Puducherry.

2. The territory of India includes twenty nine States, the seven Union Territories and such other territories as may be acquired by India.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: No Union Territory shares a federal relationship with the Union Government. The UTs are part of the Centre. They are not included in the expressly “Union of India” which includes only the Union and the twenty nine States.

Q38. Which of the following indicates the difference between a “Non-Resident Indian” (NRI) and an “Overseas Citizen of India” (OCI)?

A. The former is an Indian citizen, but the latter is a foreigner.

B. The former cannot contest election to the Lok Sabha and Legislative Assemblies, but the latter can.

C. Both of them require a visa to visit India.

D. The former is a foreigner but the latter a citizen of India.

Ans: A

Expl: None

Q39. Which of the following is/are the effects of proclamation of President's rule in a State?

1. The State Legislative Assembly can be suspended but cannot be dissolved by the President.

2. When the proclamation of emergency ceases to be in force, the laws made by the Parliament also come to an end.

Select the correct answer using the code given below:

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: The State Legislative Assembly may be suspended or dissolved by the President. However, the Supreme Court in S.R. Bommai v/s Union of India (1994) case ruled that before the Parliament gives its approval to the imposition of President's rule, the President shall not dissolve the Assembly and put it under suspended animation. Under Article 3572. , any Central Law made when the President's rule is in force in a State shall continue to be in force unless modified or repealed by the State Legislature.

Q40. In the context of Indian Secularism, consider the following statements:

1. The Indian State has no right to intervene in the affairs of religion in the same manner the religion has no right to interfere in the affairs of the State.

2. In India, Article 25 confers freedom of religion but not freedom from religion on all individuals.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: Indian Secularism has made room for and is compatible with the idea of State supported religious reforms. In India, State can regulate the social evils which are practiced in the name of religion.

Article 25 confers both freedom of religion and freedom from religion. Freedom of religion does not make it mandatory for everyone to follow one or more religions. It confers the fundamental right to reject all religions and remain an atheist or agnostic.

Q41. Which of the following statements relating to “curative petition” is/are correct?

1. A curative petition can be filed both before the Supreme Court and the High Courts.

2. The second review petition filed before a Court is called a curative petition.

3. The writ of Certiorari issued by a Court is curative in nature.

4. The principle of “locus standi” applies in case of filing a curative petition.

Which of the statements given above are correct?

A. 1 and 2 only

B. 2 and 4 only

C. 2 and 3 only

D. 1, 2 and 4 only

Ans: B

Expl: Under Article 137, this jurisdiction is available only to the Supreme Court and not to the High Courts. A writ of Certiorari is corrective in nature provided by a superior court against the judgement or order or direction of an inferior court.

Q42. Consider the following statements relating to the Amendment provision of the Indian Constitution:

1. The idea of amending procedure has been borrowed from the Constitution of Germany.

2. Article 368 in itself cannot be amended by the Parliament.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: The idea of amending procedure has been borrowed from the Constitution of South Africa. Article 368 in itself has been amended by the Parliament through 24th Amendment Act, 1971 and the 42nd Amendment Act, 1976. However, such an amendment Bill needs the ratification by not less than half of the State Legislatures.

Q43. Consider the following statements in the context of the Union Executive:

1. The Union Executive consists of the President, Vice President and the Council of Ministers.

2. Under the Indian Constitution, the political executive is only legally constituted.

3. The political executive in India is subjected to only legislative control.

Which of the statements given above is/are correct?

A. 1 only

B. 3 only

C. 1, 2 and 3

D. None of the above

Ans: D

Expl: The Union Executive consists of the President, Vice President, Council of Ministers and the Attorney General of India. Under the Indian Constitution, the political executive is legally and democratically constituted and is subjected to legislative control and judicial review. The British Colonial administration was legally but not democratically constituted.

Q44. In the context of the disputes regarding the election of the President, which of the following statements is/are correct?

1. All doubts and disputes arising out of or in connection with the election of the President or Vice-President are required into and decided by the Election Commission whose decision is final.

2. If the election of the President or the Vice President is declared void then the acts done by him prior to the date of such decision can be declared invalid by the Parliament.

Select the correct answer using the code given below:

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: All doubts and disputes arising out of or in connection with the election of the President or Vice President are inquired into and decided by the Supreme Court whose decision is final. If the election of the President or the Vice President is declared void by the Supreme Court, acts done by him prior to the date of such decision of the Supreme Court do not become invalid. They continue to be valid.

Q45. If a Bill requires the recommendation of the President for its introduction in a House, then which of the following statements is/are correct?

