

### CURRENT AFFAIRS QUIZ

**Q.1) With reference to Emergency Credit Line Guarantee Scheme, which of the statements given below is incorrect?**

- a) It provides loans to micro, small and medium enterprises (MSMEs) only.
- b) It was rolled out as part of the Centre's Aatmanirbhar package in response to the COVID-19 crisis.
- c) It has a corpus of ₹41,600 crore and provides fully guaranteed additional funding of up to ₹3 lakh crore.
- d) None

**Q.1) Solution (a)**

The Centre has expanded its credit guarantee scheme for micro, small and medium enterprises (MSMEs) to cover loans given to larger firms, as well as to self-employed people and professionals who have taken loans for business purposes.

The Emergency Credit Line Guarantee Scheme was rolled out in May as part of the Centre's Aatmanirbhar package in response to the COVID-19 crisis.

It has a corpus of ₹41,600 crore and provides fully guaranteed additional funding of up to ₹3 lakh crore.

Source: <https://www.thehindu.com/business/Economy/credit-guarantee-extended-to-larger-firms-self-employed/article32249835.ece>

**Q.2) Which of the following statements about Bal Gangadhar Tilak is/are correct?**

- 1. He founded the Fergusson College in Pune.
- 2. He was part of the extremist faction of Indian National Congress.
- 3. He was associated with the Hindu Mahasabha.

**Select the correct answer using code below**

- a) 1 and 2
- b) 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

**Q.2) Solution (a)**

Bal Gangadhar Tilak

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- He was commonly known as Lokamanya Tilak.
- He was one of the founders of the Fergusson College in Pune.
- He was part of the extremist faction of the INC and was a proponent of boycott and Swadeshi movements. Along with Bipin Chandra Pal and Lala Lajpat Rai, he was called the 'Lal-Bal-Pal' trio of extremist leaders.
- He was also called the 'Father of Indian Unrest'.
- Lala Lajpat Rai was involved with the Hindu Mahasabha.

Note: August 1, 2020 marks 100 years of Bal Gangadhar Tilak's death anniversary.

### Q.3) Which among the following is/are correct with regard to Khurja pottery?

1. It is traditional Indian pottery work manufactured in Uttar Pradesh state.
2. It has been protected under the Geographical indication (GI) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement.

Choose correct answer:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.3) Solution (c)

Khurja pottery is traditional Indian pottery work manufactured in Khurja of the Bulandshahr district in Uttar Pradesh state, India.

Khurja pottery has been protected under the Geographical indication (GI) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement.

Article reference: <https://www.thehindu.com/news/national/pandemic-breaks-ceramics-citys-traditional-business-model/article32248942.ece>

### Q.4) Recently which among the following Arab countries announced the launch of its first nuclear plant, called Barakah nuclear power plant –

- a) Qatar
- b) UAE
- c) Yemen
- d) Iraq

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### Q.4) Solution (b)

The oil-rich United Arab Emirates announced the start-up of its Barakah nuclear power plant, scoring another first for the Arab world.

Barakah, which means “blessing” in Arabic, is a regional first. Barakah was built by a consortium led by the Korea Electric Power Corporation at a cost of some \$24.4 billion.

Source: <https://www.thehindu.com/news/international/arab-worlds-first-nuclear-plant-achieves-criticality/article32249753.ece>

### Q.5) Which of the following statements is/are correct with regard to Dhole?

1. They are endemic to India.
2. Besides the tiger, it is the only large carnivore in India that is under the IUCN's 'endangered' category.
3. Karnataka, Maharashtra and Madhya Pradesh rank high in the conservation of the endangered dhole in India.

Choose correct answer:

- a) 1 only
- b) 3 only
- c) 2 and 3
- d) 1, 2 and 3

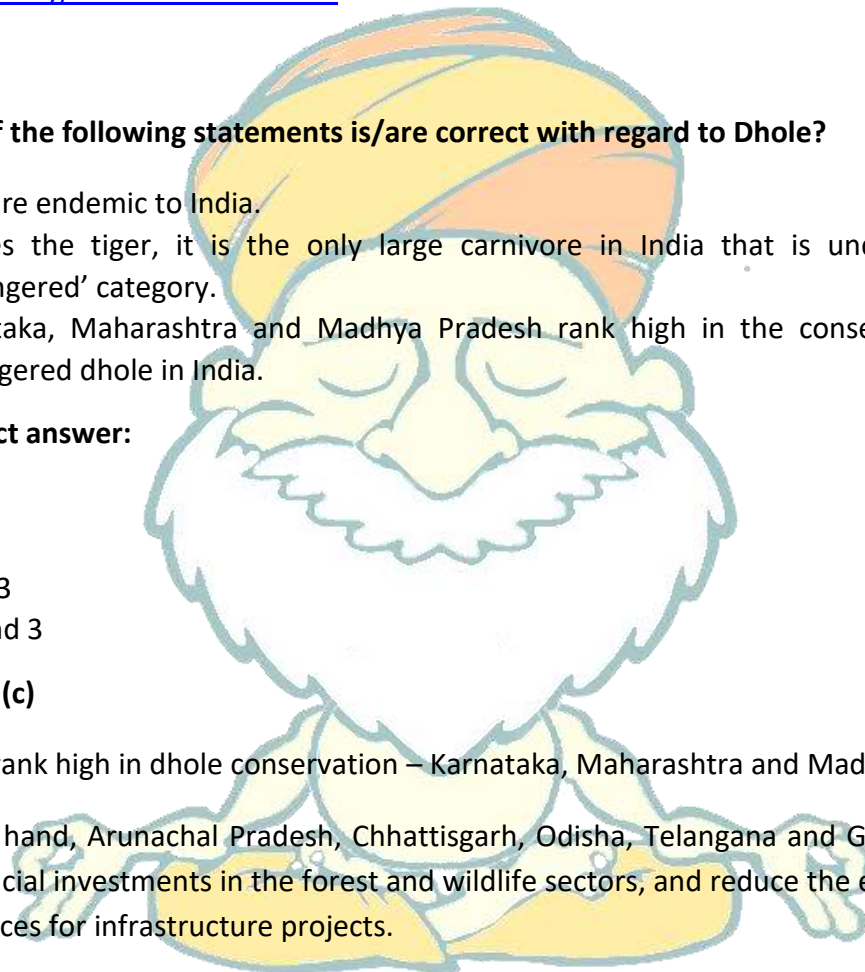
### Q.5) Solution (c)

Three States rank high in dhole conservation – Karnataka, Maharashtra and Madhya Pradesh

On the other hand, Arunachal Pradesh, Chhattisgarh, Odisha, Telangana and Goa will need to increase financial investments in the forest and wildlife sectors, and reduce the ease of granting forest clearances for infrastructure projects.

Dholes play an important role as apex predators in forest ecosystems. Besides the tiger, the dhole is the only large carnivore in India that is under the International Union for Conservation of Nature's 'endangered' category.

Source: <https://www.thehindu.com/news/national/three-states-rank-high-in-the-conservation-of-the-endangered-dhole/article32250471.ece>



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**Q.6) 'The Arctic Home in the Vedas' is a history book on the origin of Aryan People, written by**

- a) Lal Bahadur Shastri
- b) Bal Gangadhar Tilak
- c) Motilal Nehru
- d) Subhash Chandra Bose

**Q.6) Solution (b)**

The Arctic Home in the Vedas is a history book on the origin of Aryan People by Bal Gangadhar Tilak, a mathematician turned astronomer, historian, journalist, philosopher and political leader of India.

It propounded the theory that the North Pole was the original home of Aryans during the pre-glacial period which they had to leave due to the ice deluge around 8000 B.C. and had to migrate to the Northern parts of Europe and Asia in search of lands for new settlements. In support to his theory, Tilak presented certain Vedic hymns, Avestic passages, Vedic chronology and Vedic calendars with interpretations of the contents in detail.

The book was written at the end of 1898, but was first published in March 1903 in Pune.

**Q.7) Boko Haram, an extremist group often in news is based in?**

- a) Iraq
- b) Nigeria
- c) Lebanon
- d) Syria

**Q.7) Solution (b)**

Boko Haram is an Islamic extremist group based in northeastern Nigeria, also active in Chad, Niger and northern Cameroon.

Source: <https://www.thehindu.com/news/international/15-killed-in-cameroon-boko-haram-attack/article32254546.ece>

**Q.8) Recently, Polonnaruwa district was in news. Which of the statements given below is/are true with regard to it?**

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1. The district is known internationally for its evocative rock-cut Buddha sculptures and ancient city.
2. It is a UNESCO World Heritage Site.
3. It is called Sri Lanka's rice hub.

**Choose correct answer:**

- a) 1 only
- b) 1 and 2
- c) 1, 2 and 3
- d) None

**Q.8) Solution (c)**

Polonnaruwa district is known internationally for its evocative rock-cut Buddha sculptures and ancient city — now a UNESCO World Heritage Site — that one strand of popular history traces to the Cholas. It is also the country's rice bowl, with the district's farmers producing the highest amount — 3 lakh metric tonnes last year — of paddy in the country.

Source: <https://www.thehindu.com/news/international/in-sri-lankas-rice-hub-a-tale-of-rural-neglect-and-mounting-debt/article32254703.ece>

**Q.9) Consider the following statements about Electronic Vaccine Intelligence Network (eVIN):**

1. It is an innovative technological solution aimed at strengthening immunization supply chain systems across the country.
2. This is being implemented under National Health Mission by Ministry of Health and Family Welfare.

**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

**Q.9) Solution (d)**

eVIN is an innovative technological solution aimed at strengthening immunization supply chain systems across the country.

This is being implemented under National Health Mission by Ministry of Health and Family Welfare.

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It aims to provide real-time information on vaccine stocks and flows, and storage temperatures across all cold chain points in the country.

This system has been used with the requisite customization during the COVID pandemic for ensuring continuation of the essential immunization services and protecting the children and pregnant mothers against vaccine preventable diseases.

Source: <https://pib.gov.in/PressReleaseframePage.aspx?PRID=1643172>

**Q.10) The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters is also known as**

- a) Aarhus Convention
- b) Marpol Convention
- c) London Convention
- d) OSPAR Convention

**Q.10) Solution (a)**

Formal name of the Aarhus Convention is UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. It was signed in 1998 in the Danish city of Aarhus and entered into force in 2001. It is ratified by 41 countries which include the EU members and Central Asian Countries.

The most notable feature enshrined in EU legislations based upon this treaty is Water Framework Directive.

Aarhus Convention grants the public rights regarding access to information, public participation and access to justice, in governmental decision-making processes on matters concerning the local, national and Transboundary environment.

Article reference: <https://www.thehindu.com/sci-tech/energy-and-environment/the-hindu-explains-what-are-the-key-changes-in-the-environment-impact-assessment-notification-2020/article32249807.ece>

**Q.11) Consider the following:**

1. It is a pearl shaped 'mountain lake' that lies on the Ladakhi part of the Changthang plateau.

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- It is considered to be 'a sacred gift to a living planet.'
- It is encircled by mountains and said to be the 'Jewel of the Rupshu Valley' is at an altitude of 14,836 ft.

**The above characteristics are associated with which of the following lake?**

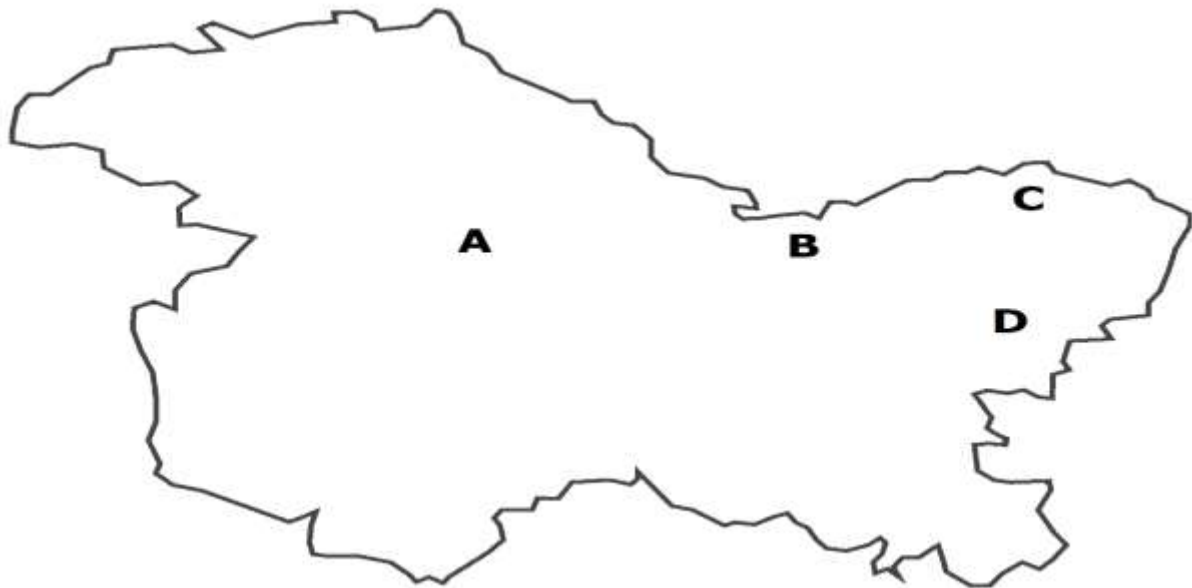
- Tso Morari
- Pangong Tso
- Wular
- Depsang

**Q.11) Solution (a)**

The Tso Morari, a pearl shaped 'mountain lake' that lies on the Ladakhi part of the Changthang plateau is considered to be 'a sacred gift to a living planet.'

Encircled by mountains rising over 20,000ft., this 'Jewel of the Rupshu Valley' is at an altitude of 14,836 ft. Changpas, the nomadic community of shepherds inhabit this part of the valley raising Yak, Sheep, goats and horses of Tibetan origin.

**Q.12) Consider the below map and identify the correct locations from the options given below:**



**Choose correct answer:**

**A – B – C – D**

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- a) Deosai plains – Depsang plains – Lingi Tang plains – Soda plains
- b) Deosai plains – Depsang plains – Soda plains – Lingi Tang plains
- c) Soda plains – Depsang plains – Lingi Tang plains – Deosai plains
- d) Deosai plains – Lingi Tang plains – Soda plains – Depsang plains

### Q.12) Solution (b)

Observe the figure below



### Q.13) Consider the following:

1. This State occupies a unique position in the tribal map of India.
2. It is home to 62 different tribal communities including 13 particularly vulnerable tribal groups (PVTGs)
3. Tribes in this State speaks around 21 languages and 74 dialects.



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The above unique characteristics corresponds to which of the below State?

- a) Jharkhand
- b) Chhattisgarh
- c) Odisha
- d) Telangana

### Q.13) Solution (c)

Odisha's unique position

Odisha occupies a unique position in the tribal map of India.

Odisha has most diverse tribal communities. It is home to 62 different tribal communities including 13 particularly vulnerable tribal groups (PVTGs).

Tribes in Odisha speak around 21 languages and 74 dialects.

