

(UPSC CSE Prelims GS Paper 1 Questions with detailed explanations)

Q.1) "Rapid Financing Instrument" and "Rapid Credit Facility" are related to the provisions of lending by which one of the following?

- a) Asian Development Bank
- b) International Monetary Fund
- c) United Nations Environment Programme Finance Initiative
- d) World Bank

Ans) b

Exp) Option b is the correct answer.

The Rapid Financing Instrument (RFI) provides rapid financial assistance, which is available to all member countries of IMF facing an urgent balance of payments need. The RFI was created by the International Monetary Fund (IMF).

The Rapid Credit Facility (RCF) provides rapid concessional financial assistance to low-income countries (LICs) facing an urgent balance of payments (BoP) need. The RCF was created under the IMF's Poverty Reduction and Growth Trust (PRGT).

Sources: <https://www.imf.org/en/About/Factsheets/Sheets/2016/08/02/19/55/Rapid-Financing-Instrument>

<https://www.imf.org/en/About/Factsheets/Sheets/2016/08/02/21/08/Rapid-Credit-Facility>

Q.2) With reference to the Indian economy, consider the following statements:

- 1. An increase in Nominal Effective Exchange Rate (NEER) indicates the appreciation of rupee.
- 2. An increase in the Real Effective Exchange Rate (REER) indicates an improvement in trade competitiveness.
- 3. An increasing trend in domestic inflation relative to inflation in other countries is likely to cause an increasing divergence between NEER and REER.

Which of the above statements are correct?

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

Ans) c

Exp) Option c is the correct answer.

The indices of Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) are used as indicators of external competitiveness.

Statement 1 is correct: NEER is the weighted average of bilateral nominal exchange rates of the home currency in terms of foreign currencies. An increase in Nominal Effective Exchange Rate (NEER) indicates the appreciation of rupee.

Statement 2 is incorrect: REER is the weighted average of nominal exchange rates adjusted for relative price differential between the domestic and foreign countries.

An increase in a nation's REER is an indication that its exports are becoming more expensive and its imports are becoming cheaper. Means, **it is losing its trade competitiveness.**

Statement 3 is correct: A real effective exchange rate (REER) is the NEER adjusted by relative prices or costs, typically captured in inflation differentials between the home economy and trading partners. **A nation's nominal effective exchange rate (NEER) when adjusted for inflation in the home country, equals its real effective exchange rate (REER). Higher the inflation higher will be divergence (difference between) NEER and REER.**

Source) https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=20020
https://www.indiabudget.gov.in/budget_archive/es2007-08/chapt2008/chap611.pdf
<https://www.investopedia.com/terms/r/reer.asp>

Q.3) With reference to the Indian economy, consider the following statements:

1. If the inflation is too high, Reserve Bank of India (RBI) is likely to buy government securities.
2. If the rupee is rapidly depreciating, RBI is likely to sell dollars in the market.
3. If interest rates in the USA or European Union were to fall, that is likely to induce RBI to buy dollars.

Which of the statements given above are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: If the inflation is too high, Reserve Bank of India (RBI) is likely to reduce the money supply in the economy to control inflation. Thus, **RBI sells the government securities so as to suck the excess of money supply from the economy and to control the inflation.**

Statement 2 is correct: The Reserve Bank of India intervenes in the currency market to support the rupee as a weak domestic unit can increase a country's import bill. There are a variety of methods by which RBI intervenes. It can intervene directly in the currency market by buying and selling dollars. **If RBI wishes to prop up rupee value, then it can sell dollar and when it needs to bring down rupee value, it can buy dollars.**

Statement 3 is correct: When the US raises its domestic interest rates, this tends to make India less attractive for the currency trade. As a result, some of the money may be expected to move out of the Indian markets and flow back to the US, therefore decreasing the value of India's currency against the US dollar. **Thus, if interest rates in the USA or European Union were to fall, the value of rupee against the dollar increases and that is likely to induce RBI to buy dollars.**

Source) <https://economictimes.indiatimes.com/markets/forex/so-how-can-a-rbi-rate-hike-help-stem-the-rupee-slide/articleshow/66071179.cms?from=mdr>
<https://intueriglobal.com/effect-of-the-us-federal-reserves-interest-rate-hike-on-indian-economy/>

Q.4) With reference to the "G20 Common Framework", consider the following statements:

1. It is an initiative endorsed by the G20 together with the Paris Club.
2. It is an initiative to support Low Income Countries with unsustainable debt.

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

Exp) Option c is the correct answer.

To address the problem of unsustainable debt levels, the G20 reached agreement in November 2020 on a Common Framework for Debt Treatments.

Statement 1 is correct: The Common Framework for debt treatment beyond the DSSI (Common Framework) is an initiative endorsed by the G20, together with the Paris Club.

Statement 2 is correct: The Common Framework for debt treatment beyond the DSSI (Common Framework) is an initiative to support, in a structural manner, Low Income Countries with unsustainable debt. The Common Framework considers debt treatment, on a case-by-case basis, driven by requests from eligible debtor countries. In response to a request for debt treatment, a Creditor Committee is convened. Negotiations are supported by the IMF and the World Bank, including through their Debt Sustainability Analysis.

Source) <https://www.cgdev.org/blog/fix-common-framework-debt-it-too-late>

<https://www.mef.gov.it/en/G20-Italy/common-framework.html>

<https://blogs.imf.org/2021/12/02/the-g20-common-framework-for-debt-treatments-must-be-stepped-up/>

Q.5) With reference to the Indian economy, what are the advantages of "Inflation-Indexed Bonds (IIBs)"?

1. Government can reduce the coupon rates on its borrowing by way of IIBs.
2. IIBs provide protection to the investors from uncertainty regarding inflation.
3. The interest received as well as capital gains on IIBs are not taxable.

Which of the statements given above are correct?

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

Ans) a

Exp) Option a is the correct answer.

Statement 1 is correct: As IIBs are G-Sec, they can be tradable in the secondary market like other G-Secs. G-Secs helps the Government to reduce the coupon rates on its borrowing. Like other G-Secs, coupon on IIBs would be paid on half yearly basis. Fixed coupon rate would be paid on the adjusted principal.

Statement 2 is correct: These instruments protect savings from inflation. It has been decided by the RBI to consider WPI for inflation protection in IIBs.

Statement 3 is incorrect: Extant tax provisions will be applicable on interest payment and capital gains on IIBs. There will be no special tax treatment for these bonds.

Source) <https://www.livemint.com/Money/Zju3yH3BynmauQ1FahnMaO/Taxes-deflate-inflation-bonds.html>

<https://m.rbi.org.in/Scripts/FAQView.aspx?Id=91>

<https://www.rbi.org.in/commonman/English/Scripts/FAQs.aspx?Id=711>

Q.6) With reference to foreign-owned e-commerce firms operating in India, which of the following statements is/are correct?

1. They can sell their own goods in addition to offering their platforms as market-places.
2. The degree to which they can own big sellers on their platforms is limited.

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) b

Exp) Option b is the correct answer.

After Walmart's \$16bn purchase of Flipkart in 2018, the rules for foreign-owned e-commerce firms were tightened further, with unexpected severity. Two restrictions predominate.

Statement 1 is incorrect: First, foreign firms are prevented from holding inventory or selling their own goods, which both Amazon and Walmart do in other markets. They can offer their platforms only as "marketplaces" for other buyers and sellers.

Statement 2 is correct: Second, the degree to which they can own big sellers on their platforms is limited, to prevent those sellers acting covertly on their behalf.

Source) <https://www.economist.com/business/2021/04/24/amazon-and-walmart-confront-indian-politics>

Q.7) Which of the following activities constitute real sector in the economy?

1. Farmers harvesting their crops
2. Textile mills converting raw cotton into fabrics
3. A commercial bank lending money to a trading company
4. A corporate body issuing Rupee Denominated Bonds overseas

Select the correct answer using the code given below:

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

Ans) a

Exp) Option a is the correct answer.

There are three sectors of any domestic economy:

- General government sector
- Real sector
- Financial sector

Options 1 and 2 are correct: The real sector of the economy consists of enterprises (non-financial corporations), households and non-profit institutions serving households. **Non-financial organizations comprise all resident units involved in production of market goods and non-financial services. Market goods and services are those goods and services that are sold at market prices (economically significant prices).**

Options 3 and 4 are incorrect: The financial sector consists of corporations principally engaged in financial intermediation or in auxiliary financial activities that contribute to financial intermediation.

Source)

https://www.cba.am/Storage/EN/publications/statistics/monetary_stat_manual/sectors.pdf

Q.8) Which one of the following situations best reflects "Indirect Transfers" often talked about in media recently with reference to India?