A. Such a Bill can be introduced only in the Lok Sabha.

B. Such a Bill can be introduced either in the Lok Sabha or the Rajya Sabha only.

C. Such a Bill can be introduced in either Houses of the Parliament or in a State Legislature.

D. Such a Bill is a Money Bill or Financial Bill that cannot be introduced in the Rajya Sabha.

Ans: C

Expl: A Money Bill, Financial Bill, a Bill introduced under Article 3 or Article 304 B. require the prior recommendation of the President in the Parliament or in a State Legislature as the case may be.

Q46. In light of recent debates regarding the Muslim Women (Protection of Rights on Marriage) Bill, which of the following statements is/are correct?

1. The Muslim Women (Protection of Rights on Marriage) Bill, 2017 is an ordinary bill under Article 107 of the Constitution of India.

2. The Council of States has the power to reject The Muslim Women (Protection of Rights on Marriage) Bill, 2017, and the consequent deadlock can be resolved by convening a joint sitting of the Houses.

3. The Muslim Women (Protection of Rights on Marriage) Bill, 2017 required the recommendation of President for introduction as it is the primary duty of the Union to protect the fundamental right to equality of women.

4. On the ground of prolonged pendency of the Muslim Women (Protection of Rights on Marriage) Bill, 2017 in the Council of States, it may not be practically possible for the President to convene a joint sitting of the houses under Article 108.

Select the correct answer using the code given below:

A. 2, 3 and 4 only

B. 1, 3 and 4 only

C. 1, 2 and 3 only

D. 1, 2 and 4 only

Ans: D

Expl: This instant bill does not require the recommendation of the President as it is neither a money bill nor a financial bill. The President's recommendation is required only in case of a bill having financial implication under Article 3 and Article 304 B. .

Statement No. 4 is correct as only over a year is left for the completion of the tenure of the 16th Lok Sabha. If joint sitting is to be convened due to prolonged pendency, the constitutionally specified requirement is that the bill shall be pending for 180 parliamentary days in the House where it is pending. As Council of States does not sit for more than 80-85 days a year, it will not be possible to have the condition fulfilled during the current term of House of the People.

Q47. Consider the following statements regarding the representation of States in the Parliament:

1. Delimitation of Constituencies is undertaken on the basis of census exercise to ensure that every State is represented in proportion to its population in both the Houses of Parliament.

2. Delimitation Commission is a constitutional body, the notification of whose orders cannot be challenged in a Court.

3. Territorial constituencies in States, at present, are based on the data of 2001 census, as the Constitution (87th Amendment) Act, 2003 enabled the delimitation exercise on the basis of 2001 Census figures.

4. As it stands today, Constitution of India prohibits any delimitation exercise till 2031.

Which of the statements given above are not correct?

A. 1, 2 and 4 only

B. 2, 3 and 4 only

C. 1, 3 and 4 only

D. 1, 2, 3 and 4

Ans: A

Expl: Delimitation constituencies are NOT applicable to representation of states in Council of States.

Though it is correct to say the Order of delimitation commission, once notified, cannot be challenged in any Court, Delimitation commission is NOT a constitutional body but a statutory body.

The Constitution has prohibited the revision of representation of States in the Lok Sabha till 2026, but not the delimitation of the Lok Sabha and Assembly constituencies.

Q48. Consider the following statements regarding the immunities and privileges of the Parliament and its Members:

1. What is spoken in the Parliament, enjoyed by a Minister is wider than a Member of Parliament.

2. Only a Member of the Parliament and officers of the Houses of Parliament can avail immunity from being questioned in a Court for what is spoken in the Houses of Parliament.

3. Parliamentary Privileges were partially codified under The Constitution (44th Amendment) Act, 1978.

Which of the statements given above is/are not correct?

A. 1, 2 and 3

B. 1 and 3 only

C. 2 and 3 only

D. 1 and 2 only

Ans: C

Expl: A Minister enjoys wider immunity than a Member of Parliament, as he is protected regarding what is spoken in a House of Parliament to which he is not a member.

Attorney General of India is also constitutionally entitled to claim the immunity as regards what is spoken by him in Parliament.

Parliamentary privileges have not been codified so far.

Q49. Members of which of the following services hold office during the pleasure of the President of India?

1. All India Services

2. Defence Services

3. Civil Services of the Union

Select the correct answer using the code given below:

A. 1 and 2 only

B. 1 and 3 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: D

Expl: None

Q50. Consider the following statements regarding the increasing practice of obstructing Parliamentary Proceedings:

1. Rule 374 A of Rules of Procedure of House of the People empowers the Speaker to suspend a member who is wilfully obstructing the proceedings of the House by simply naming him.