Source: <https://www.thehindu.com/news/national/other-states/imparting-education-to-tribals-in-their-languages-wont-be-hard/article32263356.ece>

Q.14) Consider the following pairs:

(Militant group) : : (Country of origin)

- 1. Boko Haram : : Nigeria
- 2. Hezbollah : : Syria
- 3. Hamas : : Lebanon

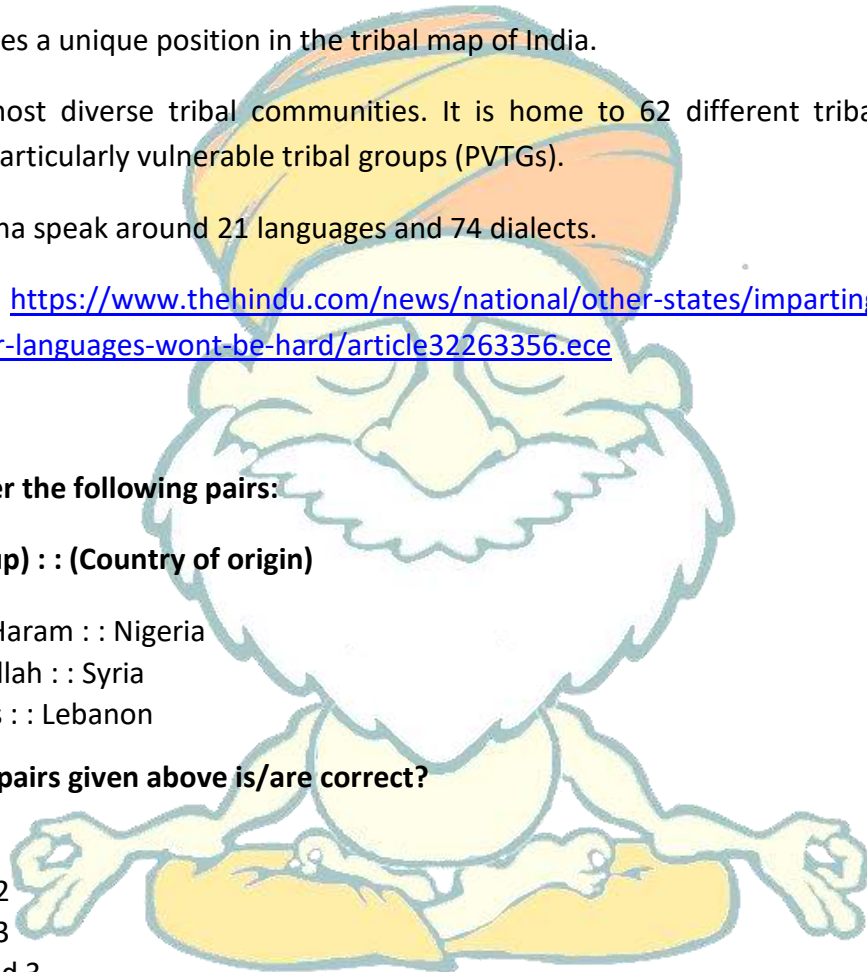
Which of the pairs given above is/are correct?

- a) 1 only
- b) 1 and 2
- c) 1 and 3
- d) 1, 2 and 3

### Q.14) Solution (a)

Correct pairs:

- Boko Haram : : Nigeria
- Hezbollah : : Lebanon
- Hamas : : Palestine



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**Q.15) Which of the following statements is/are correct regarding the 'Khelo India' program?**

1. It aims at providing an annual scholarship of ₹ 500,000 each for eight years to 1,000 selected athletes.
2. This scheme is applicable only to the sports persons who have qualified for Olympics.
3. It will promote 20 universities as the hub of sports excellence.

**Select the code from below:**

- a) 1 only
- b) 1 and 2
- c) 1 and 3
- d) 1, 2 and 3

**Q.15) Solution (c)**

Khelo India Scheme aims at providing an annual scholarship of ₹ 500,000 each for eight years to 1,000 selected athletes.

The government also promised to promote 20 universities across India as hubs for sporting excellence.

The revamped Khelo India programme would impact the entire sports ecosystem, including infrastructure, community sports, talent identification, coaching for excellence, competition structure and sports economy.

Until now, sports schemes were focused on building infrastructure such as stadiums. However, the new scheme will focus on nurturing talent and connecting rural India to global games.

Companies could also fund the Khelo India scheme under corporate social responsibility.

Recently, 8 states were identified where Khelo India State Centre of Excellence (KISCE) will be set up.

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=1643379>

**Q. 16) The Programme for International Student Assessment (PISA) is conducted by –**

- a) Etudes Sans Frontières International (ESFI)
- b) United Nations Organization for Education, Science and Culture (UNESCO)
- c) World Economic Forum (WEF)
- d) Organisation for Economic Co-operation and Development (OECD)

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### Q.16) Solution (d)

Programme for International Student Assessment (PISA)

- It is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) in member and non-member nations intended to evaluate educational systems by measuring 15-year-old school pupils' scholastic performance on mathematics, science, and reading.
- It was first performed in 2000 and then repeated every three years.
- Its aim is to provide comparable data with a view to enabling countries to improve their education policies and outcomes. It measures problem solving and cognition in daily life.

Article reference: <https://www.thehindu.com/news/international/covid-19-pandemic-created-largest-disruption-of-education-in-history-un/article32265660.ece>

### Q. 17) PART XVII of the Constitution deals with –

- a) Articles related to Public Services
- b) Articles related to Special Provisions for certain classes
- c) Articles related to Elections
- d) Articles related to Official Language

### Q.17) Solution (d)

Part XVII of the Constitution deals with the official language in Articles 343 to 351. Its provisions are divided into four heads—Language of the Union, Regional languages, Language of the judiciary and texts of laws and Special directives.

### Q.18) Which of the following statements is/are correct regarding Small Farmers Agribusiness Consortium (SFAC)?

1. It is a new department under Ministry of Agriculture for cooperation and Farmer's welfare
2. It is registered as Non – Banking Financial Institution by Reserve Bank of India.

Select the correct code from below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

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### Q.18) Solution (b)

Small Farmers' Agribusiness Consortium (SFAC)

- SFAC was established in 1994 under Societies Registration Act, 1860 as an autonomous body promoted by the Ministry of Agriculture & Farmers' Welfare.
- The Society is also registered as Non-Banking Financial Institution by Reserve Bank of India.
- The Society is governed by Board of Management which is chaired, ex-officio, by Hon'ble Union Minister for Agriculture and Farmers Welfare as the President and the Secretary, Department of Agriculture, Cooperation and Farmers Welfare, Government of India, is the ex-officio Vice-President.
- SFAC is implementing the central schemes of Government of India namely VCA, EGCGS for economic inclusion of small and marginal farmers in agribusiness activities.

### Q.19) Consider the following statements:

1. Cess is a form of tax charged/levied over and above the base tax liability of a taxpayer.
2. Every taxpayer, who has to pay the income tax, is liable to pay a cess at the rate of 4%.

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

### Q.19) Solution (c)

Cess is a variant of tax charged over the basic tax liability of a taxpayer. A cess is imposed when the government looks to raise funds for specific purposes. Cess is not the same as any other tax collected by the government such as income tax, goods and services tax, and excise duty.

Every taxpayer, who has to pay the income tax, is liable to pay a cess at the rate of 4%.

'Health and Education Cess' at 4% on tax (including surcharge) was introduced in Budget 2018.

**Q.20) With reference to National Cooperative Development Corporation (NCDC), consider the following statements:**

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1. NCDC is a statutory Corporation set up under National Cooperative Development Corporation Act, 2020.
2. NCDC is a major financial institution for cooperatives, and has recently started Mission Sahakar 22, which aims to double farmers' income by 2022.

**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

**Q.20) Solution (b)**

National Cooperative Development Corporation (NCDC)

- NCDC is a statutory corporation set up under National Cooperative Development Corporation Act, 1962.
- The objectives of NCDC are planning and promoting programmes for production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, livestock and certain other notified commodities and services on cooperative principles.
- NCDC functions through its Head Office at New Delhi and multiple Regional Offices.
- The NCDC has the unique distinction of being the sole statutory organization functioning as an apex financial and developmental institution exclusively devoted to cooperative sector.
- NCDC is a major financial institution for cooperatives, and has recently started Mission Sahakar 22, which aims to double farmers' income by 2022.

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=1643349>

**Q.21) Pokkali variety of rice was recently in news. Which of the statements given below is/are correct with regard to it?**

1. It is grown extensively in large tracts of Sunderbans.
2. It has received a GI tag for its unique saline tolerant ability.

**Choose correct answer:**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

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### Q.21) Solution (b)

Pokkali Rice

The pokkali variety is known for its saltwater resistance and ability to flourish in the paddy fields of coastal districts of Kerala.

The uniqueness of the rice has brought it the Geographical Indication (GI) tag and is the subject of continuing research.

Now, Sundarbans farmers are planning to use pokkali seeds as about 80% of the rice paddies in the Sundarbans faced the problem of saltwater incursion.

If Pokkali rice seedlings succeed, it would be a good step to turn around the fortunes of the farmers.

Source: <https://www.thehindu.com/news/national/other-states/pokkali-rice-seedlings-travel-from-kerala-to-the-sunderbans/article32278833.ece>

**Q.22) Which among the following officer was regarded by Dr B R Ambedkar as the most important Officer under the Constitution of India during Constituent Assembly Debates?**

- a) Comptroller and Auditor General
- b) Attorney General
- c) Special Officer for Linguistic Minorities
- d) Finance Commissioner

### Q.22) Solution (a)

Comptroller and Auditor General of India is the head of the Indian Audit and Accounts Department. He is the guardian of the public purse and controls the entire financial system of the country at both the levels—the Centre and the state. His duty is to uphold the Constitution of India and laws of Parliament in the field of financial administration.

This is the reason why Dr B R Ambedkar said that the CAG shall be the most important Officer under the Constitution of India.

Article reference: <https://www.thehindu.com/news/national/gc-murmu-appointed-comptroller-and-auditor-general-of-india/article32289014.ece>

**Q.23) Consider the following pairs:**

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**(Reports/Indices) : : (Prepared by)**

1. Global Gender Gap Report : : WB
2. Global Social Mobility Index : : UNESCO
3. Inclusive Development Index : : UNDP
4. Global Competitiveness Report : : WEF

**Which of the above pairs is/are correct?**

- a) 1 and 2
- b) 4 only
- c) 3 and 4
- d) 2, 3 and 4

**Q.23) Solution (b)**

All the given indices are prepared by World Economic Forum (WEF)

Reports or Indices prepared by World Economic Forum –

- Global Gender Gap Report
- Global Social Mobility Index
- Inclusive Development Index
- Global Competitiveness Report
- Travel and Tourism Competitiveness Report
- Global Energy Transition Report
- Global Risks Report
- Future of Jobs Report

**Q.24) Department for Promotion of Industry and Internal Trade (DPIIT) is responsible for Intellectual Property Rights (IPR) relating to**

1. Geographical Indication of goods
2. Copyrights
3. Semiconductor integrated circuits' layout design

**Select the correct code:**

- a) 1 and 2
- b) 2 only
- c) 2 and 3
- d) 1, 2 and 3



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### Q.24) Solution (d)

Department for Promotion of Industry and Internal Trade (DPIIT) is responsible for Intellectual Property Rights relating to Patents, Designs, Trade Marks, Geographical Indication of Goods, Copyrights and Semiconductor Integrated Circuits Layout Design and oversees the initiative relating to their promotion and protection.

These include the outlining of policy and its implementation through the Office of the Controller General of Patents, Designs and Trade Marks.

It promotes awareness regarding protection of the Intellectual Property Rights inherent in industrial property in conjunction with the World Intellectual Property Organisation (WIPO) and apex industry organisations apart from similar initiatives involving regional industry associations.

It also provides inputs on various issues relating to the Agreement on Trade Related Aspects of Intellectual Properties (TRIPS) related to World Trade Organisation (WTO) in these fields.

### Q.25) Indra Sawhney case, 1992 is related to

- a) Reservation
- b) Right to Privacy
- c) Hate Speech
- d) Contempt of Court

### Q.25) Solution (a)

Indra Sawhney Case 1992

The 27% reservation quota for backward classes and the government notification reserving 10% government jobs for economically backward classes among the higher castes was challenged in the Supreme Court in the Indra Sawhney Case of 1992.

On 16 November 1992 the Supreme Court upheld the Mandal Commission's 27 percent quota for backward classes, as well as the principle that the combined scheduled-caste, scheduled-tribe, and backward-class beneficiaries should not exceed 50 percent of India's population.

### Q.26) Consider the following statements with reference to Pangolins:

1. It is the only scaly mammal on the planet.



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2. It is the most illegally traded vertebrate within its class (Mammalia).
3. They have no teeth; they chew with gravel and keratinous spines inside the stomach.

**Which of the statements given above is/are correct?**

- a) 1 and 2
- b) 2 only
- c) 2 only
- d) 1, 2 and 3

### **Q.26) Solution (d)**

About Pangolins

- Pangolin is only scaly mammal on the planet.
- According to CITES, it is also the most illegally traded vertebrate within its class (Mammalia).
- According to the latest report released by TRAFFIC in March 2018, Pangolin is the most trafficked mammal in the world.
- Pangolins has large, overlapping scales on its body which act as armour.
- It can also curl itself into ball as self-defence against predators.
- The colour of its scales varies depending on colour of earth in its surroundings.
- Pangolins is an insectivore, feeding on ants and termites, digging them out of mounds and logs using its long claws.
- They have no teeth; they chew with gravel and keratinous spines inside the stomach.
- It is nocturnal and rests in deep burrows during the day.

Do you know?

Of the eight species of pangolin worldwide, two are found in India. They are Chinese pangolin (*manis pentadactyla*), mostly found in northeast India and Indian pangolin (*Manis crassicaudata*).

Source: <https://timesofindia.indiatimes.com/city/hyderabad/pangolin-poaching-racket-busted-in-telangana/articleshow/77333759.cms>

**Q.27) Cyclones, hurricanes and typhoons, may have different names, but cyclones, hurricanes and typhoons are all violent tropical storms that can generate 10 times as much energy as the Hiroshima atomic bomb. Which one of the following most appropriately differentiates the three?**

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- Names of storms according to their rising strength
- Names of storms in the South Pacific-Indian Ocean, the Atlantic-northeast Pacific and Asia respectively
- Names of storms according to their shape
- Name of storms according to frequency of occurrence

### Q.27) Solution (b)

Cyclone is the term used for a low-pressure system that strikes the South Pacific and Indian Ocean. The same type of disturbance in the Atlantic and northeast Pacific is called a hurricane while typhoon is the term used in Asia.

Meteorologists use the term "tropical cyclone" when talking generally about these immensely powerful natural phenomena, which are divided into five categories according to the maximum sustained wind force and the scale of the potential damage they can inflict.