- a) An Indian company investing in a foreign enterprise and paying taxes to the foreign country on the profits arising out of its investment
- b) A foreign company investing in India and paying taxes to the country of its base on the profits arising out of its investment
- c) An Indian company purchases tangible assets in a foreign country and sells such assets after their value increases and transfers the proceeds to India
- d) A foreign company transfers shares and such shares derive their substantial value from assets located in India

Ans) d

Exp) Option d is the correct answer.

Indirect transfers refer to situations where when foreign entities own shares or assets in India, the shares of such foreign entities are transferred instead of a direct transfer of the underlying assets in India. The amendments made in the ITA in 2012 clarified that if a company is registered or incorporated outside India, its shares will be deemed to be or have always been situated in India if they derive their value substantially from the assets located in India. As a result, the persons who sold such shares of foreign companies before the enactment of the Act (i.e., May 28, 2012) also became liable to pay tax on the income earned from such sale.

Source) <https://prsindia.org/billtrack/the-taxation-laws-amendment-bill-2021>

https://www.nishithdesai.com/Content/document/pdf/Articles/171023_A_Indirect-Transfer-Taxation-in-India.pdf

<https://www.natlawreview.com/article/india-moves-to-revoke-retroactivity-vodafone-tax-end-to-saga>

Q.9) With reference to the expenditure made by an organisation or a company, which of the following statements is/are correct?

1. Acquiring new technology is capital expenditure.
2. Debt financing is considered capital expenditure, while equity financing is considered revenue expenditure.

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) a

Exp) Option a is the correct answer.

Statement 1 is correct: Capital expenditures (CapEx) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, plants, buildings, **technology**, or equipment.

Statement 2 is incorrect: When a company borrows money to be paid back at a future date with interest it is known as debt financing. Repayment of loan is an example of capital expenditure. **Equity financing** is the process of raising capital through the sale of shares. It **is an example of non-debt capital receipts**. Capital receipts are receipts that create liabilities or reduce financial assets. They also refer to incoming cash flows. **Examples of non-debt capital receipts:** Recovery of loans and advances, **disinvestment**, issue of bonus shares, etc.

Source)

[https://www.investopedia.com/terms/c/capitalexpenditure.asp#:~:text=Capital%20expenditures%20\(CapEx\)%20are%20funds,or%20investments%20by%20a%20company.](https://www.investopedia.com/terms/c/capitalexpenditure.asp#:~:text=Capital%20expenditures%20(CapEx)%20are%20funds,or%20investments%20by%20a%20company.)

<https://www.investopedia.com/terms/e/equityfinancing.asp>

<https://www.business-standard.com/about/what-is-capital-receipts>

<https://www.business-standard.com/about/what-is-capital-expenditure>

Q.10) With reference to the Indian economy, consider the following statements:

1. A share of the household financial savings goes towards government borrowings.
2. Dated securities issued at market-related rates in auctions form a large component of internal debt.

Which of the above statements is/are correct?

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

Ans) c

Exp) Option c is the correct answer.

Statement 1 is correct: Gross financial savings of households include monies saved in banks, provident funds, pension schemes, shares, insurance and in the form of currency, among other categories. **These savings form the pool of domestic finance for investments** which are crucial to job creation, and are currently critical as they will be crucial in deciding the pace of economic revival.

Deposits with banks are the single largest form of households' financial assets, followed by insurance funds, mutual funds and currency. Therefore, **any adverse movement in the household savings will have a significant bearing on banks, insurance companies and mutual/provident funds, who, in turn, are key investors in government securities.**

Statement 2 is correct: Internal debt constitutes over 93 per cent of the overall public debt. Internal loans that make up for the bulk of public debt are further divided into two broad categories – marketable and non-marketable debt.

The sources of public debt are dated government securities (G-Secs), treasury bills, external assistance, and short-term borrowings.

Source) https://www.business-standard.com/article/economy-policy/household-financial-savings-improve-on-sharp-decline-in-borrowings-rbi-120082501704_1.html

<https://www.financialexpress.com/opinion/how-critical-are-household-savings-for-government-borrowing/1542170/>

<https://www.business-standard.com/about/what-is-public-debt#:~:text=Internal%20loans%20that%20make%20up,%2C%20and%20short%2Dterm%20borrowings.>

Q.11) Consider the following statements:

1. Pursuant to the report of H.N. Sanyal Committee, the Contempt of Courts Act, 1971 was passed.
2. The Constitution of India empowers the Supreme Court and the High Courts to punish for contempt of themselves.
3. The Constitution of India defines Civil Contempt and Criminal Contempt.
4. In India, the Parliament is vested with the powers to make laws on Contempt of Court.

Which of the statements given above is/are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is correct: A committee was set up in 1961 under the chairmanship of the late H N Sanyal, the then additional solicitor general. The committee **made a comprehensive examination of the law and problems relating to contempt of court** in the light of the position obtained in our own country and various foreign countries. Pursuant to the recommendations made by the H N Sanyal Committee, the Contempt of Courts Act, 1971 was passed.

Statement 2 is correct: The Supreme Court and the High Courts of India have been empowered with the power to penalize for Contempt of Court under **Articles 129 and 215** of the Constitution of India.

Statement 3 is incorrect: The **Constitution of India does not define Civil Contempt and/or Criminal Contempt.**

Statement 4 is correct: **Article 142 (2)** of the Indian Constitution clearly states that “subject to the provisions of **any law made on this behalf by Parliament**” the Supreme Court shall have all and every

power to make any order on the punishment of any contempt of itself. Thus, the parliament is vested with powers to make laws on Contempt of Court.

Sources: <https://www.legalserviceindia.com/article/1255-Contempt-of-Court.html>

<https://lawcommissionofindia.nic.in/reports/Report274.pdf> (Page 5 and 6)

Q.12) With reference to India, consider the following statements:

1. Government law officers and legal firms are recognised as advocates, but corporate lawyers and patent attorneys are excluded from recognition as advocates.
2. Bar Councils have the power to lay down the rules relating to legal education and recognition of law colleges.

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

Exp) Option b is the correct answer.

Statement 1 is incorrect: Corporate Lawyers, as well as patent attorneys, are too recognized as lawyers and there's no prohibition on their recognition as lawyers.

Statement 2 is correct: The Bar Council of India visits and inspects Universities/Law colleges in the country as part of its statutory function of promoting legal education and laying down standards in consultation with the Universities in India and the State Bar Councils. The Bar Council of India is a **statutory body established under section 4 of the Advocates Act 1961** that regulates the legal practice and legal education in India.

Sources: <http://www.barcouncilofindia.org/wp-content/uploads/2010/05/BCIRulesPartIV.pdf>

<http://www.barcouncilofindia.org/about/legal-education/>

Q.13) Consider the following statements:

1. A bill amending the Constitution requires a prior recommendation of the President of India.
2. When a Constitution Amendment Bill is presented to the President of India, it is obligatory for the President of India to give his/her assent.
3. A Constitution Amendment Bill must be passed by both the Lok Sabha and the Rajya Sabha by a special majority and there is no provision for joint sitting.

Which of the statements given above are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: Constitution Amendment Bill can be introduced either by a minister or by a private member and does not require prior permission from the President.

Statement 2 is correct: The 24th Amendment of the Indian Constitution amended Article 368 to provide expressly that Parliament has the power to amend any provision of the Constitution. **The amendment further made it obligatory for the President to give his assent** when a Constitution Amendment Bill was presented to him.

Statement 3 is correct: Article 368 of the Indian constitution requires that the constitution of India can be amended by both houses of parliament by a 2/3 majority(special majority). In case of

disagreement between both houses, there is no provision to summon a joint session of parliament. The reasoning behind this is so as to not let the running government's majority in Lok Sabha undermine the Rajya Sabha in a joint sitting.

Sources: Indian Polity by Laxmikanth, 6th Edition, Chapter-10

http://164.100.47.194/loksabha/writereaddata/Abstract/constitution_amendment_bills.pdf

Q.14) Consider the following statements:

1. The Constitution of India classifies the ministers into four ranks viz. Cabinet Minister, Minister of State with Independent Charge, Minister of State and Deputy Minister.
2. The total number of ministers in the Union Government, including the Prime Minister, shall not exceed 15 percent of the total number of members in the Lok Sabha.

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

Exp) Option b is the correct answer.

Statement 1 is incorrect: There is no classification in the Constitution of India for the Council of Ministers. **Article 74 provides that there shall be a Council of Ministers with the Prime Minister** at the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice.

Statement 2 is correct: The **Constitution (91st Amendment) Act, 2003 made Amendment in the Article 75.** According to this amendment, the **total number of ministers, including the Prime Minister, in the COM shall not exceed 15% of the total strength of the Lok Sabha.**

Sources:

<https://legislative.gov.in/sites/default/files/amend91.pdf>

Indian Polity by Laxmikanth, 6th Edition, Chapter-15

Q.15) Which of the following is/are the exclusive power(s) of Lok Sabha?