2. Under Rule 374 A, the member who is subjected to proceedings will be suspended for such number of days as decided by the Speaker.

3. Rule 256 of General Rules of Procedure of the Council of States empowers the Chairman to suspend a member who is wilfully obstructing the proceedings of the House by simply naming him.

4. Under the Rules of Procedure of Houses of Parliament, each House also has the power to suspend the member(s) who is/are obstructing the proceedings, by passing a motion to that effect.

Which of the statements given above are correct?

A. 1 and 4 only

B. 2 and 3 only

C. 1 and 3 only

D. 2 and 4 only

Ans: A

Expl: Under Rule 374 A, the Speaker of House of the People doesnot have the power to decide the term of suspension, instead the member will be automatically suspended for a period of 5 consecutive sittings.

Under Rule 256, a motion needs to be passed in the Council of States to suspend a member, as there is no parallel to Rule 374 A in the Council of States.

Q51. Which of the following statements should be considered as a challenge to the Indian federal structure?

1. NITI Aayog's Governing Council can address Centre-State issues.

2. According to Art. 1 the territory of India shall comprise of the territories of the States.

3. The Inter-State Council is headed by the Prime Minister.

Select the correct answer using the code given below:

A. 1 only

B. 2 and 3 only

C. 3 only

D. None of the above

Ans: C

Expl: The Governing Council of Niti Aayog has Chief Ministers. It is in line with the concept of cooperative federalism which is an avowed purpose of the Aayog.

Statement 2 is correct but it is not a challenge to Indian federal structure as India is a Union of States in which the States have no right to secede from the Union. So, in fact, this Article has given the Indian federal structure its characteristic feature.

The Inter-State Council had its eleventh meeting almost after a decade in 2016. It was established u/A 263 and promotes cooperative federalism in the country. It gives representation to the States as well.

Q52. Consider the following statements:

1. The B.N. Srikrishna Committee has been tasked with creating a data protection framework for India.

2. Shyam Benegal Committee has recommended that the role of the Central Board of Film Certification (CBFC) should be restricted to certifying films for age-appropriate viewing.

3. Such Committees are part of "other bodies", within the definition of State, provided under Art. 12 of the Constitution.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. 1 and 2 only

D. 1, 2 and 3

Ans: C

Expl: Such non-statutory bodies not enjoying statutory powers are not considered as State.

Ministry of Information and Electronics Technology has constituted the Srikrishna Committee.

The Union Information and Broadcasting Ministry constituted the Committee, headed by the filmmaker Shyam Benegal.

Q53. Which of the following statements is/are correct with respect to life and health?

1. Art. 47 is a directive against consumption of narcotic substances commonly known as "drugs".

2. Although right to physical health is not a statutory right, right to mental health is a statutory right.

3. According to the Supreme Court's interpretation of Art. 21, although injured persons should be extended medical aid to preserve their life but only after complying with the legal formalities.

Select the correct answer using the code given below:

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: B

Expl: Art. 47 has used the word "drugs", hence it is a directive against such substances.

The Parliament has not made any law providing right to physical health.

But the Parliament has recently passed the Mental Healthcare Act declaring mental health care a statutory right.

In Parmananda Katara case, the Supreme Court has held that without waiting for legal formalities, medical aid should be extended to such persons.

Q54. Which of the following statements is/are correct with respect to water and rivers?

1. Water, that is to say, water supplies, irrigation and canals is mentioned in the Concurrent list.

2. The Supreme Court has held that water is a part of the right to life and human rights as enshrined in Article 21.

3. The CAG's performance audit report on 'Rejuvenation of River Ganga (Namami Gange)', which was tabled in the Parliament has praised the Government for its efforts.

Select the correct answer using the code given below:

A. 1 only

B. 1 and 2 only

C. 2 only

D. 2 and 3 only

Ans: B

Expl: Water is in State list item 17.

This statement of the Supreme Court is in the case of Narmada Bachao Andolan, 2000.

Recent report of CAG has in fact criticised the government for the non-utilisation of funds.

Q55. Consider the following statements relating to Triple Talaq:

1. The Parliament is in the process of criminalising the practice of instantaneous and irrevocable divorce i.e., triple talaq.

2. Triple talaq is a practice which is against the Article 44 of the Constitution and so it is unconstitutional and void.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: The courts cannot declare a law violative of any of the DPSPs as unconstitutional and void as Part IV is non-justiciable in nature. The Supreme Court held triple talaq as unconstitutional and void as it violated Article 14. Further, Article 44 is about Uniform Civil Code (UCC) and not about Muslim Personal Law.