### Q.28) Consider the following pairs:

**(Body/Department) : : (Associated Ministry)**

- FSSAI : : Ministry of Health & Family Welfare
- CSIR : : Ministry of Science & Technology
- TRIFED : : Ministry of Rural Development
- Department of Atomic Energy : : Ministry of Science & Technology

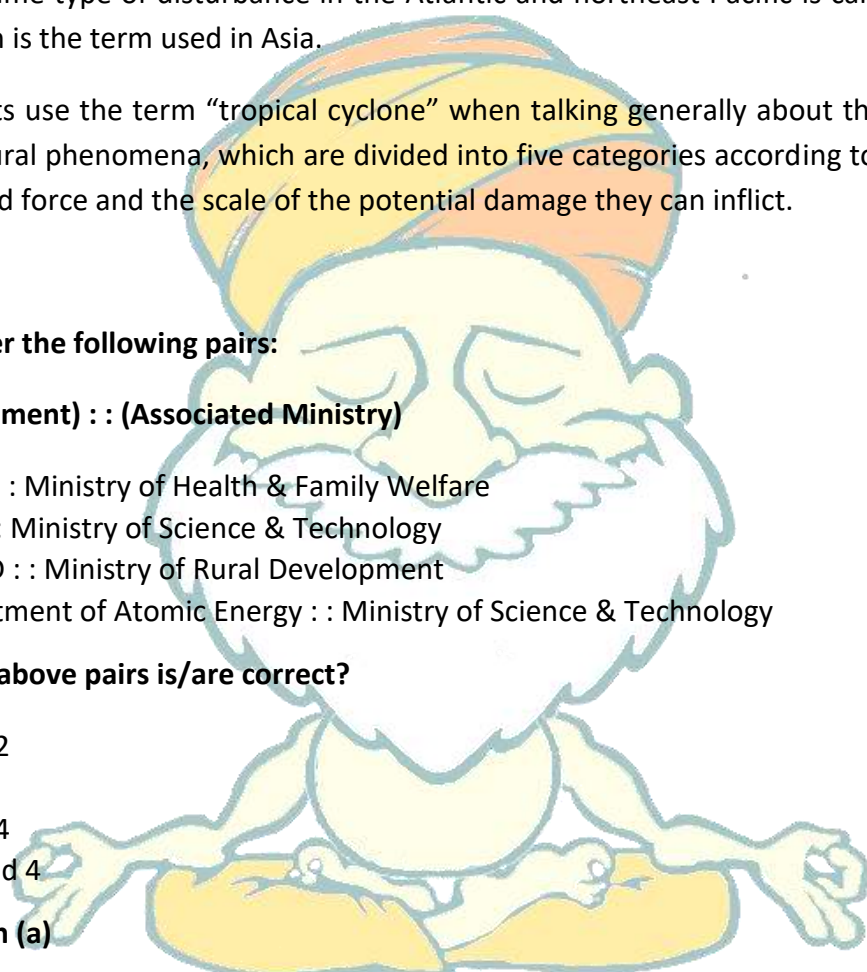
**Which of the above pairs is/are correct?**

- 1 and 2
- 4 only
- 3 and 4
- 2, 3 and 4

### Q.28) Solution (a)

Correct pairs:

- FSSAI : : Ministry of Health & Family Welfare
- CSIR : : Ministry of Science & Technology
- TRIFED : : Ministry of Tribal Affairs
- Department of Atomic Energy : : Direct Prime Minister's Office



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**Q.29) Consider the following statements with reference to Mullaperiyar Dam**

1. It is situated at the confluence of Mullayar and Periyar rivers.
2. It is located entirely in Kerala.
3. The dam is operated by Tamil Nadu state only for irrigation purpose.

**Which of the statements given above are correct?**

- a) 1 and 2
- b) 1 and 3
- c) 2 and 3
- d) 1, 2 and 3

**Q.29) Solution (a)**

Mullaperiyar Dam is situated at the confluence of the Mullayar and Periyar rivers. It is located entirely in Kerala.

The dam is operated by the Tamil Nadu government for irrigation and power generation.

In 1886, a lease was made between the Maharaja of Travancore {a Princely state} and Secretary of State for India {Lord Kimberley} for Periyar Irrigation works. This lease was for 999 years and it granted full right to make and carry out any construction on the leased land to Secretary of State for India.

As per the lease, Mullaperiyar Dam was constructed during 1887-1895 across Periyar River in the then Travancore state (now Kerala) territory. The Dam provides for diversion of water from the reservoir through a tunnel to Vaigai basin in Tamil Nadu for irrigation benefits.

By another agreement in 1970, Tamil Nadu was permitted to generate power also.

Article reference: <https://www.thehindu.com/news/national/kerala/bring-down-mullaperiyar-level-kerala-urges-tn/article32306271.ece>

**Q.30) Consider the following statements about The Global Snow Leopard and Ecosystem Protection Program (GSLEP)**

1. It is world's first joint initiative that aims to conserve the snow leopard.
2. All 12 snow leopard range countries are a part of this initiative.
3. The initiative aims to secure at least 20 snow leopard landscapes by 2020.

**Which of the statements given above are correct?**

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- a) 1 and 2
- b) 1 and 3
- c) 2 and 3
- d) 1, 2 and 3

### Q.30) Solution (d)

The Global Snow Leopard and Ecosystem Protection Program (GSLEP) is the world's first joint initiative that aims to conserve the endangered snow leopard within the broader context of also conserving valuable high mountain ecosystems.

GSLEP unites all 12 range country governments, nongovernmental and inter-governmental organisations, local communities, and the private sector around this aim.

The snow leopard range countries agree, with support from interested organizations, to work together to identify and secure at least 20 snow leopard landscapes across the cat's range by 2020 or, in shorthand – "Secure 20 by 2020."

### STATIC QUIZ

#### Q.1) Consider the following statements regarding Geostationary Orbit:

1. Satellites in Geostationary Orbit circle Earth from East to West.
2. Telecommunication Satellites are generally placed in Geostationary Orbit.

Which of the statements given above is/are **NOT CORRECT**?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

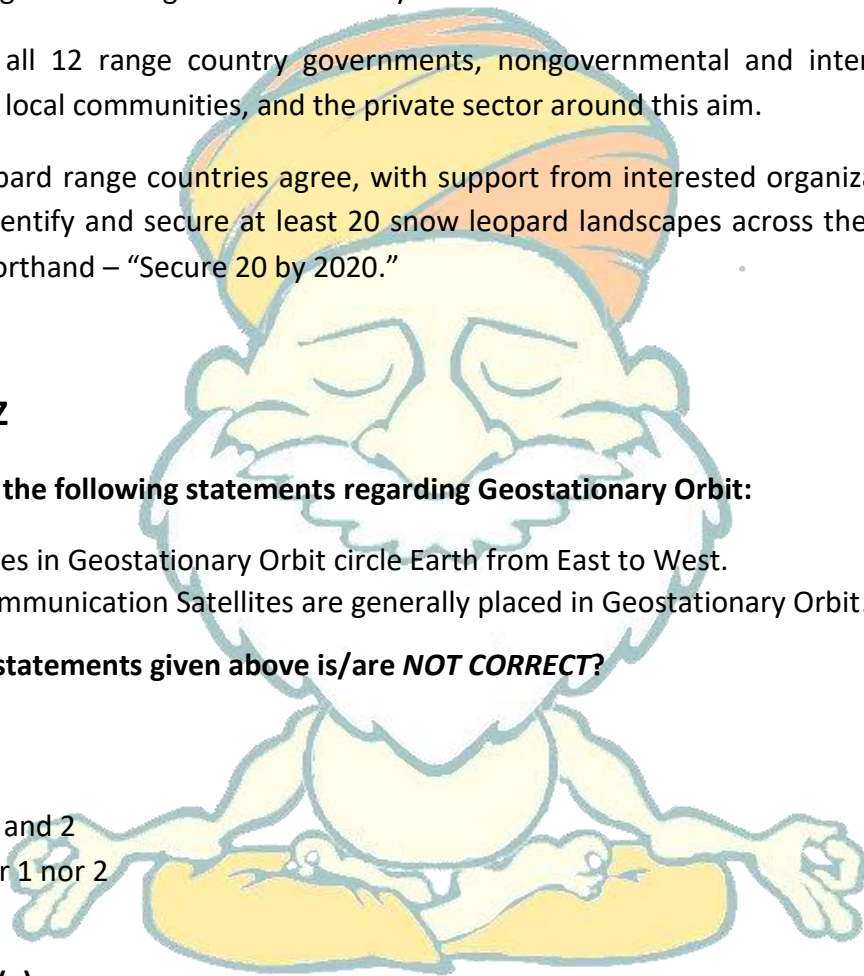
#### Q.1) Solution (a)

Satellites in Geostationary Orbit circle Earth from West to East following Earth's rotation.

**Hence Statement 1 is incorrect.**

Geostationary Orbit is used by satellites that need to stay constantly above one particular place over Earth, such as telecommunication satellites.

**Hence Statement 2 is correct.**



### Q.2) Consider the following statements Geosynchronous Orbit:

1. A spacecraft in Geosynchronous Orbit appears to remain above Earth at a constant longitude.
2. Geosynchronous Orbit can be considered as a specific case of Geostationary Orbit.

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

### Q.2) Solution (a)

A spacecraft in Geosynchronous Orbit appears to remain above Earth at a constant longitude.

Hence Statement 1 is correct.

Geostationary orbit can be considered as a specific case of Geosynchronous Orbit. Geostationary orbit (GEO) is an orbit above Earth's equator, whereas Geosynchronous Orbit is any orbit with a period equal to Earth's rotation period.

Hence Statement 2 is incorrect.

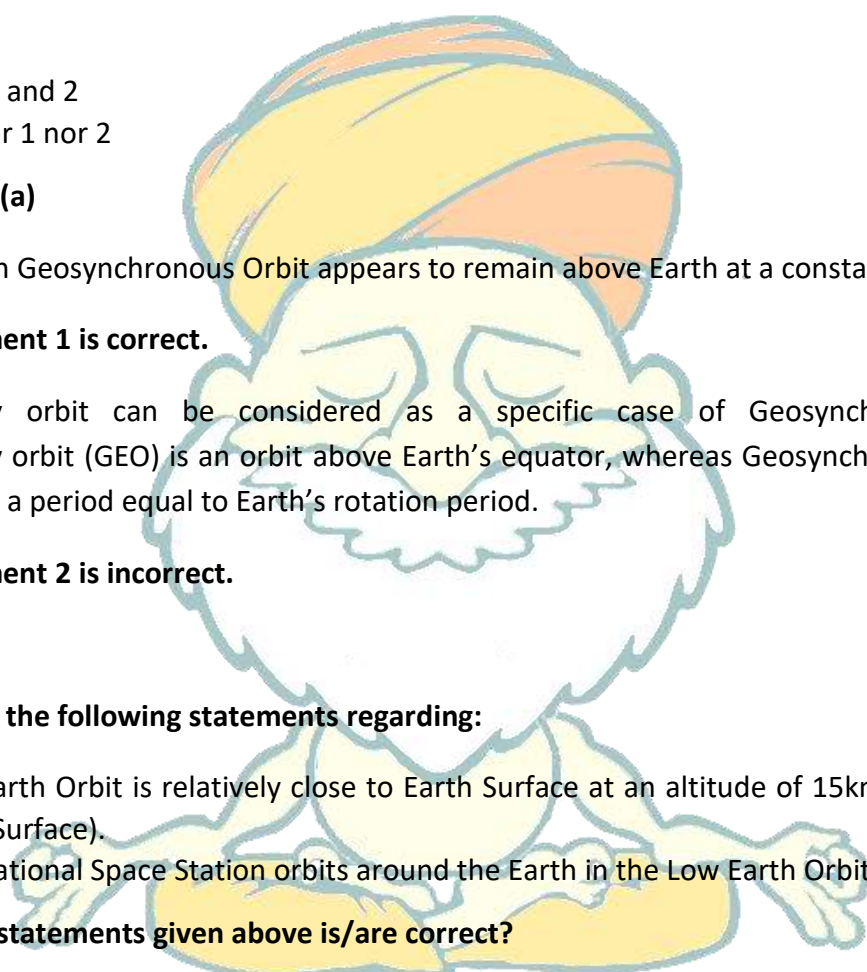
### Q.3) Consider the following statements regarding:

1. Low Earth Orbit is relatively close to Earth Surface at an altitude of 15km-60km (above Earth Surface).
2. International Space Station orbits around the Earth in the Low Earth Orbit.

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

### Q.3) Solution (b)



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Low Earth Orbit is relatively close to Earth Surface at an altitude of 160km-1000km (above Earth Surface).

**Hence Statement 1 is incorrect.**

International Space Station orbits around the Earth in the Low Earth Orbit.

**Hence Statement 2 is correct.**

**Q.4) Consider the following statements:**

1. Satellites in polar orbits usually travel past Earth from north to south rather than from west to east.
2. Satellites in Sun-synchronous orbit are synchronised to be in the same fixed position relative to the Sun.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.4) Solution (d)**

Satellites in polar orbits usually travel past Earth from north to south rather than from west to east, passing roughly over Earth's poles.

**Hence Statement 1 is correct.**

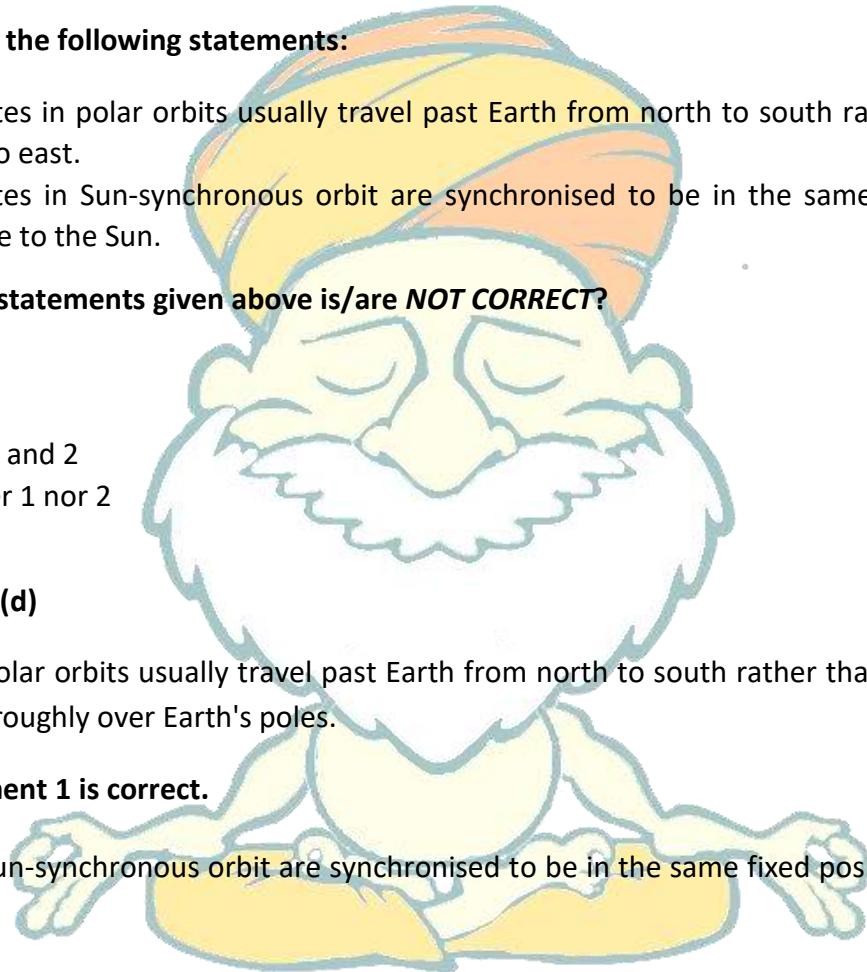
Satellites in Sun-synchronous orbit are synchronised to be in the same fixed position relative to the Sun.

**Hence Statement 2 is correct.**

**Q.5) Consider the following statements:**

1. Eccentricity is a measure of how circular or elliptical an orbit is.
2. Inclination is the angular distance of the orbital plane from the plane of the planet's equator.

**Which of the statements given above is/are correct?**



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- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.5) Solution (c)

Eccentricity is a measure of how circular or elliptical an orbit is.