1. To ratify the declaration of Emergency
2. To pass a motion of no-confidence against the Council of Ministers
3. To impeach the President of India

Select the correct answer using the code given below:

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: The proclamation of Emergency **must be approved by both the Houses of Parliament** within one month from the date of its issue. If approved by both the Houses of Parliament, the emergency continues for six months, and can be extended to an indefinite period with an approval of the Parliament for every six months.

Statement 2 is correct: **Article 75 (3)** provides clearly that the **Council of Ministers shall be collectively responsible to the House of the People.** So, only Lok Sabha can pass a no-confidence motion against the Council of Ministers.

Statement 3 is incorrect: As per Article 61, when a President is to be impeached for violation of the Constitution, the charges can be initiated by either House of Parliament. The impeachment resolution needs to be passed by a majority of two-thirds of the total membership in each house. Thus, it is not an exclusive power of the Lok Sabha.

Sources: Indian Polity by Laxmikanth, 6th Edition, Chapter-16 & Chapter-22
<https://ncert.nic.in/textbook/pdf/keps205.pdf>

Q.16) With reference to anti-defection law in India, consider the following statements:

1. The law specifies that a nominated legislator cannot join any political party within six months of being appointed to the House.
2. The law does not provide any time-frame within which the presiding officer has to decide a defection case.

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

Exp) Option b is the correct answer.

Statement 1 is incorrect: A nominated member of a House shall be disqualified for being a member of the House if he joins any political party after the expiry of six months from the date on which he takes his seat. Thus he/she is free to join any political party within six months and would not be disqualified for the same.

Statement 2 is correct: The law does not specify a time period for the Presiding Officer to decide on a disqualification plea under the Tenth Schedule.

Source <https://prsindia.org/theprsblog/the-anti-defection-law-explained>
<https://www.mea.gov.in/Images/pdf1/S10.pdf>

Q.17) Consider the following statements:

1. Attorney General of India and Solicitor General of India are the only officers of the Government who are allowed to participate in the meetings of the Parliament of India.
2. According to the Constitution of India, the Attorney General of India submits his resignation when the Government which appointed him resigns.

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

Exp) Option d is the correct answer.

Statement 1 is incorrect: The Attorney General for India is appointed by the President of India under Article 76 of the Constitution and holds office during the pleasure of the President. In the performance of his duties, he has the right to audience in all Courts in India as well as the right to take part in the proceedings of Parliament without the right to vote. Solicitor General of India has no such privilege.

Statement 2 is incorrect: As per Article 76, the Attorney General shall hold office during the pleasure of the President and shall receive such remuneration as the President may determine Conduct of Government Business. There is no mention in the Indian Constitution of the need for him to submit his resignation when the Government which appointed him resigns.

Sources: Indian Polity by Laxmikanth, 6th Edition, Chapter-52

Q.18) With reference to the writs issued by the Courts in India, consider the following statements:

1. Mandamus will not lie against a private organisation unless it is entrusted with a public duty.
2. Mandamus will not lie against a Company even though it may be a Government Company.
3. Any public minded person can be a petitioner to move the Court to obtain the writ of Quo Warranto.

Which of the statements given above are correct?

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

Ans) c

Exp) Option c is the correct answer.

Statement 1 is correct: Mandamus is a command issued by the court to a public official asking him to perform his official duties that he has failed or refused to perform. It **can also be issued against any public body, a corporation, an inferior court, a tribunal, or a government** for the same purpose. It is **usually not usable against a private entity unless it is entrusted with a public duty.**

Statement 2 is incorrect: As explained above, Mandamus can be used against a government corporation and/or company.

Statement 3 is correct: Quo Warranto is issued by the court to enquire into the legality of the claim of a person to a public office. Hence, it prevents illegal usurpation of public office by a person. Unlike the other writs, **this can be sought by any interested person** and not necessarily by the aggrieved person.

Sources: Indian Polity by Laxmikanth, 6th Edition, Chapter-7

Q.19) With reference to Ayushman Bharat Digital Mission, consider the following statements:

1. Private and public hospitals must adopt it.
2. As it aims to achieve universal health coverage, every citizen of India should be part of it ultimately.
3. It has seamless portability across the country.

Which of the statements given above is/are correct?

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

Ans) b

Exp) Option b is the correct answer.

Ayushman Bharat Digital Mission aims to provide digital health IDs for all Indian citizens to help hospitals, insurance firms, and citizens access health records electronically when required.

Statement 1 is incorrect: Ayushman Bharat Digital Mission (ABDM) has not made it mandatory for adoption by private and public hospitals. Its adoption so far would be voluntary. Participation in ABDM is voluntary including for citizens. Participation of a healthcare facility or an institution is also voluntary and shall be taken by the respective management (government or private management).

Statement 2 is incorrect: The aim of the Ayushman Bharat Digital Mission is to facilitate the ease of access to medical records and it is not been mandated to have every citizen as its part though the facility is available to every citizen on a consent basis.

Statement 3 is correct: ABDM will have a national footprint and will enable seamless portability across the country through a Health ID – Personal Health Identifier.

Sources: <https://ndhm.gov.in/abdm-components>

<https://indianexpress.com/article/india/narendra-modi-ayushman-bharat-digital-mission-launch-7536035/>

<https://vikaspedia.in/health/health-care-innovations/ayushman-bharat-digital-mission-health-care-innovations-1/ayushman-bharat-digital-mission>

<https://abdm.gov.in/faq>

Q.20) With reference to Deputy Speaker of Lok Sabha, consider the following statements:

1. As per the Rules of Procedure and Conduct of Business in Lok Sabha, the election of Deputy Speaker shall be held on such date as the Speaker may fix.
2. There is a mandatory provision that the election of a candidate, as Deputy Speaker of Lok Sabha shall be from either the principal opposition party or the ruling party.
3. The Deputy Speaker has the same power as of the Speaker when presiding over the sitting of the House and no appeal lies against his rulings.
4. The well-established parliamentary practice regarding the appointment of Deputy Speaker is that the motion is moved by the Speaker and duly seconded by the Prime Minister.

Which of the statements given above are correct?

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

Ans) a

Exp) Option a is the correct answer.

Statement 1 is correct: The date of election of the Deputy Speaker is fixed by the Speaker. While on the other hand date of election of the Speaker is fixed by the President.

Statement 2 is incorrect: There is no mandatory provision that the election of a candidate, as Deputy Speaker of Lok Sabha, shall be from either the principal opposition party or the ruling party. It is only by convention that the position of Deputy Speaker is offered to the opposition party in India.

Statement 3 is correct: In case of the absence of the Speaker, the Deputy Speaker presides over the sessions of the Lok Sabha and conducts the business in the house. The Deputy Speaker has the same power as the Speaker when presiding over the sitting of the House.

Statement 4 is incorrect: The Deputy Speaker is also elected by the Lok Sabha from amongst its members right after the election of the Speaker has taken place. There is no provision and or established practice of moving the motion for his election by the speaker and it is seconded by the prime minister.

Sources: http://164.100.47.194/loksabha/rules/RULES-2010-P-FINAL_1.pdf

Q.21) Among the following crops, which one is the most important anthropogenic source of both methane and nitrous oxide?

- a) Cotton
- b) Rice
- c) Sugarcane
- d) Wheat

Ans) b

Exp) Option b is the correct answer.

Methane and nitrous oxide are important **greenhouse gases**. They contribute to global warming. Important anthropogenic sources of biogenic methane are **wet rice fields**, cattle, animal waste, landfills and biomass burning.

Flooded rice cultivation has been identified as one of the leading global agricultural sources of anthropogenic methane (CH₄) emissions. Furthermore, it has been estimated that global rice production is responsible for 11% of total anthropogenic CH₄ emissions.

Paddies are a potential **source of anthropogenic nitrous oxide (N₂O) emission as well**. In paddies, both the **soil and the rice plants emit N₂O** into the atmosphere. The rice plant in the paddy is considered to act as a channel between the soil and the atmosphere for N₂O emission.

Source:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7076488/#:~:text=Paddies%20are%20a%20potential%20source,for%20N2O%20emission>.

<https://www.intechopen.com/chapters/49649>

Q.22) “System of Rice Intensification” of cultivation, in which alternate wetting and drying of rice fields is

practised, results in:

1. Reduced seed requirement
2. Reduced methane production
3. Reduced electricity consumption

Select the correct answer using the code given below:

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

Ans) d

Exp) **Option d is the correct answer.**

The System of Rice Intensification involves cultivating rice with as much organic manure as possible. It employs

- young seedlings planted singly at wider spacing in a square pattern; and
- with intermittent irrigation that keeps the soil moist but not inundated, and
- frequent inter cultivation with weeder that actively aerates the soil.