Q56. Consider the following statements regarding woman judges of Supreme Court:

1. Justice M Fathima Beevi was the first woman judge of the Supreme Court.

2. Only seven women judges have been appointed so far as a judge of Supreme Court since Independence.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: Justice Indu Malhotra has been recently appointed. She is the 7th woman to become a judge of SC. She is the first woman lawyer to be directly promoted as a judge of SC.

Q57. Consider the following statements:

1. Doctrine of basic features applies only to the Amendment Acts passed after the date of judgment in the Kesavanand Bharati case (24th April 1973).

2. When constitutionality of an Act is challenged in the Court, there is a presumption in favour of the constitutionality of the Act.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: None

Q58. Consider the following statements regarding the recently announced scheme of Electoral Bonds:

1. They are interest-free instruments with a life of 15 days.

2. They will be available for purchase only from any public sector bank.

3. Only a registered political party that has secured at least one percent of the votes polled in the most recent election can receive the Electoral Bond.

Which of the statements given above is/are correct?

A. 1 and 2 only

B. 1 and 3 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: B

Expl: Electoral Bonds are available for purchase only from SBI.

Q59. India follows the spirit of secularism and in this regard, religious instruction is permitted in which of the following types of educational institutions?

1. Institutions wholly maintained by the State.

2. Institutions administered by the State but established under any endowment or trust.

3. Institutions recognized by the State.

4. Institutions receiving aid from the State.

Select the correct answer using the code given below:

A. 1, 3 and 4 only

B. 2, 3 and 4 only

C. 1, 2 and 3 only

D. 1, 2 and 4 only

Ans: B

Expl: Under Article 28, no religious instruction shall be provided in any educational institution wholly maintained out of State funds. However, this provision shall not apply to an educational institution administered by the State but established under any endowment or trust, requiring imparting of religious instruction in such institution. Further, no person attending any educational institution recognised by the State or receiving aid out of State funds shall be required to attend any religious instruction or worship in that institution without this consent. In case of a minor, the consent of his guardian is needed. In 1. religious instruction is completely prohibited while in 2. religious instruction is permitted. In 3. and 4. religious instruction is permitted on a voluntary basis.

Q60. Which of the following feature(s) of the Indian Constitution is/are borrowed from the US Constitution?

1. Preamble of the Constitution.

2. Procedure established by law.

3. Removal of the High Court Judges

Which of the statements given above is/are correct?

A. 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

Ans: C

Expl: From US the following features are borrowed:

• Written Constitution

• Impeachment of the President

• Functions of the President and the Vice-President

• Fundamental Rights

• Supreme Court

• Provision of States

• Independence of Judiciary and judicial review

• Preamble of the Constitution

• Removal of the Supreme Court and High Court Judges

While fundamental duties are borrowed from USSR (Now Russia) Constitution.

Q61. In the context of gravitational waves, consider the following statements:

1. Gravitational waves are electromagnetic radiation predicted by Albert Einstein.

2. Gravitational waves move outward from the source at the speed of light.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: Gravitational waves are travelling ripples in space-time and they arise when heavy objects accelerate and generate disturbances in the gravitational field. These are not electromagnetic radiation, as it interacts very weakly with matter and travel through the universe virtually unimpeded.

Q62. Consider the following statements:

1. A pulsar is a rotating black hole with very strong magnetic field.

2. A neutron star is about 20 km in diameter and has the mass of 1.4 times that of our Sun.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: Pulsars are rotating neutron stars with a strong magnetic field. Pulsars have been seen in the radio, optical, x-ray and gamma ray bands.

Neutron stars are formed when a massive star runs out of fuel and collapses. The very central region of star, the core collapses crushing together every proton and electron into a neutron.

Q63. In the context of the four fundamental forces at work in the universe, consider the following statements:

1. Weak force is responsible for radioactive decay.

2. Gravitational force is not a part of the Standard Model of particle physics.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: 1. In particle physics the weak force is the mechanism of interaction between sub-atomic particles that causes radioactive decay and plays essential role in nuclear fission.

2. The boson or force carrier of gravitational force called gravitation has not yet been proved by scientists in Standard Model of particle physics.

Q64. In the context of computer malware, consider the following statements:

1. A computer worm is a malicious, self replicating software program.

2. A Trojan is a type of malicious computer software disguised within legitimate or beneficial program.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: Computer worm exists as a separate entity or stand alone software. It resides in the active memory and duplicates itself.