**Hence Statement 1 is correct.**

Inclination is the angular distance of the orbital plane from the plane of the planet's equator.

Nodes are points where an orbit crosses a reference plane, such as the ecliptic or the celestial equator.

**Hence Statement 2 is correct.**

### Q.6) Which of these discoveries is a landmark evidence of Big Bang theory?

- a) Quasars
- b) The first exoplanet 51 Pegasi b
- c) Cosmic Microwave Background Radiation
- d) Supernova

### Q.6) Solution (c)

- The cosmic microwave background (CMB) is electromagnetic radiation as a remnant from an early stage of the universe in Big Bang cosmology.
- The CMB is a faint cosmic background radiation filling all space that is an important source of data on the early universe because it is the oldest electromagnetic radiation in the universe, dating to the epoch of recombination.

### Q.7) With reference to neutrinos, Consider the following statements:

1. There are two types of neutrinos, electron neutron and proton neutrino.
2. Natural neutrinos are harmful as they generate radiation and can cause diseases.
3. Neutrinos come from the sun (solar neutrinos) and other stars, cosmic rays that come from beyond the solar system, and from the Big Bang.

**Which of the statements given above is/are correct?**

- a) 1 only

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- b) 1 and 3 only
- c) 2 and 3 only
- d) 3 only

### Q.7) Solution (d)

Three types or "flavours" of neutrino exist: the electron neutrino, the muon neutrino and the tau neutrino.

**Hence Statement 1 is incorrect.**

Neutrino has a very tiny mass. It interacts very weakly with other matter particles and so weak that every second trillions of neutrinos fall on us and pass through our bodies unnoticed.

**Hence Statement 2 is incorrect.**

Neutrinos come from the sun (solar neutrinos) and other stars, cosmic rays that come from beyond the solar system, and from the Big Bang

**Hence Statement 3 is correct.**

### Q.8) Which of the following statements is/are correct with reference to the Black holes:

1. A black hole is a place in space where gravity pulls so much that even light cannot get out.
2. Density of black hole is neither very low nor very high.
3. Stellar black holes are made when the center of a very big star falls in upon itself, or collapses.

**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

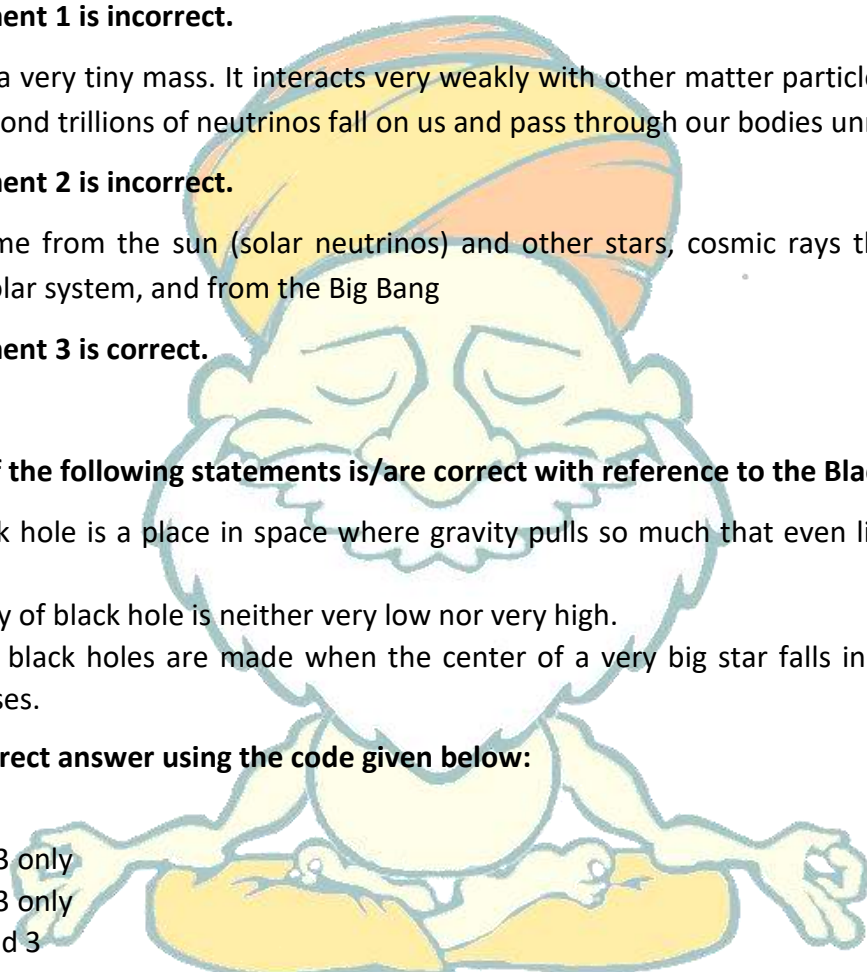
### Q.8) Solution (c)

A black hole is a place in space where gravity pulls so much that even light cannot get out.

**Hence Statement 1 is correct.**

Density of black hole is very high.

**Hence Statement 2 is incorrect.**





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Stellar black holes are made when the center of a very big star falls in upon itself, or collapses.

**Hence Statement 3 is correct.**

**Q.9) With reference to Gravitational Waves, Consider the following statements:**

1. Gravitational waves can be produced by Humans, Cars and Aeroplanes.
2. The strongest gravitational waves are produced by catastrophic events such as colliding black holes, the collapse of supernovae and the remnants of gravitational radiation created by the birth of the Universe itself.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.9) Solution (d)**

Gravitational waves can be produced by Humans, Cars and Aeroplanes.

**Hence Statement 1 is correct.**

The strongest gravitational waves are produced by catastrophic events such as colliding black holes, the collapse of supernovae and the remnants of gravitational radiation created by the birth of the Universe itself

**Hence Statement 2 is correct.**

**Q.10) Consider the following statements with reference to India's solar mission Aditya-L1:**

1. Aditya L1 is the first satellite to study the magnetic field of the sun's corona.
2. Aditya L1 will help to study that why the photosphere, the deeper layer of the sun is at much lower temperature than the corona.

**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

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### Q.10) Solution (c)

Aditya L1 is the first satellite to study the magnetic field of the sun's corona.

Hence Statement 1 is correct.

Aditya L1 will help to study that why the photosphere, the deeper layer of the sun is at much lower temperature than the corona.

Hence Statement 2 is correct.

### Q.11) Consider the following statements regarding Astra missile:

1. Astra has a range of more than 100 km.
2. Astra is a Beyond Visual Range Air-to-Air Missile.

Which of the statements given above is/are **NOT CORRECT**?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.11) Solution (d)

Astra has a range of more than 100 km. The missile has midcourse guidance and RF seeker based terminal guidance to achieve target destruction with pin point accuracy.

Hence Statement 1 is correct.

Astra is a Beyond Visual Range Air-to-Air Missile (BVRAAM).

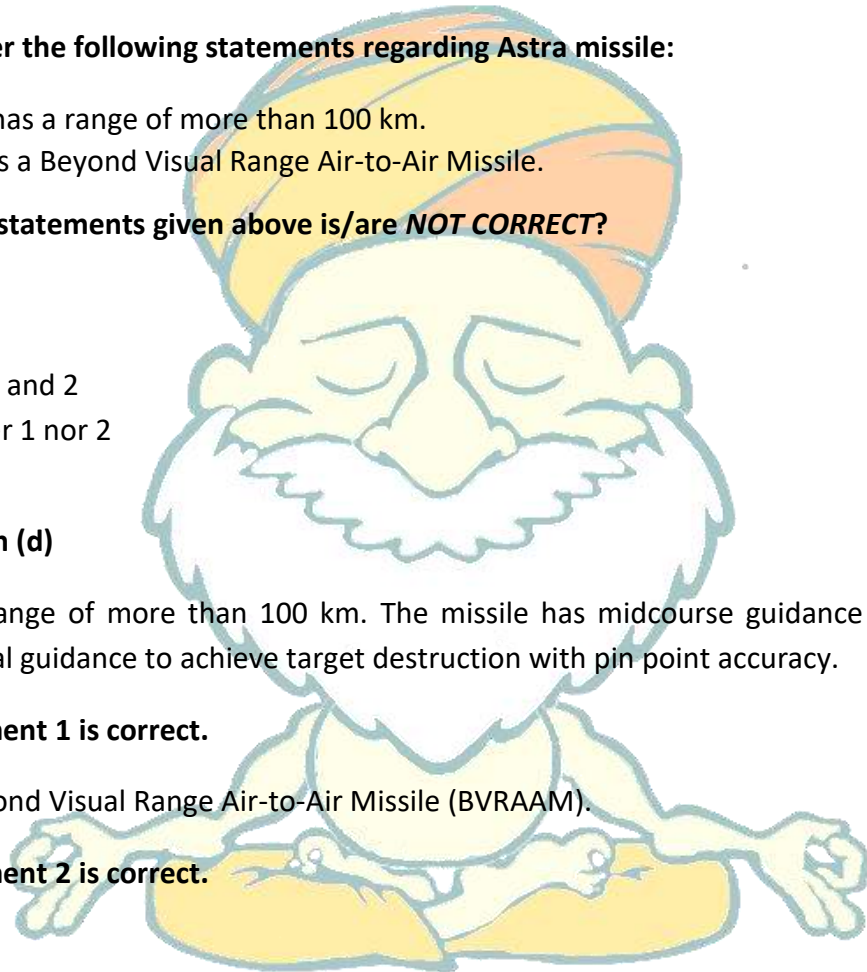
Hence Statement 2 is correct.

### Q.12) Consider the following statements regarding Pinaka Missile System:

1. Pinaka missile system was developed by Hindustan Aeronautics Limited (HAL).
2. The Pinaka MK-II Rocket is modified as a missile by integrating with the Navigation which is aided by GPS.

Which of the statements given above is/are correct?

- a) 1 only



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- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.12) Solution (d)

Pinaka missile system has been jointly developed by Defence Research and Development Organisation (DRDO) laboratories. The Pinaka is an Artillery Missile System capable of striking into enemy territory up to a range of 75 kilometres with high precision.

**Hence Statement 1 is incorrect.**

The Pinaka MK-II Rocket is modified as a missile by integrating with the Navigation which is aided by the Indian Regional Navigation Satellite System (IRNSS).

**Hence Statement 2 is incorrect.**

**Q.13) Which of the following Country participated in joint military training exercise Shakti-2019 with India:**

- a) Nepal
- b) France
- c) Germany
- d) America

### Q.13) Solution (b)

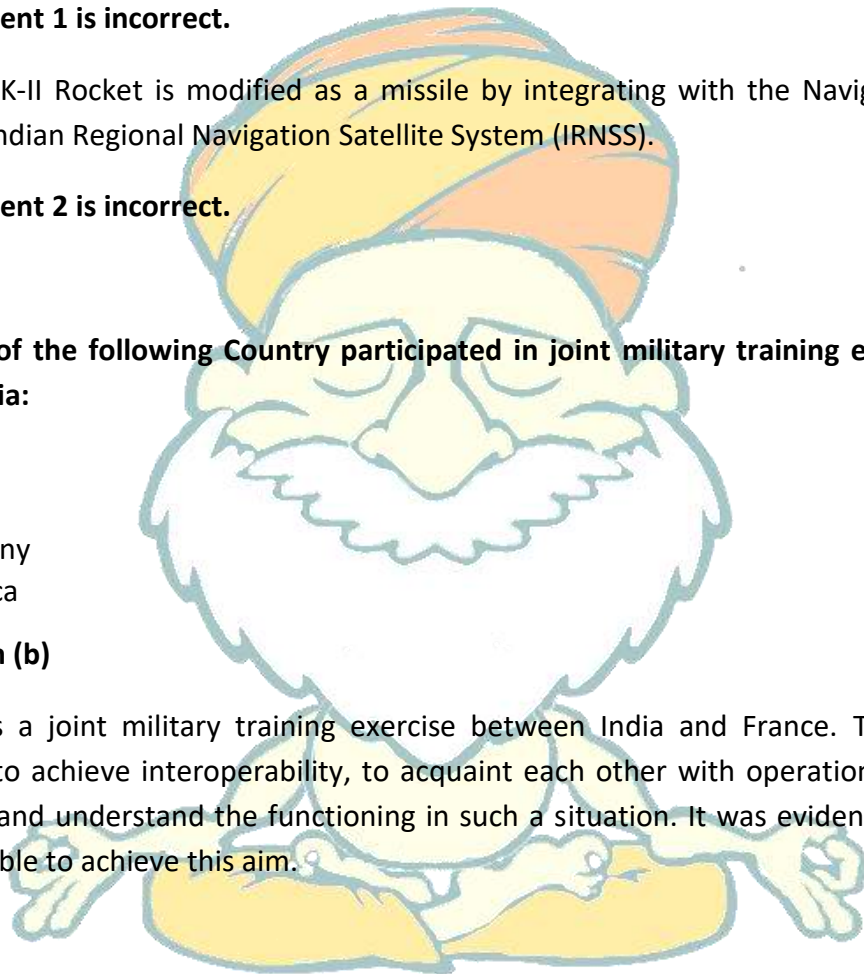
Shakti-2019 is a joint military training exercise between India and France. The aim of the exercise was to achieve interoperability, to acquaint each other with operational procedures, combat drills and understand the functioning in such a situation. It was evident that both the armies were able to achieve this aim.

**Q.14) Consider the following statements:**

1. INS Vela is the first Frigate of Class of P17A Frigates.
2. INS Khanderi is the second submarine of Scorpene class (Project 75).

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only



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- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.14) Solution (a)

The first of Class of P17A Frigates, 'Nilgiri' was launched recently at Mazagon Dock Limited (MDL), Mumbai.

**Hence Statement 1 is incorrect.**

INS Khanderi is the second submarine of Scorpene class (Project 75).

**Hence Statement 2 is correct.**

### Q.15) Consider the following statements:

1. GISAT-1 is the first state-of-the-art agile Earth observation satellite which will be placed in a Geosynchronous Transfer Orbit by GSLV-F10.
2. GISAT-1 will facilitate near real time observation of the Indian sub-continent, under cloud free condition, at frequent intervals.

**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

### Q.15) Solution (c)

GISAT-1 is the first state-of-the-art agile Earth observation satellite which will be placed in a Geosynchronous Transfer Orbit by GSLV-F10. Subsequently, the satellite will reach the final geostationary orbit using its onboard propulsion system.

A 4 metre diameter Ogive shaped payload fairing is being flown for the first time in this GSLV flight. This is the fourteenth flight of the GSLV.

**Hence Statement 1 is correct.**

Operating from geostationary orbit, GISAT-1 will facilitate near real time observation of the Indian sub-continent, under cloud free condition, at frequent intervals.

**Hence Statement 2 is correct.**

**Q.16) Chemical weapons are classified as weapons of mass destruction (WMD). One of the very famous WMD is Sarin, used as a chemical weapon due to its extreme potency as a nerve agent. It contains**

- a) Sulphur, Fluorine and Oxygen
- b) Nitrogen, Sulphur and Oxygen
- c) Phosphorous, Sulphur and Oxygen
- d) Phosphorous, Fluorine and Oxygen

**Q.16) Solution (d)**

Nerve agents are a class of phosphorus-containing organic chemicals (organophosphates) that disrupt the mechanisms by which nerves transfer messages to organs.

Sarin was once in news due to Syria, recently Sarin was found in a mail bag outside Facebook's Office.