System of Rice Intensification (SRI) includes a method called Alternate Wetting and Drying (AWD) which is a form of controlled or intermittent irrigation of the rice crops.

SRI methods have the following benefits and impacts, in general, compared to conventional methods of paddy cultivation:

- To increase paddy yields usually by 20-50% and sometimes up to 100%
- **It reduces required seeds for transplanting by 60-80% (Hence Option 1 is correct);**
- **The electricity consumption will be less as it enables** reduce use of chemical fertilizers and agrichemicals and reduced use of irrigation water by 25-50% (**Hence Option 3 is correct**);

Option 2 is correct. By stopping flooding and relying mostly on organic fertilization, **methane emissions are greatly reduced without offsetting increases in nitrous oxide**. Also, **less carbon dioxide** is generated due to reduced reliance on and transport of manufactured inputs. Oxford researchers in India found 30% reduction in net greenhouse gas emissions with SRI, compared with current practice, and more than 50% reduction in greenhouse gas emissions per kilogram of rice produced.

Source: <https://news.cornell.edu/stories/2021/02/system-rice-intensification-recognized-climate-policy-impact#:~:text=methane%20emissions%20are%20greatly%20reduced>

http://sri.ciifad.cornell.edu/countries/japan/extmats/JSRI_Guideline0312.pdf

<https://www.icar->

[iiir.org/Publications/Integrated%20assessment%20of%20system%20of%20rice%20intensification%20vs%20conventional%20method%20of%20transplanting%20for%20economic%20benefit%20energy%20efficiency%20and%20lower%20global%20warming%20potential%20in%20India%20\(4\).pdf](https://www.icar-iiir.org/Publications/Integrated%20assessment%20of%20system%20of%20rice%20intensification%20vs%20conventional%20method%20of%20transplanting%20for%20economic%20benefit%20energy%20efficiency%20and%20lower%20global%20warming%20potential%20in%20India%20(4).pdf)

Q.23) Which one of the following lakes of West Africa has become dry and turned into a desert?

- a) Lake Victoria
- b) Lake Faguibine
- c) Lake Oguta
- d) Lake Volta

Ans) b

Exp) Option b is the correct answer.

Lake Faguibine in northern Mali(**in Africa started to disappear after catastrophic droughts in the 1970s.** Over several years, droughts in the 1970s dried up the lake..

The lake was once one of the largest in West Africa used to be fed by annual flooding from the Niger River.

The Lake Faguibine System, four interlinked lakes west of Timbuktu in Mali, was historically one of Mali's most fertile areas.

Source: <https://www.unep.org/news-and-stories/story/benefits-galore-if-malis-lake-faguibine-system-were-revived-0>

<https://earthobservatory.nasa.gov/images/8991/drying-of-lake-faguibine-mali>

<https://www.africanews.com/2021/10/27/climate-change-clears-mali-s-lake-faguibine-displaces-population//>

Q.24) Gandikota canyon of South India was created by which one of the following rivers?

- a) Manjira
- b) Pennar
- c) Cauvery
- d) Tungabhadra

Ans) c

Exp) Option c is the correct answer.

Gorges are formed when rivers erode through gigantic rock formations over thousands of years.

Gandikota is a small village in the Kadapa district of Andhra Pradesh.

The swift flowing waters of **River Pennar** cut through the granite rocks near the village of Gandikota, naturally eroding the rock and forming a deep valley. Gandikota got its name from 'gandi' the Telugu word for 'gorge'. **Pennar River streams from the Erramala hills.**

The **spectacular gorge** is famously adjudged as the **Grand Canyon of India.**

Q.25) Consider the following pairs:

Peak	Mountains
1. Namcha Barwa	Garhwal Himalaya
2. Nanda Devi	Kumaon Himalaya
3. Nokrek	Sikkim Himalaya

Which of the pairs given above is/are correctly matched?

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

Ans) b

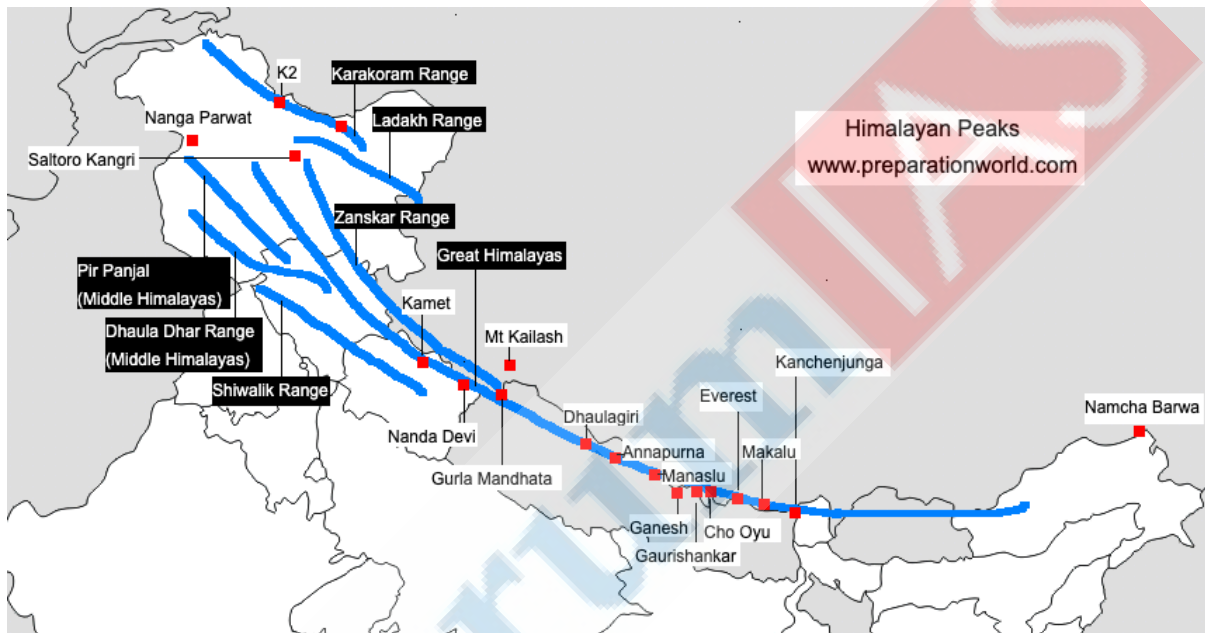
Exp) Option b is the correct answer.

Pair 1 is incorrectly matched. Namcha Barwa is not situated in Garhwal Himalaya.

Namcha Barwa is considered as the Eastern point of the Himalayas. It is located on the extreme east of the Indian state of Arunachal Pradesh. The height of Namcha Barwa is about 7782 m. Brahmaputra river takes a U turn on reaching Namcha Barwa.

Pair 2 is correctly matched. The part of the Himalayas lying between Satluj and Kali rivers is known as Kumaon Himalayas.

Nanda Devi is the second highest mountain in India and the highest entirely within the country (Kangchenjunga being on the border of India and Nepal). It is part of the Kumaon Himalayas, and is located in the state of Uttarakhand, between the Rishiganga valley on the west and the Goriganga valley on the east. The surrounding Nanda Devi National Park was declared a UNESCO World Heritage Site in 1988.



Pair 3 is incorrectly matched. Nokrek is not situated in Sikkim Himalaya. **Nokrek is the highest peak in West Garo Hills of Meghalaya.**

Source: <https://ncert.nic.in/textbook/pdf/iess102.pdf> PHYSICAL FEATURES OF INDIA page 8

<https://ncert.nic.in/textbook/pdf/kegy103.pdf> DRAINAGE SYSTEM page 27

<https://www.himalayanwonders.com/content/peaks/nanda-devi.html?selocation=IN#:~:text=part%20of%20the-,Kumaon%20Himalayas%2C,-and%20is%20located>

<https://www.britannica.com/place/Kumaun-Himalayas#ref1028016>

<https://en.unesco.org/biosphere/aspac/nokrek>

<https://www.meghalayatourism.in/destinations/nokrek-biosphere-reserve/>

Q.26) The term "Levant" often heard in the news roughly corresponds to which of the following regions?

- Region along the eastern Mediterranean shores
- Region along North African shores stretching from Egypt to Morocco
- Region along Persian Gulf and Horn of Africa
- The entire coastal areas of Mediterranean Sea

Ans) a

Exp) Option a is the correct answer.

Levant, originally meant 'the East' or 'Mediterranean lands east of Italy'. It is borrowed from the French **levant** 'rising', referring to the rising of the sun in the east, or the point where the sun rises. Historically, the region along the eastern Mediterranean shores, roughly corresponding to modern-day Israel, Jordan, Lebanon, Syria, and certain adjacent areas.