Q65. Pulse Polio is an immunization campaign established by the Government of India to eliminate poliomyelitis (polio) in India. In this context, consider the following statements:

1. Humans are the only reservoir/carrier of Polio Virus called Wild Polio Virus.

2. The country has eliminated Type-2 Polio virus few years ago.

3. Every child under three years of age gets Polio drops.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: B

Expl: With the global initiative of eradication of polio in 1988 following World Health Assembly resolution in 1988, Pulse Polio Immunization Programme was launched in India in 1995. Children in the age group of 0-5 years are administered polio drops during National and Sub-national immunization rounds (in high risk areas) every year. Humans are the only reservoir/carrier of Polio Virus called Wild Polio Virus. It has three types 1, 2, 3. It is type 2, which is the first one to get eliminated, followed by type 3 and then type 1 Polio Virus from the human environment. Elimination of type 2 virus generally indicates a good/satisfactory Routine Immunization System/ Coverage in an area. The country has already eliminated Type-2 virus few years ago.

Q66. In the context of biofuels, consider the following statements:

1. The Second Generation Biofuels are based on specially engineered energy crops such as algae as its energy source.

2. The Fourth Generation Biofuels are aimed at not only producing sustainable energy but also a way of capturing and storing carbon dioxide.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: The first generation biofuels are produced directly from food crops by extracting the oils for use in biodiesel (e.g. soyabean) or producing bioethanol through fermentation (e.g. sugarcane).

The Second Generation Biofuels are produced from non food crops such as wood, organic waste, including grasses like Switchgrass, Myscanthus.

The third generation biofuels is based on improvements in the production of biomass by using algae which can be grown using land and water unsuitable for food production and reducing strain on water resources.

The fourth generation biofuels are aimed at not only producing sustainable energy but also a way of capturing and storing CO2. The CO2 is captured at all stages of production which makes biofuel production carbon negative rather than carbon neutral.

Q67. Consider the following statements:

1. An Rh negative person can donate blood to an Rh positive person.

2. A person of 'AB' blood group has anti A and anti B antibodies in his/her blood plasma.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: Blood group is designated on the basis of the presence of antigen on the surface of Red Blood Cells.

Blood Group AB has absence of antiA and antiB antibodies due to presence of A and B antigen which are self antigen.

Q68. In the context of the disease Japanese encephalitis, consider the following statements:

1. It is transmitted to humans through bites from infected mosquitoes of the Aedes species.

2. There is no antiviral treatment for the disease.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: Japanese encephalitis virus is transmitted to humans through bites from infected mosquitoes of Culex Species (mainly Culex tritaeniorhynchus). The virus exists in a transmission cycle between mosquitoes, pigs and water birds. There is no antiviral treatment. Treatment is supportive to relieve symptoms and stabilise the patient.

Q69. Consider the following statements:

1. Recently India has declared itself free from highly pathogenic Asian Influenza H5N8 and H5N1 and notified the same to World Organisation for Animal Health.

2. World Organisation for Animal Health (OIE) is an autonomous intergovernmental organization headquartered in Geneva.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: OIE is headquartered in Paris to fight animal diseases at the global level.

Q70. Which of the following energy crops can be cultivated for ethanol?

A. Jatropha

B. Maize

C. Pongamia

D. Sunflower

Ans: B

Expl: Biodiesel is obtained from oil seeds of Jatropha, Pongamia and Sunflower.

Maize contains starch which is converted into simple sugar and followed by fermentation to obtain bioethanol.

Q71. Which of the following five chemicals were recently banned for fireworks manufacturers by the Supreme Court in India?

A. Antimony, Strontium, Lead, Lithium, Beryllium

B. Strontium, Lead, Arsenic, Lithium, Mercury

C. Mercury, Antimony, Lead, Lithium, Arsenic

D. Antimony, Mercury, Strontium, Lead, Arsenic

Ans: C

Expl: Recently the Supreme Court has banned fireworks manufacturers from using fire substances Lithium, Antimony, Mercury, Arsenic and Lead that stoke air and noise pollution.

Q72. Which of the following functions of the pancreas will not be affected when pancreatic duct of a healthy person is blocked?

A. Neutralisation of chyme

B. Protein digestion

C. Carbohydrate digestion

D. Maintenance of normal blood sugar level

Ans: D

Expl: The endocrine part of pancreas secretes insulin hormone that is discharged directly into the bloodstream. The exocrime part of pancreas secretes enzymes for carbohydrate and protein digestion and also sodium bicarbonate via pancreatic duct.