**Q.17) With reference to The Chief of Defence Staff (CDS), Consider the following statements:**

1. CDS will be the Permanent Chairman of the Chiefs of Staff Committee.
2. CDS will act as the Principal Military Adviser to Minister for Defence on all tri-Services matters.
3. The Chief of Defence Staff will also head the Department of Military Affairs (DMA).

**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

**Q.17) Solution (d)**

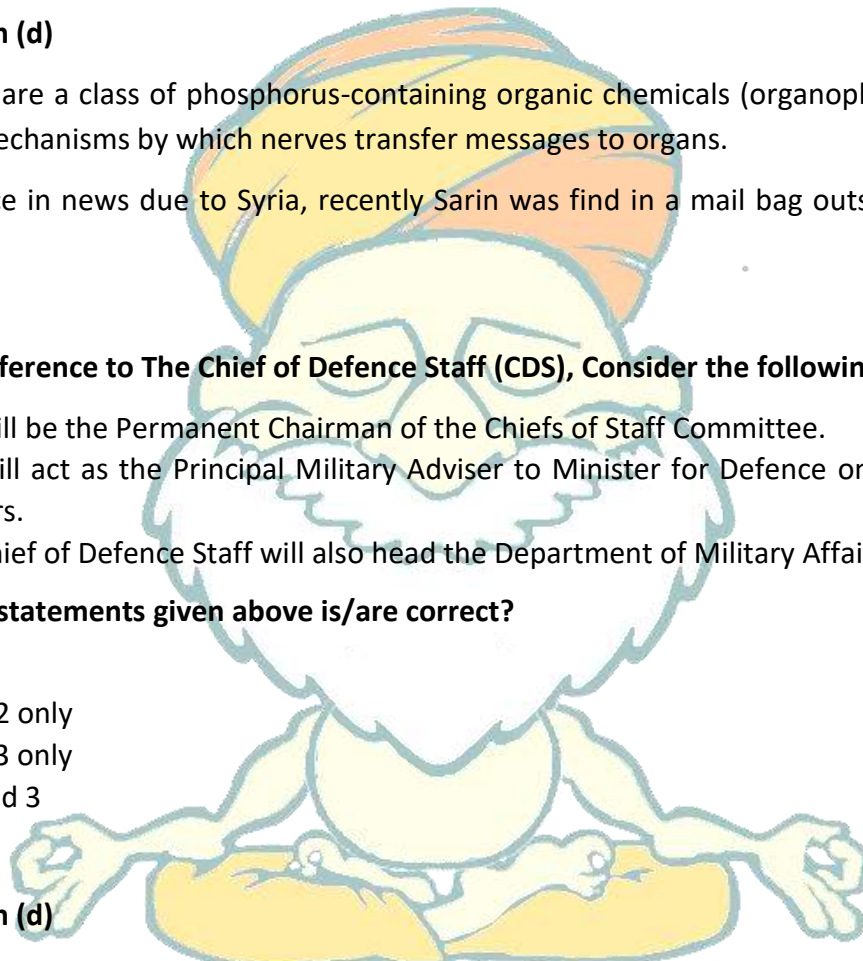
CDS will be the Permanent Chairman of the Chiefs of Staff Committee.

**Hence Statement 1 is correct.**

CDS will act as the Principal Military Adviser to Minister for Defence on all tri-Services matters.

**Hence Statement 2 is correct.**

The Chief of Defence Staff will also head the Department of Military Affairs (DMA), Ministry of Defence.



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Hence Statement 3 is correct.

**Q.18) Consider the following statements about The Indian Nuclear Power Programme.**

1. In the first stage of the programme, natural uranium fueled pressurized heavy water reactors (PHWR) produce electricity while generating plutonium-239 as by-product.
2. The Stage II Fast Breeder Reactors are designed to "breed" more fuel than they consume.
3. The Stage III reactor or an Advanced nuclear power system involves a self-sustaining series of thorium-232-uranium-233 fueled reactors.

**Which of the above statements is/are correct?**

- a) 1 and 2 only
- b) 2 and 3 only
- c) 3 only
- d) 1, 2 and 3

**Q.18) Solution (d)**

In the first stage of the programme, natural uranium fueled pressurized heavy water reactors (PHWR) produce electricity while generating plutonium-239 as by-product.

Hence Statement 1 is correct.

The Stage II Fast Breeder Reactors are designed to "breed" more fuel than they consume.

Hence Statement 2 is correct.

The Stage III reactor or an Advanced nuclear power system involves a self-sustaining series of thorium-232-uranium-233 fueled reactors.

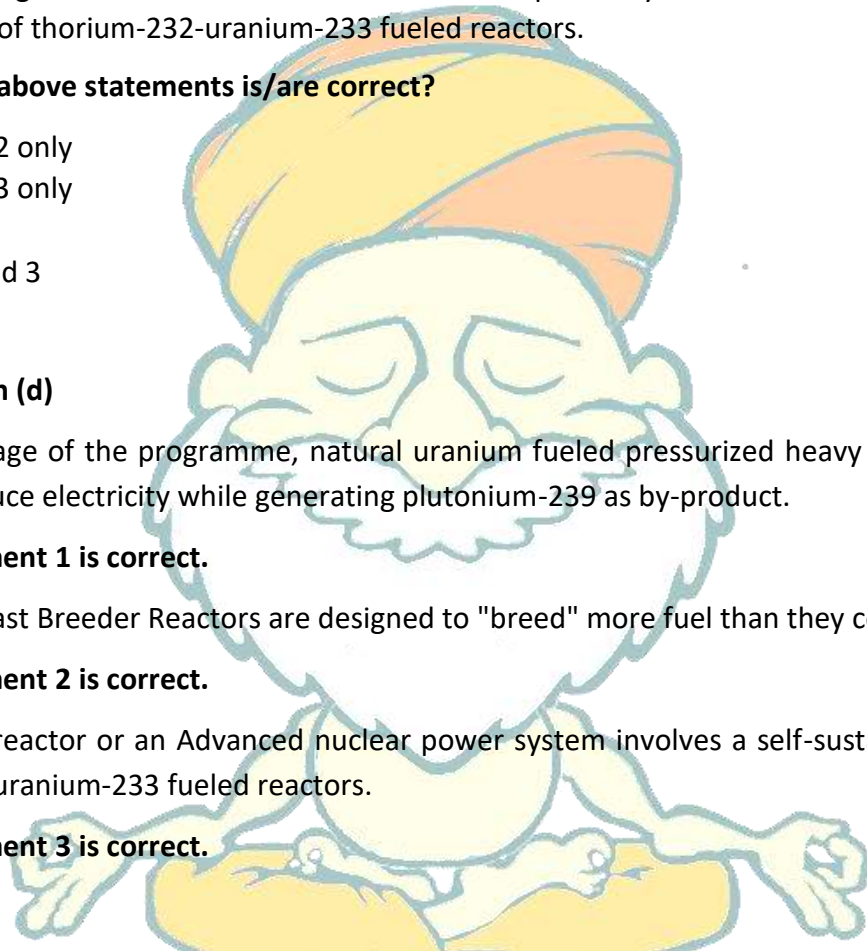
Hence Statement 3 is correct.

**Q.19) Which of the following statements is/are correct about 'Anti Tank NAG' Missile?**

1. It has been indigenously developed under the Integrated Guided Missile Development Programme (IGMDP)
2. It is a fire and forget missile.
3. It can be launched from land, water and air based platforms.

**Select the correct answer using the code given below:**

- a) 1 and 2 only
- b) 2 and 3 only



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- c) 1 only
- d) 1, 2 and 3

### Q.19) Solution (a)

It has been indigenously developed under the Integrated Guided Missile Development Programme (IGMDP)

**Hence Statement 1 is correct.**

It is a fire and forget, heat seeking guided missile.

**Hence Statement 2 is correct.**

It can be launched from land and air based platforms.

**Hence Statement 3 is incorrect.**

### Q.20) Which of the following statements are correct regarding Parker Solar Probe?

1. Parker Solar Probe uses Mercury's gravity to gradually bring its orbit closer to Sun.
2. Parker Solar Probe is a joint mission of NASA, European Space Agency and ROSCOSMOS .

**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

### Q.20) Solution (d)

Parker Solar Probe uses Venus' gravity during seven flybys over nearly seven years to gradually bring its orbit closer to the Sun.

**Hence Statement 1 is incorrect.**

Parker Solar Probe is a mission by NASA. The primary science goals for the mission are to trace how energy and heat move through the solar corona and to explore what accelerates the solar wind as well as solar energetic particles.

**Hence Statement 2 is incorrect.**

### Q.21) Consider the following statements:

1. Endonucleases remove nucleotides from the ends of the DNA.

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2. Exonucleases make cuts at specific positions within the DNA.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.21) Solution (c)**

Exonucleases remove nucleotides from the ends of the DNA.

**Hence Statement 1 is incorrect.**

Endonucleases make cuts at specific positions within the DNA.

**Hence Statement 2 is incorrect.**

**Q.22) Consider the following statements:**

- 1. A plasmid can be used as vector to deliver an alien piece of DNA into the host organism.
- 2. The cutting of DNA at specific locations is not possible.

**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

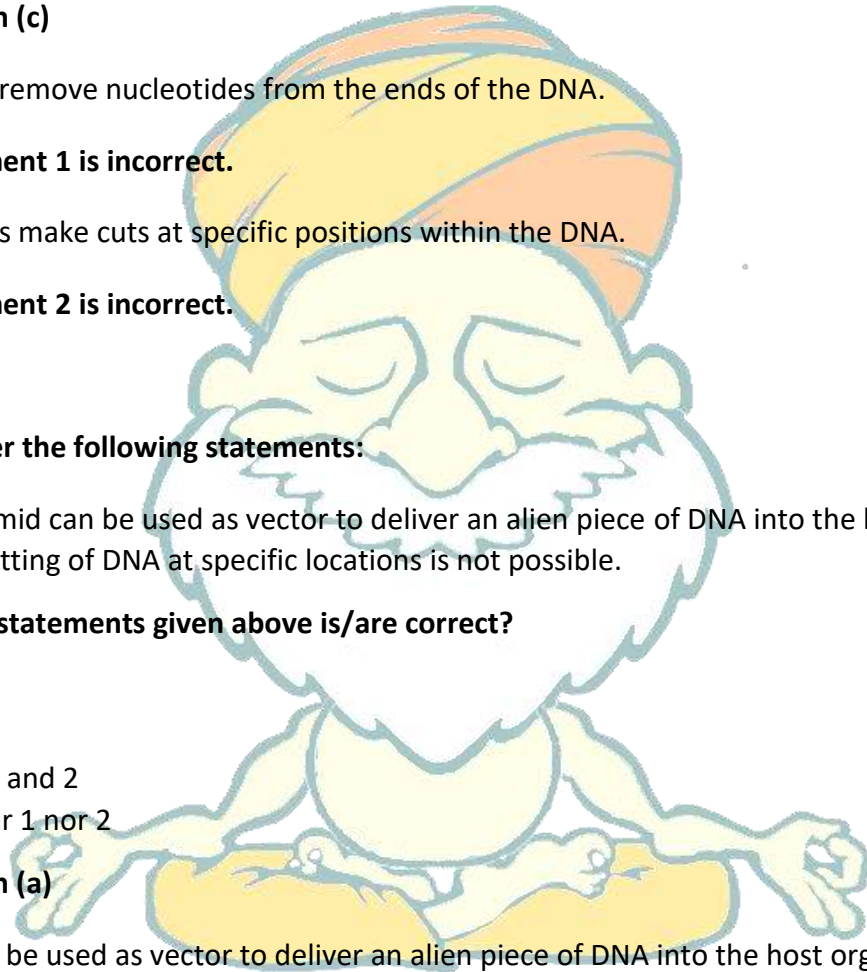
**Q.22) Solution (a)**

A plasmid can be used as vector to deliver an alien piece of DNA into the host organism.

**Hence Statement 1 is correct.**

The cutting of DNA at specific locations became possible with the discovery of the so-called 'molecular scissors'— restriction enzymes.

**Hence Statement 2 is incorrect.**





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**Q.23) Consider the following statements regarding introduction of alien DNA into host cells:**

1. In a method known as biolistics, recombinant DNA is directly injected into the nucleus of an animal cell.
2. In another method, suitable for plants, cells are bombarded with high velocity micro particles of gold or tungsten coated with DNA in a method known as gene gun.

**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

**Q.23) Solution (b)**

In a method known as micro-injection, recombinant DNA is directly injected into the nucleus of an animal cell.

**Hence Statement 1 is incorrect.**

In another method, suitable for plants, cells are bombarded with high velocity micro particles of gold or tungsten coated with DNA in a method known as biolistics or gene gun.

**Hence Statement 2 is correct.**

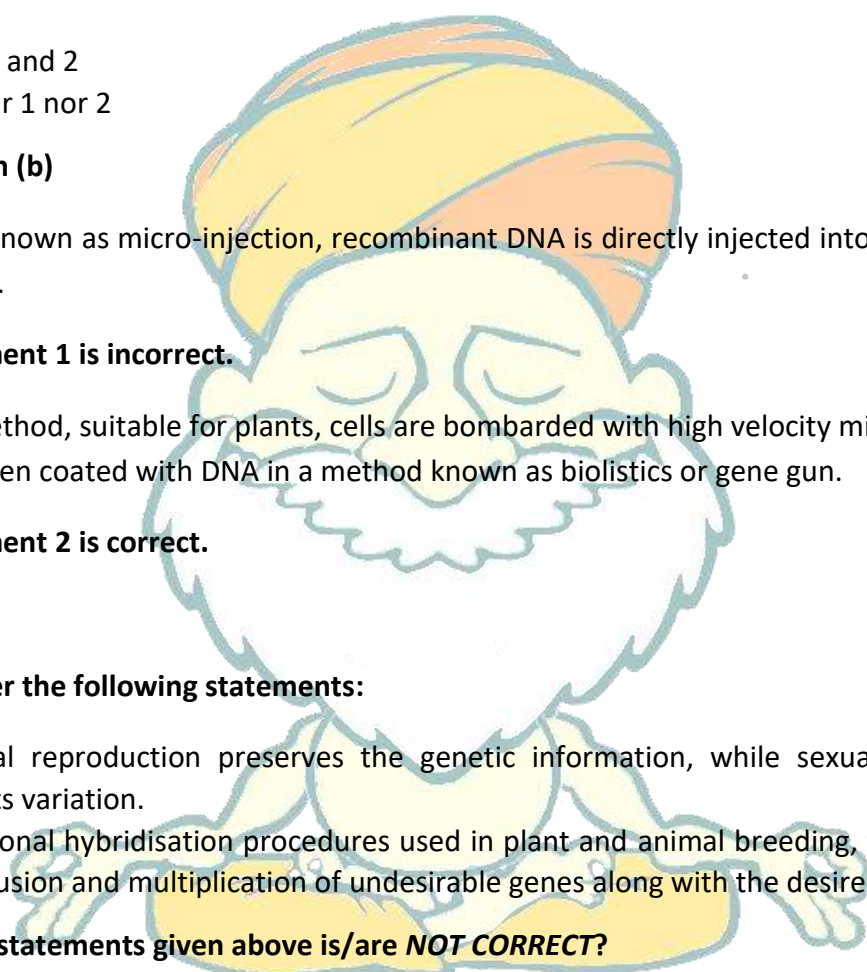
**Q.24) Consider the following statements:**

1. Asexual reproduction preserves the genetic information, while sexual reproduction permits variation.
2. Traditional hybridisation procedures used in plant and animal breeding, very often lead to inclusion and multiplication of undesirable genes along with the desired genes.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.24) Solution (d)**



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Asexual reproduction preserves the genetic information, while sexual reproduction permits variation.