Source: <https://www.britannica.com/place/Levant>

<https://www.mei.edu/publications/untapped-potential-levant-union>

Q.27) Consider the following countries:

1. Azerbaijan
2. Kyrgyzstan
3. Tajikistan
4. Turkmenistan
5. Uzbekistan

Which of the above have borders with Afghanistan?

- a) 1, 2 and 5 only
- b) 1, 2, 3 and 4 only
- c) 3, 4 and 5 only
- d) 1, 2, 3, 4 and 5

Ans) c

Exp) Option c is the correct answer.

Afghanistan, officially the Islamic Republic of Afghanistan, is a mountainous landlocked country in southern Central Asia. It borders **Tajikistan, Turkmenistan, and Uzbekistan to the north, Iran to the west, Pakistan to the east and south.**



Source: <https://www.britannica.com/place/Afghanistan>

Q.28) With reference to India, consider the following statements:

1. Monazite is a source of rare earths.
2. Monazite contains thorium.
3. Monazite occurs naturally in the entire Indian coastal sands in India.
4. In India, Government bodies only can process or export monazite."

Which of the statements given above are correct?

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

Ans) b

Exp) Option b is the correct answer.

Monazite is a brown crystalline mineral consisting of cerium, lanthanum, other rare earth elements, and thorium. Monazite usually occurs in small, isolated crystals or grains that are resistant to weathering and become concentrated in soils.

Statement 1 and 2 are correct.

Monazite is a major source of **rare earths and thorium**.

It yields a number of rare-earth elements, such as neodymium and praseodymium. Both of these are in demand internationally for making high-performance rare-earth magnets (components of power wind turbines, electric vehicles and robotics)

Statement 3 is incorrect. Though monazite is found in most coastal areas of India. It is questionable to be found along entire coast.

The main mines are found along the coasts of southern India in Kerala, Tamil Nadu and in Orissa.

Statement 4 is correct. Export of monazite without a license from AERB is a violation of the Atomic Energy (Radiation Protection) Rules 2004. Indian Rare Earths Limited (IREL), a wholly owned Public Sector Undertaking of the Government of India (GOI) under DAE, is the only entity which has been permitted to produce and process monazite, and handle it for domestic use as well as for export.

Source: https://ibm.gov.in/writereaddata/files/10012020172151RareEarth_2019_AR.pdf page24-2

<https://dae.gov.in/writereaddata/parl/budget2016/rsus2084.pdf>

https://www.business-standard.com/article/companies/countrys-only-monazite-processing-plant-goes-on-stream-115100900778_1.html

Q.29) In the northern hemisphere, the longest day of the year normally occurs in the :

- a) First half of the month of June
- b) Second half of the month of June
- c) First half of the month of July
- d) Second half of the month of July

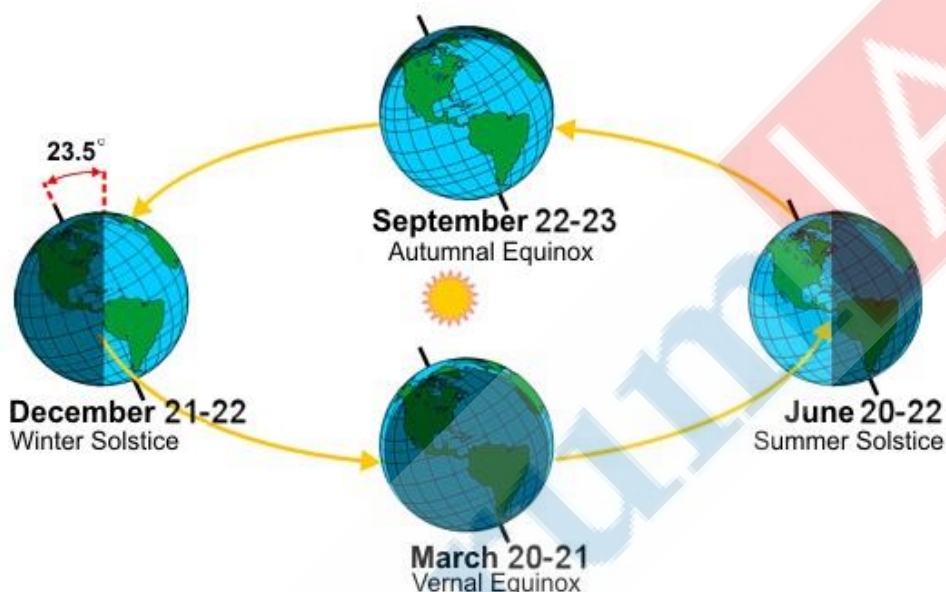
Ans) b

Exp) Option b is the correct answer.

In the northern hemisphere, the longest day of the year is called the **summer solstice**.

The maximum amount of sunlight received by the Northern Hemisphere during this time is usually on **June 20, 21 or 22**.

The longest day of 2021 for those living north of the Equator is June 21. This day is referred to as the summer solstice, the longest day of the summer season. It occurs when the sun is directly over the Tropic of Cancer, or more specifically right over 23.5 degree north latitude.



Source: <https://indianexpress.com/article/explained/summer-solstice-explained-why-june-21-will-be-the-longest-day-of-the-year-in-northern-hemisphere-7367636/#:~:text=in%20Northern%20Hemisphere-,Summer%20solstice%3A%20Why%20June%202021%20will%20be%20the%20longest%20day,the%20year%20in%20Northern%20Hemisphere>

Q.30) Consider the following pairs:

Wetland/Lake	Location
1. Hokera Wetland	Punjab
2. Renuka Wetland	Himachal Pradesh
3. Rudrasagar Lake	Tripura
4. Sasthamkotta Lake	Tamil Nadu

How many pairs given above are correctly matched?

- a) Only one pair
- b) Only two pairs
- c) Only three pairs
- d) All four pairs

Ans) b

Exp) Option b is the correct answer.

Pair 1 is incorrectly matched. Hokera Wetland is located in Jammu and Kashmir, not Punjab. Hokera wetland is about 10 km from Srinagar. It is a natural perennial wetland contiguous to the Jhelum basin.

Pair 2 is correctly matched. Renuka Wetland is the largest natural lake in **Himachal Pradesh.**

It is a natural wetland with freshwater springs and inland subterranean karst formations, fed by a small stream flowing from the lower Himalayan out to the Giri river.

Pair 3 is correctly matched. Rudrasagar Lake, also known as Rudijala, is a lake located in **Melaghar, Tripura.**

The lake is designated as a **Ramsar site.** A lowland sedimentation reservoir in the northeast hills, fed by three perennial streams discharging to the River Gomti.

Pair 4 is incorrectly matched. Sasthamkotta is located in the Kollam district of Kerala, not Tamil Nadu. It is the **largest freshwater lake in Kerala** and has always been a centre of tourist activity.

Source: <https://rsis Ramsar.org/ris/1570>

<https://rsis Ramsar.org/ris/1212>

<https://www.keralatourism.org/destination/sasthamkotta-lake-kollam/40>

<https://rsis Ramsar.org/ris/1571>

https://himcoste.hp.gov.in/Wetland%20Authority/Renuka%20Wetland/Renuka_Home.aspx

<https://rsis Ramsar.org/ris/1572>

Q.31) Consider the following:

1. Aarogya Setu
2. COWIN
3. DigiLocker
4. DIKSHA

Which of the above are built on to open-source digital platforms?

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

Ans) d

Exp) Option d is the correct answer.

"Closed source" software has source code that **only the person, team, or organization who created it** and maintains exclusive control over. But Open source software is software with source code that **anyone can inspect, modify, and enhance.**

Some examples of public services being delivered through systems that use FOSS building blocks, including Aadhaar, GSTN, and **the DigiLocker.**

Many other solutions launched by the government including **Digilocker, Diksha, Aarogya Setu,** the Covid-19 vaccination platform **CoWIN** have also been built on top of open-source digital platforms.

Source: <https://blog.forumias.com/free-and-open-source-software-foss-has-great-potential-in-government-applications/>

<https://www.thehindu.com/sci-tech/technology/aarogya-setu-app-is-now-open-source-what-does-it-mean/article31689459.ece>

<https://indianexpress.com/article/opinion/columns/free-and-open-source-software-linux-user-groups-aadhaar-gstn-digilocker-7477122/>

https://www.business-standard.com/article/technology/game-changer-making-sense-of-open-source-software-in-digital-economy-121071100882_1.html

Q.32) With reference to Web 3.0, consider the following statements:

1. Web 3-0 technology enables people to control their own data.

2. In Web 3.0 world, there can be blockchain based social networks.
3. Web 3-0 is operated by users collectively rather than a corporation.

Which of the statements given above are correct?

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

Ans) d

Exp) Option d is the correct answer.