Q73. Consider the following statements:

1. Riboflavin deficiency can lead to heart failure.

2. Retinol deficiency causes xerophthalmia.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: Vitamin B1 or Thaimine deficiency is called Beri Beri in which there can be enlargement of heart and in severe deficiency even heart failure.

Q74. In the context of 'Eternal Blue', consider the following statements:

1. It deals with the deployment of computer based systems that do things in the physical world.

2. It is an integrated information dissemination system serving the coastal community with advisories and alerts towards their safety at sea.

3. It is a virtual server with an inbuilt security system enabling faster connectivity.

4. It is a hacking tool which gives unprecented access to all computers using Microsoft Windows.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 3 only

C. 2 only

D. 4 only

Ans: D

Expl: Eternal Blue was developed by National Security Agency (NSA), America's powerful military intelligence unit to gain access to computers used by terrorists and enemy states.

Q75. With reference to International Solar Alliance (ISA), consider the following statements:

1. ISA has formally become a full-fledged 'International legal entity' after the first fifteen member countries deposited their instruments of ratification.

2. ISA is the first international intergovernmental treaty based organization headquartered in India.

3. ISA is working for deployment of over 1000 GW of solar energy by the year 2030.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 3 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: D

Expl: As per Article XIII 1., the ISA Framework Agreement shall enter into force on the thirtieth day after the date of deposit of the fifteenth instrument of ratification. As ISA received this ratification on 6th November 2017, 30 days' due period completed on December 6, 2017.

Q76. Consider the following statements about photochemical smog:

1. Photochemical smog occurs in cool humid climate.

2. It has a high concentration of oxidizing agents so is called oxidizing smog.

3. It results from the action of sunlight on nitrogen oxides and volatile organic compounds.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: C

Expl: Photochemical smog is produced when pollutants from the combustion of fossil fuels react with sunlight. When nitrous oxides and volatile organic compounds interact with sunlight secondary pollutants are formed such as ozone and peroxyacetyl nitrate. It occurs in warm dry and sunny climate by action of sunlight. It damages the lung tissues.

Q77. In the context of Supercomputers, consider the following statements:

1. The performance of a supercomputer is measured in TFLOPS (Teraflop per second) on the LINPACK Benchmarks.

2. Tianhe-2 of China has been declared as the world's fastest supercomputer.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: 1. The performance of supercomputer is measured in PFLOPS (petaflop per second i.e. quadrillions of calculations per second) on the LINPACK Benchmarks.

2. Sunway Taihulight of China is the world's fastest supercomputer.

Q78. In the context of Zika Virus Disease, consider the following statements:

1. Zika virus disease may be transmitted between humans perinatally.

2. The virus is named after the Zika forest in Nigeria where it was discovered in 1947 in a rhesus monkey.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: 1. In rare instances Zika Virus Disease can be transmitted perinatally (between mother and infected child), sexually or via blood.

Zika Virus Disease is primarily vector borne disease transmitted to humans by Aedes mosquitoes.

2. Zika forest is in Uganda.

Q79. India's space diplomacy took a giant stride with the successful launch of South Asia Satellite. In this context, consider the following statements:

1. ISRO's GSLV-F09 successfully launched the South Asia Satellite (GSAT-17) from Kourou in French Guiana.

2. It has 12 Ku band transponders to facilitate better communication, tele-education, telemedicine and disaster management support.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: GSAT-9 or the South Asian Satellite, is a geostationary communication satellite launched by ISRO's GSLV-F09 on May 5, 2017 from Satish Dhawan Space Centre, Sriharikota. Seven out of eight SAAR countries are a part of the project with Pakistan deciding to opt out.

Q80. In the context of Intended Nationally Determined Contributions (NDG) submitted by the nations to the United Nations Framework Convention on Climate Change (UNFCC), consider the following statements:

1. China will cut its CO2 emissions per unit of GDP by 60-65 per cent from 2005 level by 2030.

2. India will reduce the emission intensity of its GDP by 33-35 per cent by 2030 from 2005 level.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: China will cut emission intensity by 60-65% from 2005 level by 2030, aiming to increase non fossil fuel sources in primary energy consumption to about 20%. China will also peak its CO2 emissions by 2030.

Q81. In the context of genetic disorders, consider the following: A woman suffers from haemophilia while her husband does not suffer from it. They have a son and a daughter. In this context, which one of the following statements is most probably correct?