**Hence Statement 1 is correct.**

Traditional hybridisation procedures used in plant and animal breeding, very often lead to inclusion and multiplication of undesirable genes along with the desired genes.

**Hence Statement 2 is correct.**

**Q.25) Consider the following statements:**

1. In a chromosome there is a specific DNA sequence called the origin of replication, which is responsible for initiating replication.
2. An alien DNA is linked with the origin of replication, so that, this alien piece of DNA can replicate and multiply itself in the host organism.

**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

**Q.25) Solution (c)**

In a chromosome there is a specific DNA sequence called the origin of replication, which is responsible for initiating replication.

**Hence Statement 1 is correct.**

An alien DNA is linked with the origin of replication, so that, this alien piece of DNA can replicate and multiply itself in the host organism.

**Hence Statement 2 is correct.**

**Q.26) In which of the parts of a cell, DNA is found?**

- a) Nucleus
- b) Endoplasmic reticulum
- c) Golgi Apparatus

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d) None of the above

### Q.26) Solution (a)

Deoxyribonucleic acid DNA is a molecule that carries the genetic instructions used in the growth, development, functioning and reproduction of all known living organisms and many viruses. DNA and RNA are nucleic acid (Found in the nucleus of a cell) ; alongside proteins, lipids and complex carbohydrates (polysaccharides), they are one of the four major types of macromolecules that are essential for all known forms of life.

A small amount of DNA can also be found in Mitochondria.

### Q.27) Consider the following statements regarding IndiGen initiative:

1. The initiative was undertaken by Indian Council of Medical Research.
2. Under the initiative the whole genome sequencing of the whole population of Kerala, Bihar was conducted.

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

### Q.27) Solution (d)

The initiative was undertaken by The Council of Scientific & Industrial Research (CSIR).

Hence Statement 1 is incorrect.

CSIR has conducted Whole Genome Sequencing of 1,008 Indians from different populations across the country

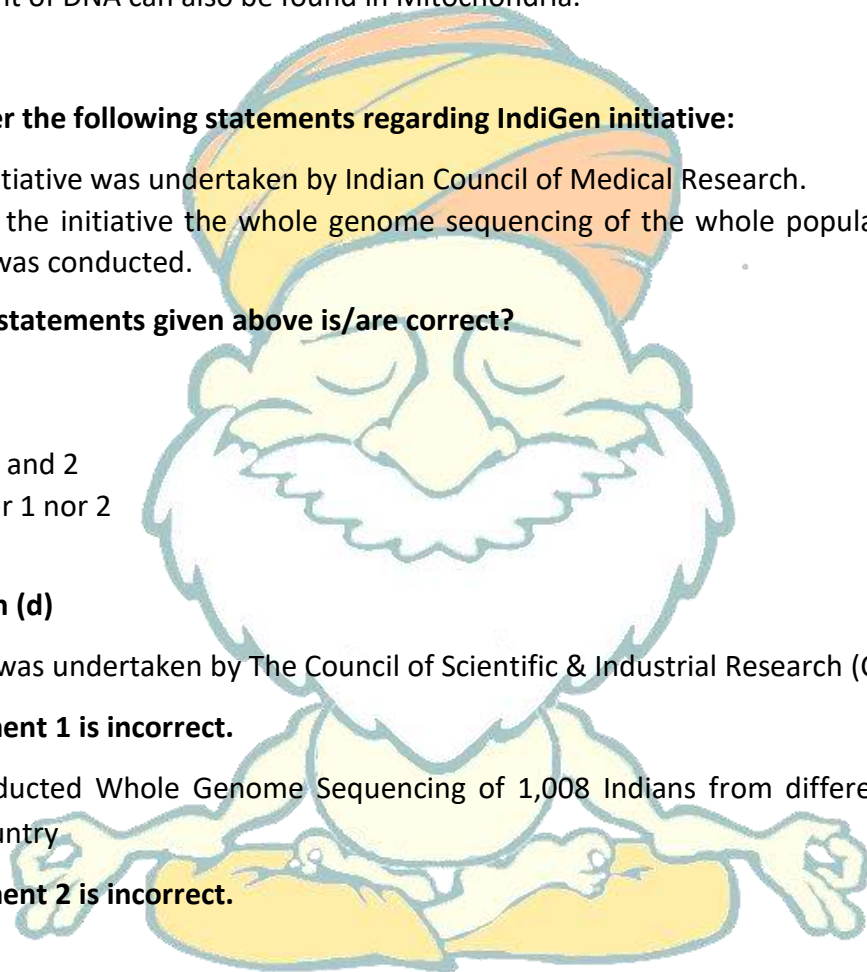
Hence Statement 2 is incorrect.

### Q.28) Consider the following statements.

1. Cloning of organisms is not possible through asexual reproduction.
2. Cloning does not occur naturally.

Which of the above statements is/are correct?

- a) 1 only
- b) 1 and 2 only
- c) Both 1 and 2



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d) Neither 1 nor 2

### Q.28) Solution (d)

Cloning of organisms is possible through asexual reproduction.

**Hence Statement 1 is incorrect.**

In some cases, cloning do occur naturally.

**Hence Statement 2 is incorrect.**

### Q.29) Which among the following are examples of biotechnology?

1. Beer brewing
2. Cloning
3. Gene Therapy

**Select the correct answer using the code given below:**

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 only
- d) 1, 2 and 3

### Q.29) Solution (d)

Biotechnology is the use of an organism, or a component of an organism or other biological system, to make a product or process for a specific use.

### Q.30) Which of the following statements are correct about DNA and RNA?

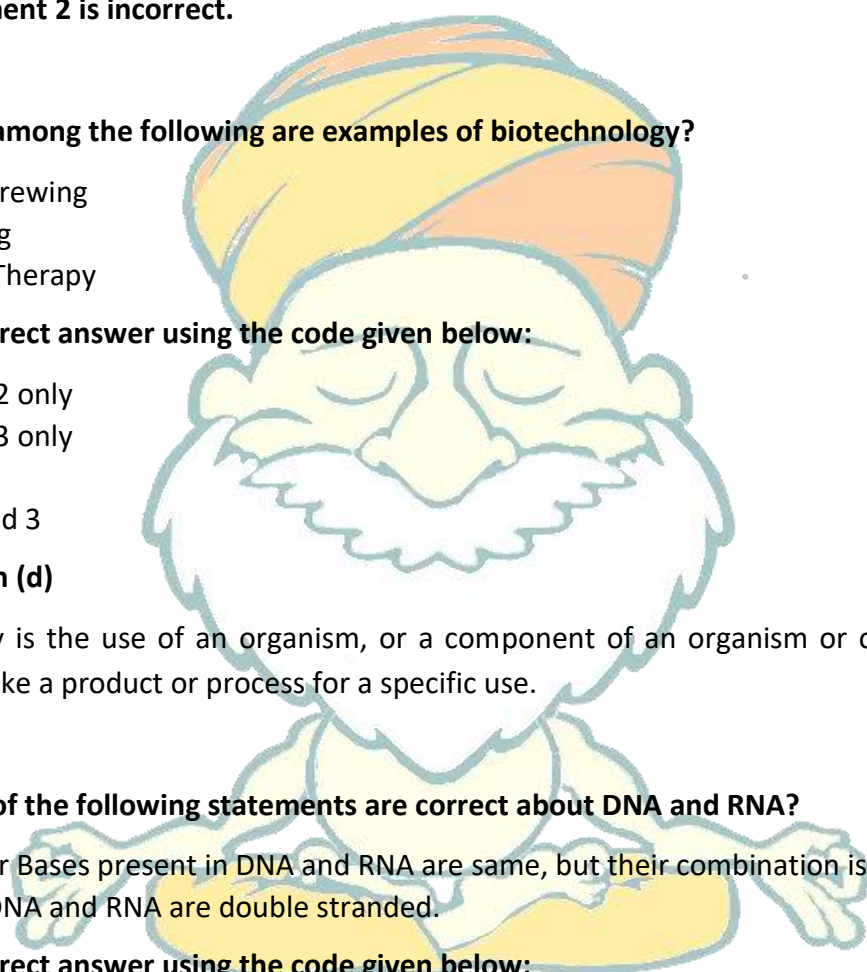
1. All four Bases present in DNA and RNA are same, but their combination is different.
2. Both DNA and RNA are double stranded.

**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

### Q.30) Solution (d)

Base pairing in case of DNA: A-T (Adenine-Thymine), G-C (Guanine-Cytosine)



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Base pairing in case of RNA: A-U (Adenine-Uracil), G-C (Guanine-Cytosine)

**Hence Statement 1 is incorrect.**

DNA is typically a double- stranded molecule with a long chain of nucleotides. RNA is typically a single-stranded molecule in most of its biological roles and has a shorter chain of nucleotides.

**Hence Statement 2 is incorrect.**

**Q.31) Consider the following statements regarding ITER (International Thermonuclear Experimental Reactor):**

1. ITER is a large-scale scientific experiment intended to prove the viability of fission as an energy source.
2. India is also one of the partner countries in building this reactor.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.31) Solution (a)**

ITER is a large-scale scientific experiment intended to prove the viability of fusion as an energy source.

**Hence Statement 1 is incorrect.**

ITER is currently under construction in the south of France. In an unprecedented international effort, seven partners—China, the European Union, India, Japan, Korea, Russia and the United States—have pooled their financial and scientific resources to build the biggest fusion reactor in history.

**Hence Statement 2 is correct.**

**Q.32) Consider the following statements:**

1. In Nuclear fission, the nucleus of a heavy atom is bombarded with low-energy neutrons.
2. Nuclear fission reactions are the source of energy in the 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

**Q.32) Solution (a)**

In Nuclear fission, the nucleus of a heavy atom (such as uranium, plutonium or thorium), when bombarded with low-energy neutrons, can be split apart into lighter nuclei

**Hence Statement 1 is correct.**

Nuclear fusion reactions are the source of energy in the Sun and other stars.

**Hence Statement 2 is incorrect.**

**Q.33) Consider the following statements:**

1. The hydrogen bomb is based on thermonuclear fusion reaction.
2. A nuclear bomb based on the nuclear fusion of uranium or plutonium is placed at the core of the hydrogen bomb.

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

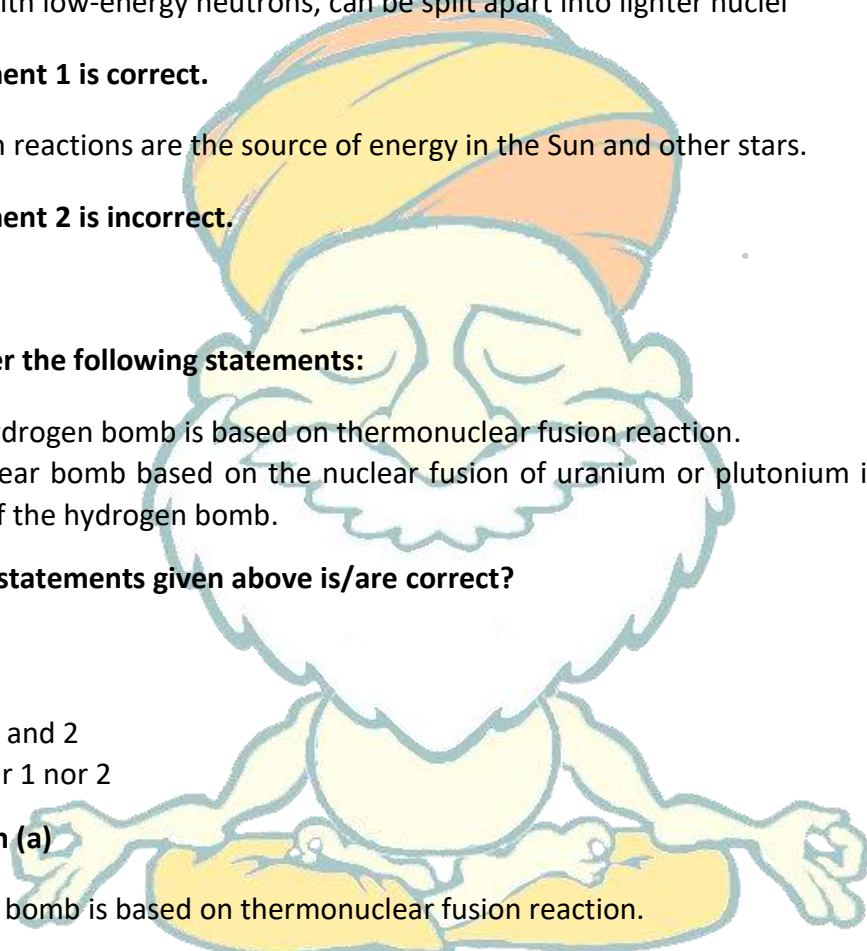
**Q.33) Solution (a)**

The hydrogen bomb is based on thermonuclear fusion reaction.

**Hence Statement 1 is correct.**

A nuclear bomb based on the fission of uranium or plutonium is placed at the core of the hydrogen bomb.

**Hence Statement 2 is incorrect.**



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**Q.34) Consider the following statements:**

1. Uranium ore mined in India are of very low grade as compared to those available in other countries.
2. Uranium Corporation of India Limited is a Public Sector Enterprise under the Ministry of Mines.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.34) Solution (b)**

Uranium ore mined in India are of very low grade as compared to those available in other countries.

**Hence Statement 1 is correct.**

Uranium Corporation of India Limited is a Public Sector Enterprise under the Department of Atomic Energy.

**Hence Statement 2 is incorrect.**

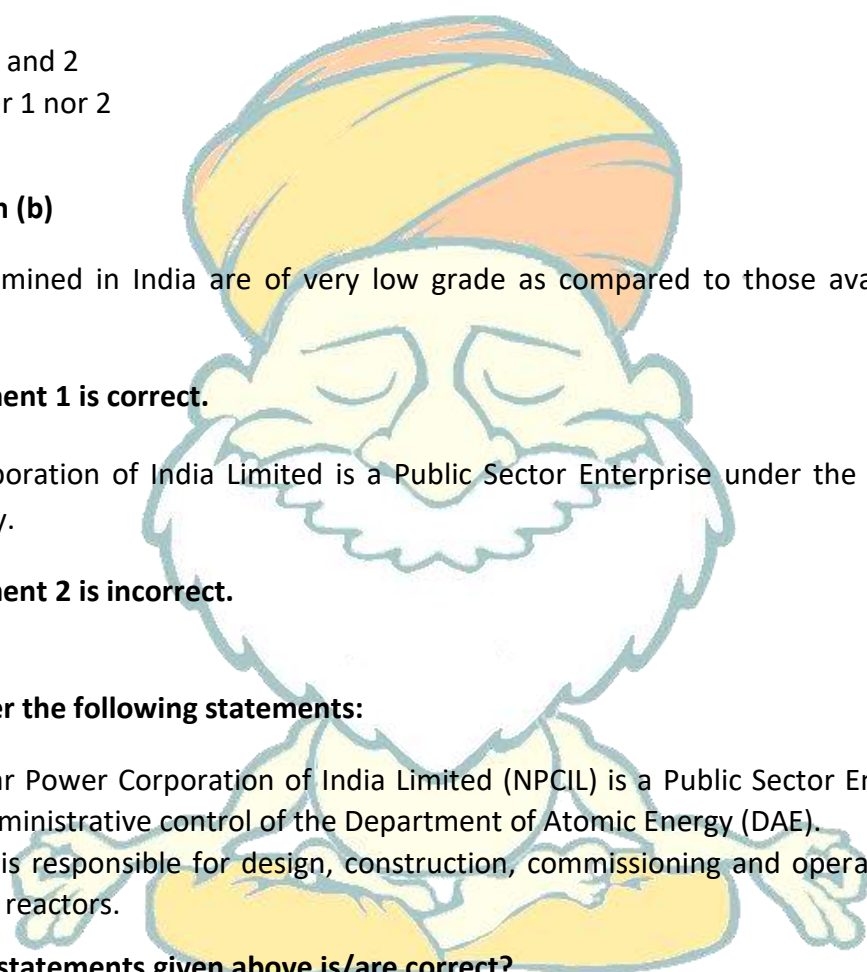
**Q.35) Consider the following statements:**

1. Nuclear Power Corporation of India Limited (NPCIL) is a Public Sector Enterprise under the administrative control of the Department of Atomic Energy (DAE).
2. NPCIL is responsible for design, construction, commissioning and operation of nuclear power reactors.