Web 3.0 is the next version of the internet, where services will run on blockchain. It is a decentralised internet that runs on a public blockchain, which is also used for cryptocurrency transactions.

Statement 1 is correct: Presently, only centralized repositories are the ones that own user data and profit from it. In Web 3.0, **users can own and be properly compensated for their time and data**. In **Web 3.0 people will control their own data**.

Statement 2 is correct: Web 3.0 will be **permissionless and democratic**. For example **Twitter** will not be able to censor posts and Facebook will not be able to maintain a database of billions of users that can be potentially used to influence elections. Thus people can **maintain blockchain based social networks in Web 3.0**.

Statement 3 is correct: Web3 will mean that sharing photos, communicating with friends and buying things online will no longer be synonymous with Big Tech companies but be done through a multitude of small competing services on the blockchain. It means that all the value that's created can be shared amongst more people, **rather than just the owners, investors and employees**. Thus it is **operated by users collectively rather than corporation**.

Source: <https://blog.forumias.com/web-3-0-the-future-of-internet-explained-pointwise/>
<https://www.npr.org/2021/11/21/1056988346/web3-internet-jargon-or-future-vision>

Q.33) With reference to "Software as a Service (SaaS)", consider the following statements:

1. SaaS buyers can customise the user interface and can change data fields.
2. SaaS users can access their data through their mobile devices.
3. Outlook, Hotmail and Yahoo! Mail are forms of SaaS.

Which of the statements given above are correct?

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

Ans) d

Exp) Option d is the correct answer.

Software-as-a-Service (SaaS) is a software licensing model. It allows access to software on a subscription basis using external servers.

Statement 1 is correct: Today's web-based software is flexible enough to be modified for specific business uses but also individual users. Buyers can **customize the user interface (UI)** to change the look and feel of the program, as well as **modify specific areas, such as data fields, to alter what data appears**. Several business process features can also be turned off and on at will.

Statement 2 is correct: SaaS allows **each user to access programs** via the Internet. The user **need not install the software** on his/her computer. Thus users can access data **through their mobile devices**. SaaS allows users to access the software through a web browser from multiple locations. He or she can have remote desktop software and can work from home

Statement 3 is correct: Outlook, Hotmail or Yahoo! Mail are forms of SaaS. With these services, a user log into their account over the Internet, often from a web browser. The email software is located on the service provider's network and your messages are stored there as well. You can access your email and stored messages from a web browser on any computer or Internet-connected device

Source: <https://indianexpress.com/article/upsc-current-affairs/upsc-essentials/upsc-essentials-one-word-a-day-saas-7921343/>

<https://www.softwareadvice.com/resources/saas-10-faqs-software-service/>

<https://blog.coursify.me/en/frequently-asked-questions-about-saas/>

Q.34) Which one of the following statements best reflects the idea behind the "Fractional Orbital Bombardment System" often talked about in media?

- a) A hypersonic missile is launched into space to counter the asteroid approaching the Earth and explode it in space.
- b) A spacecraft lands on another planet after making several orbital motions.
- c) A missile is put into a stable orbit around the Earth and deorbits over a target on the Earth.
- d) A spacecraft moves along a comet with the same speed and places a probe on its surface.

Ans) c

Exp) Option c is the correct answer.

The "Fractional Orbital Bombardment System" is seen in news recently because China deployed this technique in launching long March rocket. This technique allows it to propel an extremely maneuverable, nuclear-capable glider into orbit, allowing it to speed towards its target at hypersonic speed. The idea behind Fractional Orbital Bombardment System (FOBS) is, a **warhead is put into a stable orbit and it deorbits over the target**. If the target and the launch position is lined up and the warhead keeps going round, it will complete a circle

Source: <https://www.financialexpress.com/defence/chinas-fractional-orbital-bombardment-system-impact-on-indias-nuclear-deterrence-posture/2356471/>

Q.35) Which one of the following is the context in which the term "qubit" is mentioned?

- a) Cloud Services
- b) Quantum Computing
- c) Visible Light Communication Technologies
- d) Wireless Communication Technologies

Ans) b

Exp) Option b is the correct answer.

A qubit (or quantum bit) is the quantum mechanical analogue of a classical bit. **In classical computing the information is encoded in bits**, where each bit can have the value zero or one.

Just like a binary bit is the basic unit of information in classical (or traditional) computing, a qubit (or quantum bit) is the basic unit of information in quantum computing.

In quantum computing the information is encoded in qubits. A qubit is a two-level quantum system where the two basis qubit states are usually written as 0 and 1. A qubit can be in state 0 or 1 or (unlike a classical bit) in a linear combination of both states. The name of this phenomenon is superposition.

Source: <https://www.quantum-inspire.com/kbase/what-is-a-qubit/>

<https://azure.microsoft.com/en-us/overview/what-is-a-qubit/>

Q.36) Consider the following technologies:

1. Closed-circuit Television
2. Radio Frequency Identification
3. Wireless Local Area Network

Which of the above are considered communication Short-Range devices/technologies?

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

Ans) d

Exp) Option d is the correct answer.

Short Range Devices (SRD) are radio devices that offer a low risk of interference with other radio services, usually because their transmitted power, and hence their range, is low. The definition 'Short Range Device' may be applied to many different types of wireless equipment, including various forms of:

1. Access control (including door and gate openers)
2. Alarms and movement detectors
3. **Closed-circuit television (CCTV)**
4. Cordless audio devices, including wireless microphones
5. Industrial control
6. **Local Area Networks**
7. Medical implants
8. Metering devices
9. Remote control
10. **Radio frequency identification (RFID)**
11. Road Transport Telematics
12. Telemetry.

Source: <https://www.etsi.org/technologies/short-range-devices?tmpl=component#:~:text=Short%20Range%20Devices%20%28SRD%29%20are%20radio%20devices%20that,type%20of%20wireless%20equipment%2C%20including%20various%20forms%20of%3A>

Q.37) Consider the following statements:

1. Biofilms can form on medical implants within human tissues.
2. Biofilms can form on food and food processing surfaces.
3. Biofilms can exhibit antibiotic resistance.

Which of the statements given above are correct?

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

Ans) d

Exp) Option d is the correct answer.

Biofilms are a collective of one or more types of microorganisms that can grow on many different surfaces. Microorganisms that form biofilms include bacteria, fungi and protists.

Statement 1 is correct: Biofilms are ubiquitous and they form on virtually all surfaces immersed in natural aqueous environment, e.g., water pipes, living tissue, tooth surface, **implanted medical devices**, dental implants, etc.

Statement 2 is correct: Diverse microorganisms are able to grow on food matrixes and along food industry infrastructures. Thus biofilm can form on food and food processing surfaces. For example **escherichia coli**, **Salmonella enterica** etc. Salmonella enterica contaminates a food pipeline biofilm, may induce massive outbreaks and even death in children and elderly.

Statement 3 is correct: A biofilm is a structured consortium of bacteria embedded in a self-produced polymer matrix consisting of **polysaccharide, protein and DNA**. Bacterial biofilms show **increased tolerance to antibiotics and disinfectant chemicals** as well as resisting phagocytosis and other components of the body's defence system. Thus they cause chronic infections.

Source: <https://www.frontiersin.org/articles/10.3389/fmicb.2018.00898/full>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5949339/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3636945/>

<https://pubmed.ncbi.nlm.nih.gov/20149602/>

Q.38) Consider the following statements in respect of probiotics:

1. Probiotics are made of both bacteria and yeast.
2. The organisms in probiotics are found in foods we ingest but they do not naturally occur in our gut.
3. Probiotics help in the digestion of milk sugars.

Which of the statements given above is/are correct?

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

Ans) c

Exp) Option c is the correct answer.

Probiotics are live microorganisms that are intended to have health benefits when consumed or applied to the body. They can be found in yogurt and other fermented foods, dietary supplements, and beauty products.

Statement 1 is correct: Probiotics are a combination of **live beneficial bacteria and/or yeasts**.

Statement 2 is incorrect: Probiotics **live naturally in your body**. **L. acidophilus is a probiotic bacteria that naturally occurs in the human gut**. The most common place linked to beneficial microbes is your gut (mostly large intestines), but there are other places like mouth, urinary tract, skin, lungs etc where these probiotics are found.

Statement 3 is correct: Yogurt is a well-known food source of probiotics. Certain strains of bacteria in yogurt have β -D-galactosidase, which is an enzyme that helps **break down lactose in dairy products into the sugars glucose and galactose**. Thus, Probiotics help in the digestion of milk sugars.