A. Both children suffer from haemophilia.

B. Daughter suffers from haemophilia while son does not suffer from it.

C. Both children do not suffer from haemophilia

D. Son suffers from haemophilia while daughter does not suffer from it.

Ans: D

Expl: Woman Husband
Haemophiliac Normal
X^hX^h XY

	X	Y
X^h	XX^h	X^hY
X^h	XX^h	X^hY

All daughters are carrier but do not express symptoms of haemophilia while all sons suffer from haemophilia.

Q82. In the context of Light Fidelity (LiFi) Technology, consider the following statements:

1. LiFi is a bidirectional technology that uses light emitting diode (LED) to transmit data wirelessly.

2. LiFi uses visible light band range between 400 Tera Hertz (THz) and 800 THz of electromagnetic spectrum to transmit data wirelessly.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: LiFi is a fast and cheap optical version of WiFi, the technology based on Visible Light Communication (VLC). It provides data rate greater than one Gbps.

Q83. Which of the following electromagnetic waves carries the maximum energy per photon?

A. X-rays

B. Radiowaves

C. Light waves

D. Microwaves

Ans: A

Expl: The electromagnetic wave with highest frequency carries the maximum energy per photon. In this case, X-ray has the maximum frequency.

Q84. Consider the following statements:

1. Omega-3 fatty acid causes significant lowering of high density lipoprotein.

2. Transfat is prepared by partial hydrogenation of saturated fat.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: 1. Omega-3 fatty acid is a Poly Unsaturated Fatty Acid (PUFA) which increases the level of high density lipoprotein (HDL). HDL reduces the risk of heart attack.

2. Transfat is prepared by partial hydrogenation of unsaturated fat. It increases the level of Low Density Lipoprotein (LDL).

Q85. Consider the following statements:

1. Sickle cell disease can occur only when both parents are carriers of trait genes for the particular condition.

2. People with thalassemia are not able to make enough Red Blood Cells (RBC), which causes severe anaemia.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: Both sickle cell anaemia & thalassemia are genetic blood disorders.

People with thalassemia disease are not able to make enough haemoglobin which causes severe anaemia.

When there is not enough haemoglobin in RBCs, oxygen cannot get to all parts of the body, thereby organs are unable to function properly.

Q86. Consider the following statements:

1. Pituitary is the largest endocrine gland.

2. Oxytocin helps in the formation of milk after the birth of baby.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: 1. Thyroid is the largest endocrine gland.

2. Oxytocin is a milk ejection hormone, while prolactin helps in formation of milk after the birth of baby.

Q87. In the context of the Cassini- Huygens mission that ended recently, consider the following statements:

1. The Mission comprised of NASA's Cassini Probe and Italian Space Agency lander.

2. The Mission objective was to study the planet Jupiter and Saturn.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: The Cassini-Huygens Mission comprised of NASA's Cassini probe and European Space Agency (ESA) lander. The mission was collaboration between NASA, European Space Agency and Italian Space Agency. The objective of mission was to send a probe to study the planet Saturn and its system, including its rings and natural satellites.

Q88. In the context of recently released World Malaria Report 2017 of WHO, consider the following statements:

1. Plasmodium Vivax is the most prevalent malaria parasite in sub Saharan Africa.

2. Kyrgyzstan was certified by WHO as malaria free in 2016.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: 1. Plasmodium falciparum is the most predominant Malaria parasite in sub Sahara Africa

2. Kyrgyzstan and Sri Lanka were certified by WHO as malaria free in 2016.

Q89. Consider the following statements:

1. Greater the humidity in the air, lower will be the speed of sound.

2. The speed of sound in oxygen is greater than hydrogen.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: 1. Density of humid air is less than that of dry air. Speed of sound is inversely proportional to square root of density of gas.

2. Molecular weight is directly proportional to density. It is greater for oxygen.

Q90. At present scientists can determine the arrangement or relative position of genes or DNA sequences on a chromosome. How does this knowledge benefit us?

1. It is possible to know the pedigree of livestock.

2. It is possible to develop disease resistant animal breeds.

3. It is possible to understand the cause of all human disease.

Which of the statements given above is/are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

Ans: B

Expl: DNA sequencing helps us understand the cause of genetic diseases of humans.

Q91. In the context of Negative Emissions considers the following statements:

1. The carbon dioxide reacts with the basaltic bedrock and forms solid minerals creating a permanent storage solution.

2. The world's first negative emission power plant is located in Sweden.

Which of the statements given is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: A

Expl: On October 11, 2017 world's first Negative Emissions power plant started operating in Iceland.

In this Negative Emissions CO2 is captured and sent more than 700 meters underground where it reacts with basaltic bedrock and forms solid minerals for permanent storage.

Q92. Which of the following gastro-intestinal hormones stimulates contraction of gall bladder to release bile?