**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

**Q.35) Solution (c)**



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Nuclear Power Corporation of India Limited (NPCIL) is a Public Sector Enterprise under the administrative control of the Department of Atomic Energy (DAE), Government of India.

**Hence Statement 1 is correct.**

NPCIL is responsible for design, construction, commissioning and operation of nuclear power reactors.

**Hence Statement 2 is correct.**

**Q.36) Which of the following is/are the applications of biotechnology:**

1. Therapeutics and Diagnostics
2. Genetically modified crops for agriculture
3. Bioremediation and waste treatment
4. Energy production

**Choose the correct answers using the codes given below.**

- a) 1, 2 and 3 only
- b) 2, 3 and 4 only
- c) 1 and 2 only
- d) 1, 2, 3 and 4

**Q.36) Solution (d)**

The applications of biotechnology include therapeutics, diagnostics, genetically modified crops for agriculture, processed food, bioremediation, waste treatment, and energy production.

**Q.37) Consider the following statement about induced pluripotent stem cells (iPSC).**

1. They are derived from embryonic stem cells.
2. The tissues derived from these iPSC can avoid rejection by the immune system.

**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

**Q.37) Solution (b)**

Induced pluripotent stem cells (iPSC) produced by genetically manipulating human skin cells to produce embryonic-like stem cells that are capable of forming any cell types of the body.



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**Hence Statement 1 is incorrect.**

Tissues derived from iPSCs will be a nearly identical match to the cell donor and thus probably avoid rejection by the immune system.

**Hence Statement 2 is correct.**

**Q.38) Which of the following reasons make Escherichia coli suitable for gene cloning?**

1. The E. coli genome was the first to be completely sequenced
2. It grows slowly for days and gives a stable condition for observation
3. E. coli is naturally found in the intestinal tracts of humans and animals

**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

**Q.38) Solution (c)**

The E. coli genome was the first to be completely sequenced

**Hence Statement 1 is correct.**

Under ideal conditions, E. coli cells can double in number after only 20 minutes.

**Hence Statement 2 is incorrect.**

E. coli is naturally found in the intestinal tracts of humans and animals

**Hence Statement 3 is correct.**

**Q.39) Consider the following statements with regard to Atomic Energy Regulatory Board (AERB)**

1. AERB is engaged in the development of nuclear power technology, applications of radiation technologies in the fields of agriculture, medicine, industry, and basic research.
2. The regulatory authority of AERB is derived from the rules and notifications promulgated under the Atomic Energy Act and the Environment (Protection) Act, 1986.
3. The AERB reports to the Atomic Energy Commission.

**Which of the statements given above is/are correct?**

- a) 1 only

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- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

### Q.39) Solution (c)

Department of Atomic Energy (not AERB), established in 1954 is engaged in the development of nuclear power technology, applications of radiation technologies in the fields of agriculture, medicine, industry, and basic research.

**Hence Statement 1 is incorrect.**

The regulatory authority of AERB is derived from the rules and notifications promulgated under the Atomic Energy Act and the Environment (Protection) Act, 1986.

**Hence Statement 2 is correct.**

The AERB reports to the Atomic Energy Commission, which is a high level policy making body for the all atomic energy matters in the country.

**Hence Statement 3 is correct.**

### Q.40) Consider the below statement with regard to human genome sequencing:

1. India is among the league of countries who have demonstrated the capability of mapping all the genes of a human.
2. The world's first human genome sequence was completed in 2003 by the International Human Genome Project, to which Indian scientists had also contributed.

**Which of the statements given above is/are NOT CORRECT?**

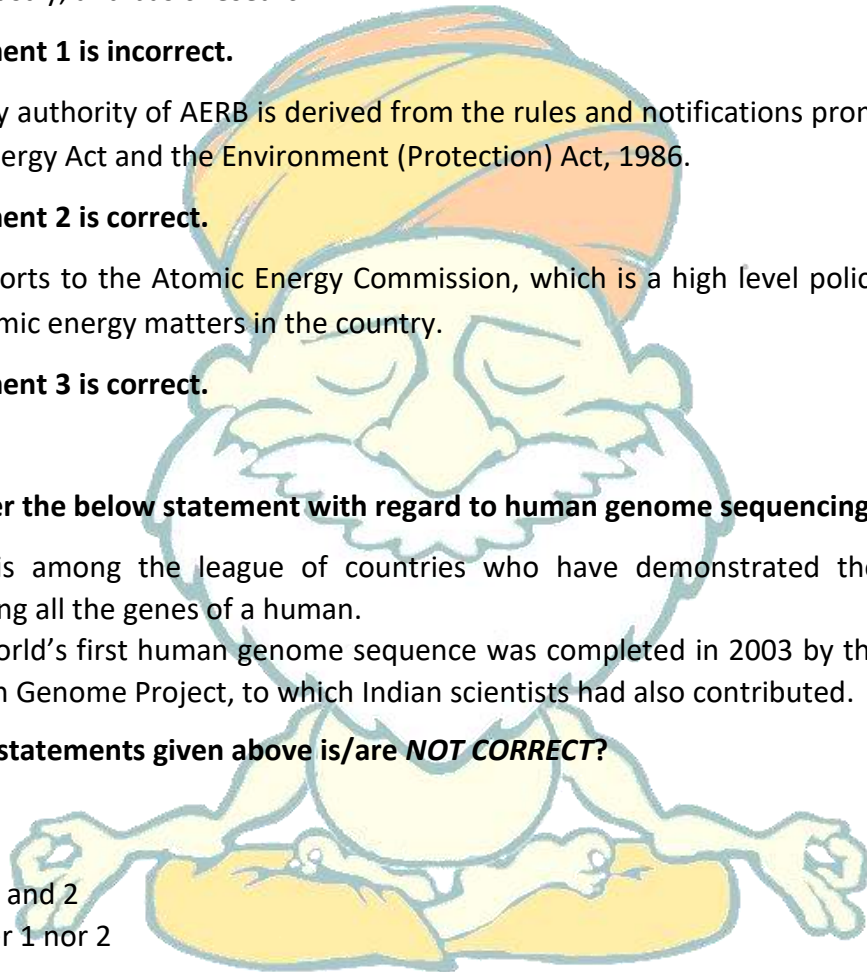
- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.40) Solution (b)

India is among the league of countries who have demonstrated the capability of mapping all the genes of a human.

**Hence Statement 1 is correct.**

The world's first human genome sequence was completed in 2003 by the International Human Genome Project with scientists from the US, UK, France, Germany, Japan and China.



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Hence Statement 2 is incorrect.

**Q.41) Consider the following statements regarding recent ban on various apps by Government of India:**

1. Ministry of Science and Technology has invoked its power under section 69A of the Information Technology Act to ban these apps.
2. The Indian Cyber Crime Coordination Centre is under the Ministry of Information Technology.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.41) Solution (c)**

Ministry of Information Technology has invoked its power under section 69A of the Information Technology Act to ban these apps.

The Indian Cyber Crime Coordination Centre, Ministry of Home Affairs has also sent an exhaustive recommendation for blocking these malicious apps.

Hence Statement 1 is incorrect.

The Indian Cyber Crime Coordination Centre is under the Ministry of Home Affairs.

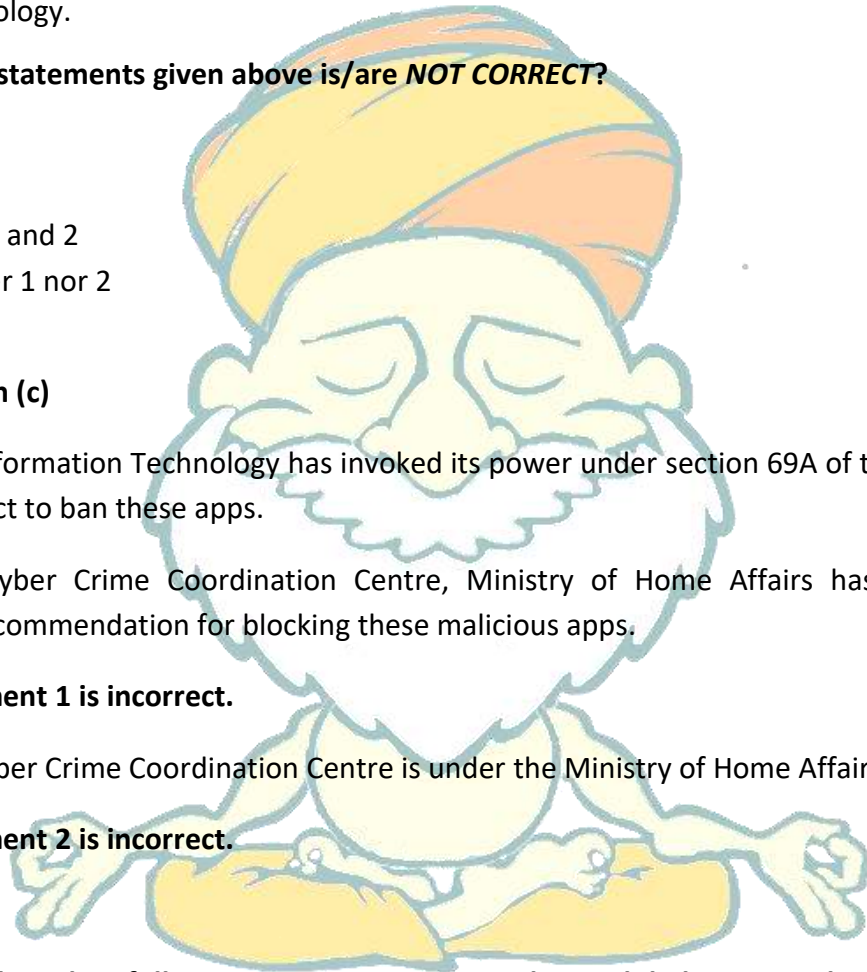
Hence Statement 2 is incorrect.

**Q.42) Consider the following statements regarding Global Partnership on Artificial Intelligence (GPAI):**

1. India is one of the founding members of GPAI.
2. The GPAI will bring together experts from industry, government, civil society and academia to conduct research and pilot projects on AI.

**Which of the statements given above is/are correct?**

- a) 1 only



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- b) 2only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.42) Solution (c)

India is one of the founding members of GPAI.

GPAI will be supported by a Secretariat, to be hosted by Organization for Economic Cooperation and Development (OECD) in Paris, as well as by two Centers of Expertise- one each in Montreal and Paris.

**Hence Statement 1 is correct.**

The GPAI will bring together experts from industry, government, civil society and academia to conduct research and pilot projects on AI.

**Hence Statement 2 is correct.**

### Q.43) Consider the following statements about Responsible AI for Youth Programme:

1. The program is designed by Microsoft and Intel India.
2. The Program will be open to students from all the Schools of 8<sup>th</sup> to 12<sup>th</sup> class across the country.

**Which of the statements given above is/are correct?**

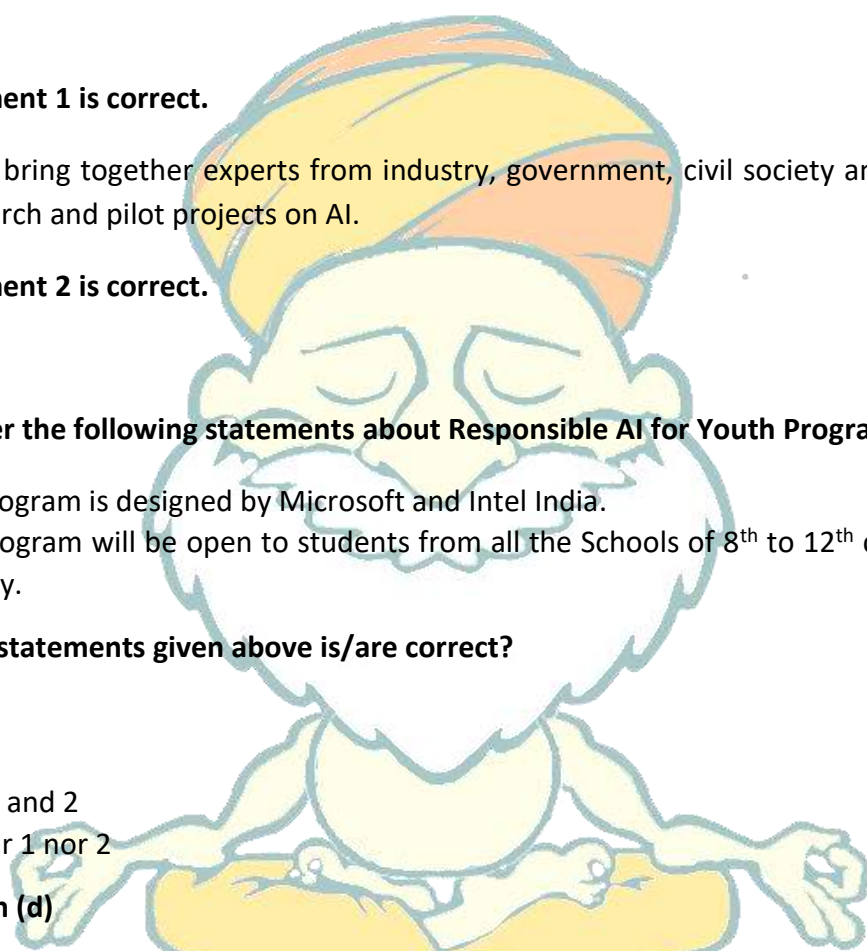
- a) 1 only
- b) 2only
- c) Both 1 and 2
- d) Neither 1 nor 2

### Q.43) Solution (d)

National e-Governance Division, Ministry of Electronics and Information Technology, Government of India and Intel India have designed a National Program for Government Schools: Responsible AI for Youth.

The aim of this program is to empower youth to become 'AI ready' and help reduce the AI skill gap in India.

**Hence Statement 1 is incorrect.**



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The Program will be open to students from Government Schools, classes 8 – 12 across the country.

**Hence Statement 2 is incorrect.**

**Q.44) Consider the following statements:**

1. Massive Machine Type Communications (mMTC) technology supports ultra-high-speed connection indoors and outdoors, with uniform quality of service, even at the cell edge.
2. Ultra-reliable and Low Latency Communications (uRLLC) technology supports a very large number of connected devices usually called Internet of Things (IoT).