Source: <https://www.nccih.nih.gov/health/probiotics-what-you-need-to-know>

<https://my.clevelandclinic.org/health/articles/14598-probiotics>

<https://www.medicalnewstoday.com/articles/323314>

<https://www.newlifenutrition.com.au/food-intolerances-and-allergies/lactose-intolerance/is-yakult-good-for-lactose-intolerance/>

https://r.search.yahoo.com/_ylt=AwrX18wiiZxiGGYazyO7HAX;_ylu=Y29sbwNzZzMEcG9zAzEEdnRpZAMec2VjA3Nj/RV=2/RE=1654454691/RO=10/RU=https%3a%2f%2fwww.onhealth.com%2fcontent%2f1%2fprobiotic_foods%23%3a~%3atext%3dYogurt%2520is%2520a%2520well-known%2520food%2520source%2520of%2520probiotics%2520C%2cA%2520lack%2520of%2520this%2520enzyme%2520causes%2520lactose%2520malabsorption./RK=2/RS=i0AMY0xb_71Veu5YkivKlIX6Y24-

Q.39) In the context of vaccines manufactured to prevent COVID-19 pandemic, consider the following statements:

1. The Serum Institute of India produced COVID-19 vaccine named Covishield using mRNA platform.
2. Sputnik. V vaccine is manufactured using vector-based platform.
3. COVAXIN is an inactivated pathogen-based vaccine.

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: The Serum Institute of India produced COVID-19 vaccine named Covishield but not using mRNA platform. It has been prepared using **the viral vector platform**. In the vaccine, a chimpanzee adenovirus – ChAdOx1 – has been modified to enable it to carry the COVID-19 spike protein into the cells of humans. This cold virus is basically incapable of infecting the receiver, but can very well teach the immune system to prepare a mechanism against such viruses.

The same technology was used to prepare vaccines for viruses like Ebola.

Statement 2 is correct: Sputnik V, the world's first registered vaccine, is based on the human adenoviral **vector-based platform**. The gene from adenovirus, which causes the infection, is removed while a gene with the code of a protein from another virus spike is inserted.

Statement 3 is correct: Covaxin is an inactivated viral vaccine. It is developed with Whole-Virion Inactivated Vero Cell-derived technology. That is, it **contains inactivated viruses that cannot infect a person**, but still can teach the immune system to prepare a defence mechanism against the active virus.

Source: <https://www.theweek.in/news/health/2021/07/01/how-covishield-covaxin-sputnik-v-zycov-d-modernas-mrna-1273-differ-from-one-another.html>

<https://covid19.trackvaccines.org/country/india/>

<https://covid19.trackvaccines.org/types-of-vaccines/>

Q.40) If a major solar storm (solar flare) reaches the Earth, which of the following are the possible effects on the Earth?

1. GPS and navigation systems could fail.
2. Tsunamis could occur at equatorial regions.
3. Power grids could be damaged.
4. Intense auroras could occur over much of the Earth.
5. Forest fires could take place over much of the planet.
6. Orbits of the satellites could be disturbed.
7. Shortwave radio communication of the aircraft flying over polar regions could be interrupted.

Select the correct answer using the code given below;

- a) 1, 2, 4 and 5 only
- b) 2, 3, 5, 6 and 7 only
- c) 1, 3, 4, 6 and 7 only
- d) 1, 2, 3, 4, 5, 6 and 7 only

Ans) c

Exp) Option c is the correct answer.

Solar flares are intense bursts of radiation from the sun that can directly influence electronics on Earth. They are often associated with coronal mass ejections (CMEs), which are large clouds of gas that erupt from the sun's interior into its atmosphere.

Statement 1 and 3 are correct: The large solar flare is projected to strike satellites in the **Earth's upper atmosphere**. Thus it affects GPS navigation, mobile phone transmissions, and satellite TV. The flares might potentially **disrupt power grids and electrical networks** in various regions of the planet.

Statement 2 is incorrect: Solar flares can temporarily alter the upper atmosphere creating disruptions. But it **does not cause Tsunamis**. It only affects the upper atmosphere.

Statement 4 is correct: The high-energy particles emitted by the flare could also cause **certain atoms in the Earth's atmosphere to glow, leading to auroras in Central Europe as well as North America**. The phenomenon could only be seen if the weather is clear.

Statement 5 is incorrect: There is no causal link between the coronal mass ejections (CMEs) and the deadly forest fires. There is a **common misconception** that solar storms are associated with extreme geological and atmospheric effects on Earth. The sun cannot produce solar flares or CMEs that

physically burn the landscape, if it did, I doubt complex life would have had much of a chance at evolving over the last few billion years if our planet was constantly being sterilized.

Statement 6 is correct: The scientists found that solar flares and storms heated and expanded the atmosphere and that these effects could extend to the satellites' orbits. The density of atmospheric gases increases, slowing the satellites and causing them to lose altitude by a few kilometres per day.

Statement 7 is correct: Solar flares allow **interference with the short wave radios** that are being used, emitting more rays allowing people to get more of a sun burn during this time frame.

A study by NASA of polar flights during a solar storm in 2003 showed that passengers received about 12 percent of the annual radiation limit recommended by the International Committee on Radiological Protection. The exposures were greater than on typical flights at lower latitudes, and confirmed concerns about commercial flights using polar routes.

Source: https://www.nasa.gov/mission_pages/sunearth/news/flare-impacts.html

https://r.search.yahoo.com/_ylt=AwrzxRTkZxi2kwAG8u7HAX.;_ylu=Y29sbwNzZzMEcG9zAzEEdnRpZAMEc2VjA3Nj/RV=2/RE=1654456788/RO=10/RU=https%3a%2f%2fwww.dw.com%2fen%2fstrong-solar-flare-could-disrupt-navigation-lead-to-auroras%2fa-59670142/RK=2/RS=NA1y2cHNH0EanDQd68whmvgyWDo-

<https://www.seeker.com/can-solar-storms-cause-wildfires-1765087584.html>

<https://www.nasa.gov/centers/langley/science/polar-radiation.html>

Q.41) "Climate Action Tracker" which monitors the emission reduction pledges of different countries is a:

- Database created by coalition organisations of Research organisations
- Wing of "International Panel of Climate Change"
- Committee under "United Nations Framework Convention on Climate Change"
- Agency promoted and financed by United Nations Environment Programme and World Bank

Ans) a

Exp) Option a is the correct answer.

Climate Action Tracker is an independent scientific analysis produced by two research organizations tracking climate action since 2009. It monitors 32 countries, accounting for more than 80 percent of global emissions.

- The Climate Action Tracker is an independent scientific analysis that tracks government climate action and measures it against the globally agreed Paris Agreement aim of "holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C." A collaboration of two organizations, Climate Analytics and New Climate Institute, the CAT has been providing this independent analysis to policymakers since 2009.

Source: <https://blog.forumias.com/progress-on-paris-climate-change-agreement-in-india-and-world/>

Q.42) Consider the following statements:

- "The Climate Group" is an international non-profit organization that drives climate action by building large networks and runs them.
- The International Energy Agency in partnership with the Climate Group launched a global initiative "EP100".
- EP100 brings together leading companies committed to driving innovation in energy efficiency and increasing competitiveness while delivering on emission reduction goals.
- Some Indian companies are members of EP100.
- The International Energy Agency is the Secretariat to the "Under2 Coalition".

Which of the statements given above are correct?

- 1, 2, 4 and 5

- b) 1, 3 and 4 only
- c) 2, 3 and 5 only
- d) 1, 2, 3, 4 and 5

Ans) b

Exp) Option b is the correct answer.

Statement 1 is correct: Climate group is an international non-profit founded in 2003, with offices in London, New York, New Delhi, Amsterdam and Beijing. It has grown its network to include over 500 multinational businesses in 175 markets worldwide.

Statement 2 is incorrect: EP100 is a global initiative led by The Climate Group and the Alliance to Save Energy. (and not by International Energy Agency)

Statement 3 is correct: The Climate Group's global EP100 initiative brings together a growing group of energy-smart companies committed to improving their energy productivity and doing more with less green-house gas emission. By integrating ambitious energy targets into business strategy, leading companies are driving innovation in energy efficiency and increasing competitiveness while delivering on emissions reduction goals.

Statement 4 is correct: EP100 has a global reach, with member companies operating in more than 130 markets around the world. India's own Mahindra group is one of the leaders in the ongoing battle to cut energy consumption and carbon dioxide emissions by increasingly switching to renewable energy.

Statement 5 is incorrect: Climate Group is the Secretariat to the Under2 Coalition and not the International Energy Agency and works with governments to accelerate climate action through four work streams:

- Pathways
- Policy action
- Transparency
- Diplomacy

Source: <https://theclimategroup.prod.acquia-sites.com/about-us>

<https://climateinitiativesplatform.org/index.php/EP100#:~:text=The%20Climate%20Group's%20global%20EP100,and%20accelerate%20a%20clean%20economy.>

<https://www.theclimategroup.org/about-ep100>

<https://www.theclimategroup.org/ep100-members>

Q.43) "If rainforests and tropical forests are the lungs of the Earth, then surely wetlands function as its kidneys." Which one of the following functions of wetlands best reflects the above statement?