A. Secretin

B. Enterokinin

C. Cholecystokinin

D. Gastrin

Ans: C

Expl: (a) Secretin stimulates release of sodium bicarbonate from liver and pancreas. (b) Enterokinin stimulates release of intestinal enzymes from small intestine. (c) Cholecystokin stimulates liver to secrete bile and contraction of gall bladder to release bile. (d) Gastrin stimulates stomach to release HCl and enzyme pepsinogen.

Q93. A man is suffering from an abnormally low body temperature, loss of appetite and extreme thirst. Which of the following parts of brain would probably show a tumour during his brain scan?

A. Cerebellum

B. Hypothalamus

C. Medulla oblongata

D. Pons

Ans: B

Expl: (a) Cerebellum maintains balance & posture of the body. It coordinates voluntary movements of the body. (b) Hypothalamus is a link between nervous system and endocrine system of the body; it regulates temperature thirst, hunger & sleep of the body. (c & d) Medulla & Pons together regulate breathing and heart rate.

Q94. Consider the following kinds of organisms:

1. Bats

2. Bees

3. Birds

Which of the above is/are pollinating agent/agents?

A. 2 only

B. 1 and 2 only

C. 1 and 3 only

D. 1, 2 and 3

Ans: D

Expl: 1. Chiropterophily means pollination of plants by bats. E.g. Anthocephalus, 2. Pollination by bees or insect is called Entomophily. E.g. Sunflower, 3. Pollination by birds is called Ornithophily. E.g. Butea.

Q95. In the context of biomedical applications of nanoparticles, consider the following statements:

1. Zinc oxide is widely used as a therapeutic agent in antibacterial and antifungal substances.

2. The use of silver nanoparticles in sunscreens is due to its stability and inherent capability to absorb UV radiation.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: D

Expl: 1. Zinc oxide is a wide band gap semiconductor so is widely used to absorb UV radiation in Sunscreen.

2. Silver nanoparticles and antifungal effect including against antibiotic resistant bacteria strains.

Q96. Which of the following is NOT an invasive alien species in the Indian context?

A. Lantana

B. Cynodon

C. Parthenium

D. Eichhornia

Ans: B

Expl: Cynodon is a plant in the grass family. It is native to warm temperate and to tropical regions of the world. It is commonly called Bermuda grass. It is not an invasive species. An invasive species is not native to a specific location or an introduced species that inhibits the growth of native species.

Q97. In the context of 90-90-90 target of UNAIDS consider the following statements:

1. By 2020, 90% of all people living with HIV will know their HIV status.

2. By 2020, 90% of all people diagnosed with HIV infection will receive sustained antiretroviral therapy.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: C

Expl: The VNAIDS has set a 90-90-90 target to end HIV-AIDS epidemic by 2030, for which by 2020, 90% of all people receiving antiretroviral therapy will have viral suppression.

Q98. In the context of India's Ballistic Missile Defense (BMD) system consider the following statements:

1. Advance Air Defense (AAD) is exo-atmospheric interception system.

2. Prithvi Air Defense (PAD) can intercept missiles at altitudes between 50-80km.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: India seeks to deploy a functional iron dome BMD incorporating both low attitude and high attitude interceptor missiles. The two tiers of India's BMD are (PAD) Prithvi Defense & Advance Air Defense respectively (AAD)

PAD is designed for high attitude interception or exo-atmospheric interception. It can intercept missiles at altitudes between 50-80km. AAD is endo-atmospheric interception system or for low altitude up to 30km.

Q99. The power of a converging lens is 4.5D and that of a diverging lens is 3D. When these two lenses are placed in contact with each other, the power of their combination will be:

A. + 1.5 D

B. + 7.5 D

C. – 7.5 D

D. – 1.5 D

Ans: A

Expl: Power of converging (P1) / convex lens = +4.5 D

(P2) Power of diverging /concave lens = - 3D

P Combined = P1 + P2 = 4.5-3 = + 1.5 D

The power of a convex lens is positive as a convex lens has a positive focal length. While the power of a concave lens is negative as concave lens has a negative focal length.

Q100. Consider the following statements with regard to a matter where paternity of a child is an issue and DNA testing is used to ascertain biological father and mother.

1. Mitochondrial inheritance can be used to trace the biological father and mother of a child.

2. The 'Y' chromosome inheritance is used to identify the biological father of a male.

Which of the statements given above is/are correct?

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

Ans: B

Expl: Mitochondrial inheritance is used to trace only the biological mother of a child the ovum of mother carries mitochondrial genes from mother to child.