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.44) Solution (c)**

Enhanced Mobile Broadband (eMBB) technology supports ultra-high-speed connection indoors and outdoors, with uniform quality of service, even at the cell edge.

**Hence Statement 1 is incorrect.**

Massive Machine Type Communications (mMTC) technology supports a very large number of connected devices usually called Internet of Things (IoT).

**Hence Statement 2 is incorrect.**

**Q.45) Consider the following statements:**

1. Centre of Excellence (CoE) in Blockchain Technology has been setup by National Informatics Centre (NIC).
2. Center of Excellence in Artificial Intelligence has been setup by National Informatics Centre (NIC).

**Which of the statements given above is/are correct?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2

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d) Neither 1 nor 2

### Q.45) Solution (c)

NIC has set up Centre of Excellence (CoE) in Blockchain Technology with an objective to promote its use and facilitate rapid adoption & on-boarding of Blockchain based solutions.

**Hence Statement 1 is correct.**

CoE in AI by NIC has been established with the motto of 'Inclusive AI' for responsive governance, to work towards improving Govt. service delivery to citizens.

**Hence Statement 2 is correct.**

### Q.46) Which of the following statements is/are correct regarding 'Cryptojacking'?

- a) It refers to the use of encrypted code to hijack a Crypto network.
- b) It refers to use of malware to hack the official sites and data of Banks.
- c) It is the secret use of a computer device to mine cryptocurrency.
- d) It is a software which decrypts an encrypted data.

### Q.46) Solution (c)

Cryptojacking is defined as the secret use of your computing device to mine cryptocurrency.

**Hence Statement c is correct.**

### Q.47) Deep Learning is an aspect of Artificial Intelligence (AI). Which of the following statements correctly describe Deep learning?

- a) It allows machine to emulate the learning process of human beings to gain certain type of knowledge.
- b) It allows students to memorise the details quickly and permanently.
- c) It is a voice command system, where once a command is given will be automatically remembered by the machine till it is changed.
- d) It helps the user to gain knowledge by the way in which the machines learn through system feed.

### Q.47) Solution (a)

It allows machine to emulate the learning process of human beings to gain certain type of knowledge.

**Hence Statement a is correct.**

**Q.48) Which of the following statements is/are correct with respect to Blockchain:**

1. It is an interlinked list of records which is secured using cryptography.
2. The process becomes more transparent, as block chain eliminates the need for a middleman in transactions.
3. Blockchain manages three important roles; it records the transactions, establishes the identity and establishes the contracts.

**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

**Q.48) Solution (d)**

It is an interlinked list of records which is secured using cryptography.

**Hence Statement 1 is correct.**

The process becomes more transparent, as block chain eliminates the need for a middleman in transactions.

**Hence Statement 2 is correct.**

Blockchain manages three important roles; it records the transactions, establishes the identity and establishes the contracts.

**Hence Statement 3 is correct.**

**Q.49) Which of the following is/are the applications of Big data?**

1. Better understanding and targeting customers by companies.
2. To prevent cyber-attacks, detect credit card fraud.
3. Used in healthcare to find new cures for cancer.
4. Security and law and order management.

**Select the correct answer using the codes given below.**

- a) 1 and 2 only
- b) 1, 2 and 4 only
- c) 1, 2 and 3 only
- d) 1, 2, 3 and 4

**Q.49) Solution (d)**

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**Q.50) Consider the following statements with respect to Dark Web:**

1. Deep Web is the area of the Internet which is not accessible through search engines.
2. The dark web forms a small part of the deep web.
3. The dark web is the World Wide Web content that exists on darknets, overlay networks which use the public Internet but require specific software, configurations or authorization to access.

**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

**Q.50) Solution (d)**

Deep Web is the area of the Internet which is not accessible through search engines.

**Hence Statement 1 is correct.**

The dark web forms a small part of the deep web.

**Hence Statement 2 is correct.**

The dark web is the World Wide Web content that exists on darknets, overlay networks which use the public Internet but require specific software, configurations or authorization to access.

**Hence Statement 3 is correct.**

**Q.51) Consider the following statements:**

1. Institute of Nano Science & Technology (INST) is an autonomous institute of the Department of Science and Technology (DST).
2. INST has developed a nanotechnology-based industry-friendly and low-cost method for the production of antiepileptic drug 'Rufinamide'.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2



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### Q.51) Solution (d)

Institute of Nano Science & Technology (INST) is an autonomous institute of the Department of Science and Technology (DST).

**Hence Statement 1 is correct.**

INST has developed a nanotechnology-based industry-friendly and low-cost method for the production of antiepileptic drug 'Rufinamide'.

**Hence Statement 2 is correct.**

### Q.52) Consider the following statements regarding ICONSAT (International Conference on Nano Science and Technology):

1. ICONSAT is a biennial international conference.
2. ICONSAT is held under the aegis of International Association of Nanotechnology (IANT).

**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

### Q.52) Solution (a)

ICONSAT is a biennial international conference. It provides provides a global platform of interactions among eminent scientists to bring to fore the recent advances in the area of nanoscience and technology.

**Hence Statement 1 is correct.**

ICONSAT is held under the aegis of Nano Mission, Department of Science and Technology, Government of India.

**Hence Statement 2 is incorrect.**

### Q.53) Consider the following statements:



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1. Nanotechnology is the development and use of techniques to study physical phenomena and develop new devices and material structures in the physical size range of 1-10 nanometres (nm).
2. 1 nanometre is equal to one millionth of a meter.

**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

**Q.53) Solution (d)**

Nanotechnology is the development and use of techniques to study physical phenomena and develop new devices and material structures in the physical size range of 1-100 nanometres (nm).

**Hence Statement 1 is incorrect.**

1 nanometre is equal to one billionth of a meter.

**Hence Statement 2 is incorrect.**

**Q.54) Consider the following statements Indian Nanoelectronics Users Programme (INUP):**

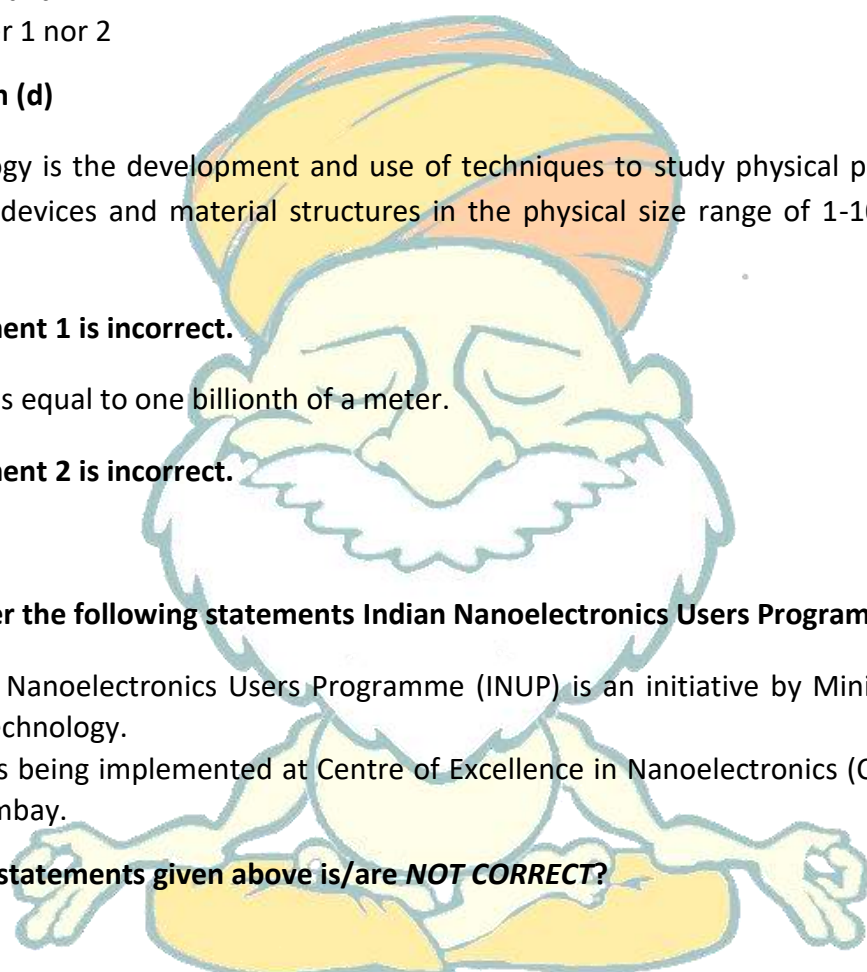
1. Indian Nanoelectronics Users Programme (INUP) is an initiative by Ministry of Science and Technology.
2. INUP is being implemented at Centre of Excellence in Nanoelectronics (CEN) at IISc and IIT Bombay.

**Which of the statements given above is/are *NOT CORRECT*?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Q.54) Solution (a)**

Indian Nanoelectronics Users Programme (INUP) is an initiative by Ministry of Electronics and Information Technology (MeitY).



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**Hence Statement 1 is incorrect.**

INUP is being implemented at Centre of Excellence in Nanoelectronics (CEN) at IISc and IIT Bombay.

**Hence Statement 2 is correct.**

**Q.55) Which of the following organizations has developed a Nano-technology based disinfectant spray 'ANANYA'**

- a) Council of Scientific and Industrial Research (CSIR).
- b) Institute of Nano Science & Technology (INST).
- c) Defence Institute of Advanced Technology (DIAT).
- d) Indian Institute of Science (IISc)

**Q.56) Solution (c)**

Defence Institute of Advanced Technology, a Deemed to be University, Pune has developed a Nano-technology based disinfectant spray to combat COVID-19 by disinfecting all types of surfaces.

**Q.56) Environment nanotechnology involves use of nanoscale material for addressing environmental concerns. Consider the following statements.**

1. NanoCO<sub>2</sub> harvester which can suck CO<sub>2</sub> from the atmosphere and convert it into methanol can be used as vehicular fuel.
2. The magnetically charged nanoparticles have been proved potent to remove heavy metals and dyes from the water bodies.
3. Due to nanoparticles' ability of long persistence, they may raise concerns such as bio-magnification.

**Which of the above statements is/are correct?**

- a) 1 and 2 only
- b) 1 and 3 only
- c) 1 only
- d) 1, 2 and 3

**Q.56) Solution (d)**

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NanoCO<sub>2</sub> harvester which can suck CO<sub>2</sub> from the atmosphere and convert it into methanol can be used as vehicular fuel.

**Hence Statement 1 is correct.**

The magnetically charged nanoparticles have been proved potent to remove heavy metals and dyes from the water bodies.

**Hence Statement 2 is correct.**

Due to nanoparticles' ability of long persistence, they may raise concerns such as bio-magnification.

**Hence Statement 3 is correct.**

**Q.57) Consider the following statements about Carbon Nano Tubes.**

1. Carbon nanotubes (CNTs) are an isotope of carbon.
2. Carbon Nanotubes are also known as Carbon fibers.
3. CNT metal matrix composites have excellent electrical properties and are used as reinforcement to metals in order to enhance their electrical properties.

**Which of the above statements is/are correct?**

- a) 1 and 3 only
- b) 2 and 3 only
- c) 3 only
- d) 1, 2 and 3

**Q.57) Solution (d)**

Carbon nanotubes (CNTs) are an isotope of carbon.

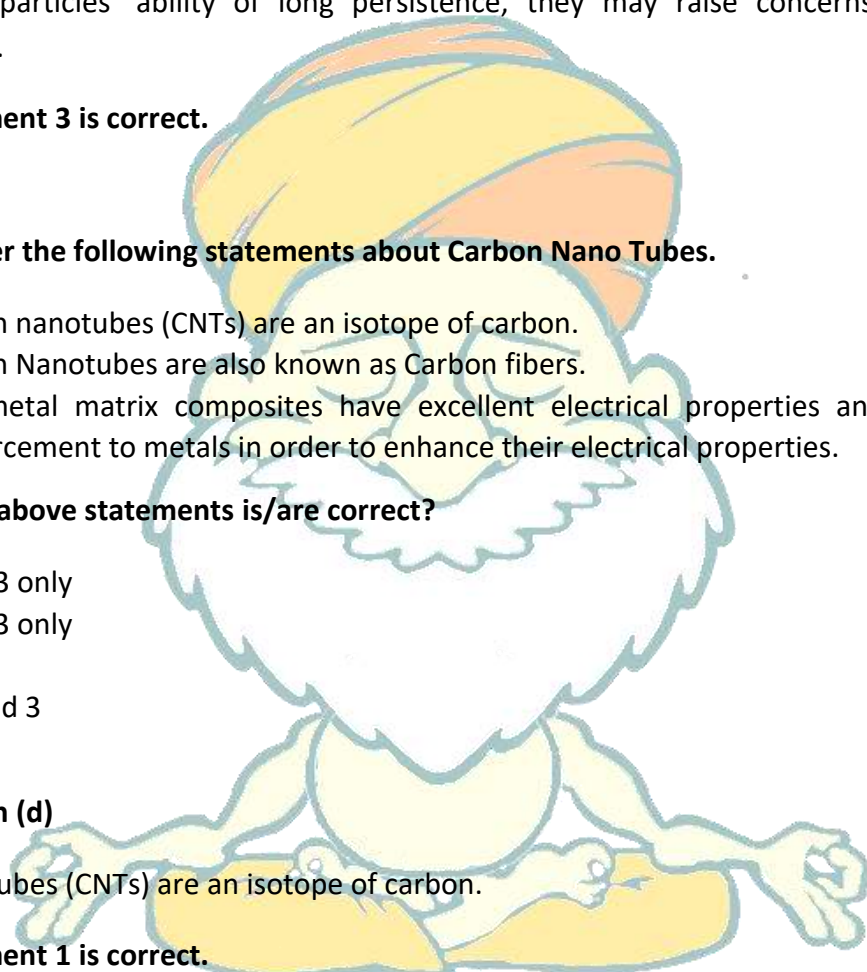
**Hence Statement 1 is correct.**

Carbon Nanotubes are also known as Carbon fibers.

**Hence Statement 2 is correct.**

CNT metal matrix composites have excellent electrical properties and are used as reinforcement to metals in order to enhance their electrical properties.

**Hence Statement 3 is correct.**



**Q.58) which of the following correctly defines BRABO:**

- a) India's first industrial robot
- b) India's first nanotechnology based computer
- c) India's first solar technology park
- d) India's first operating system

**Q.58) Solution (a)**

**Q.59) The most common water-based antifreeze solutions used in automobile engines are mixtures of:**

- a) Ethylene and Water
- b) Propylene and Water
- c) Ethylene glycol and Water
- d) Ethanol and Water

**Q.59) Solution (c)**

The most common water-based antifreeze solutions used in electronics cooling are mixtures of water and either ethylene glycol (EGW) or propylene glycol (PGW). The use of ethylene glycol has a longer history, especially in the automotive industry.

**Q.60) Process of endoscopy is used to see the internal organs. Which of the following phenomenon is responsible for working of endoscopy?**

- a) Reflection
- b) Total Internal reflection
- c) Scattering
- d) Diffraction

**Q.60) Solution (b)**

An endoscope is a bit like a bendy telescope a physician can use for seeing inside one of the body's cavities. Unlike a telescope, which is a very rigid tube, the part of an endoscope that enters a person's body is relatively flexible.

The light travels through endoscope with the help of Total internal reflection