- a) The water cycle in wetlands involves surface runoff, subsoil percolation and evaporation.
- b) Algae form the nutrient base upon which fish, crustaceans, molluscs, birds, reptiles and mammals thrive.
- c) Wetlands play a vital role in maintaining sedimentation balance and soil stabilization.
- d) Aquatic plants absorb heavy metals and excess nutrients.

Ans) d

Exp) Option d is the correct answer.

Just as forests are called as the 'lungs of the earth', wetlands are the 'kidneys' that regulate water and filter waste from the landscape.

Wetlands include mangroves, peat lands and marshes, rivers and lakes, deltas, floodplains and flooded forests, rice-fields, and even coral reefs. Aquatic plants of wetlands absorb heavy metals and excessive nutrients thereby purifying water. For instance, Mangrove trees have the ability of storing metals, transferring these elements from the sediment and concentrating them in their tissues. They can serve as a means for the immobilization and removal of pollutants.

<https://science.thewire.in/environment/explained-wetlands-why-are-they-important/>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7460317/>

Q.44) In the context of WHO Air Quality Guidelines, consider the following statements:

1. The 24-hour mean of PM_{2.5} should not exceed 15 µg/m³ and annual mean of PM_{2.5} should not exceed 5 µg/m³.
2. In a year, the highest levels of ozone pollution occur during the periods of inclement weather.
3. PM₁₀ can penetrate the lung barrier and enter the bloodstream.
4. Excessive ozone in the air can trigger asthma.

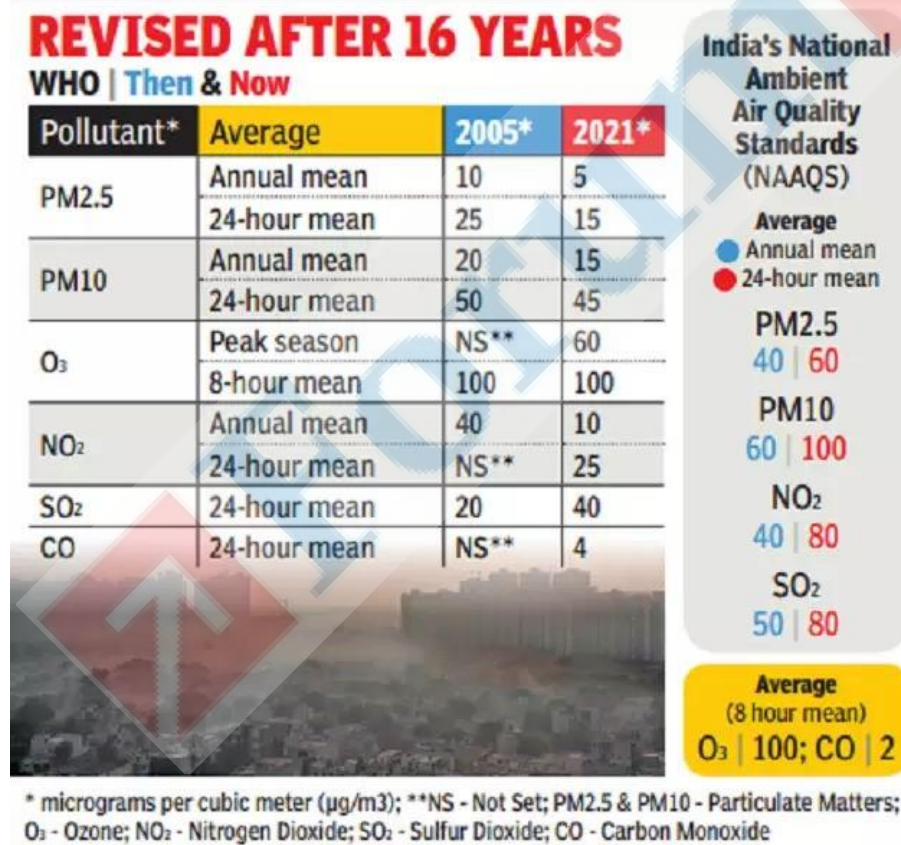
Which of the statements given above are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is correct: The World Health Organization(WHO) has released the Global Air Quality Guidelines(AQGs).The new guidelines recommend air quality levels for six pollutants particulate matter (PM) 2.5 and PM 10, ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂) and carbon monoxide (CO).



Statement 2 is incorrect: Ozone at ground level is formed by the reaction with sunlight (photochemical reaction) of pollutants such as nitrogen oxides (NO_x) from vehicle and industry emissions and volatile organic compounds (VOCs) emitted by vehicles, solvents and industry. **As a result, the highest levels of ozone pollution occur during periods of sunny weather and not during inclement weather.**

Statement 3 is incorrect: PM is a common proxy indicator for air pollution. It affects more people than any other pollutant. The major components of PM are sulfate, nitrates, ammonia, sodium chloride, black

carbon, mineral dust and water. It consists of a complex mixture of solid and liquid particles of organic and inorganic substances suspended in the air. **While particles with a diameter of 10 microns or less, (\leq PM10) can penetrate and lodge deep inside the lungs**, the even more health-damaging particles are those with a diameter of 2.5 microns or less, (\leq PM2.5). **PM2.5 can penetrate the lung barrier and enter the blood system.** Chronic exposure to particles contributes to the risk of developing cardiovascular and respiratory diseases, as well as of lung cancer.

Statement 4 is correct: Excessive ozone in the air can have a marked effect on human health. It causes breathing problems, trigger asthma, reduce lung function and cause lung diseases. Ozone triggers asthma because it is very irritating to the lungs and airways.

Source: <https://www.aafa.org/air-pollution-smog-asthma/#:~:text=Ozone%20triggers%20asthma%20because%20it,Ozone%20can%20reduce%20lung%20function.>

<https://blog.forumias.com/who-says-air-pollution-kills-7-million-a-year-toughens-guidelines/>
[https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health#:~:text=While%20particles%20with%20a%20diameter,and%20enter%20the%20blood%20system.](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health#:~:text=While%20particles%20with%20a%20diameter,and%20enter%20the%20blood%20system.)

Q.45) With reference to "Gucchi" sometimes mentioned in the news, consider the following statements:

1. It is a fungus.
2. It grows in some Himalayan Forest areas.
3. It is commercially cultivated in the Himalayan foothills of north-eastern India.

Which of the statements given above is/are correct?

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

Ans) c

Exp) Option c is the correct answer.

Statement 1 is correct: Guchhi mushroom is a species of fungus in the family Morchellaceae of the Ascomycota. They are pale yellow in colour with large pits and ridges on the surface of the cap, raised on a large white stem.

Statement 2 is correct: It is grown in the foothills of Himalayas in Himachal Pradesh, Uttaranchal, and Jammu and Kashmir.

Statement 3 is incorrect: The mushrooms cannot be cultivated commercially and grow in conifer forests across temperature regions. It takes months for villagers to collect enough of these mushrooms, dry them and bring them to the market. These mushrooms are also replete with health benefits. They are rich in potassium, vitamins and copper. They are also a rich source of vitamin D apart from several B-vitamins

Source: <https://indianexpress.com/article/lifestyle/food-wine/gucchi-mushrooms-cost-health-benefits-6484874/>

Q.46) With reference to polyethylene terephthalate, the use of which is so widespread in our daily lives, consider the following statements:

1. Its fibres can be blended with wool and cotton fibres to reinforce their properties.
2. Containers made of it can be used to store any alcoholic beverage.
3. Bottles made of it can be recycled into other products.
4. Articles made of it can be easily disposed of by incineration without causing greenhouse gas emissions.

Which of the statements given above are correct?

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

Ans. a

Exp) Option a is the correct answer.

Polyethylene terephthalate (PET or PETE) is a strong, stiff synthetic fibre and resin and a member of the polyester family of polymers. PET is spun into fibres for permanent-press fabrics and blow-molded into disposable beverage bottles.

Statement 1 is correct: PET fibres make them highly resistant to deformation, so they impart excellent resistance to wrinkling in fabrics. **They are often used in durable-press blends with other fibres such as rayon, wool, and cotton, reinforcing the inherent properties** of those fibres while contributing to the ability of the fabric to recover from wrinkling.

Statement 2 is incorrect: Maharashtra government has announced the ban on sale of alcohol in PET bottles from April 1. Plastic packaging is dangerous to human health and the country liquor and country made foreign liquor cannot be sold in such bottles. PET has become widely used in carbonated-beverage bottles and in jars for food processed at low temperatures. The low softening temperature of PET—approximately 70 °C (160 °F)—prevents it from being used as a container for hot foods.

Statement 3 is correct: Polyethylene terephthalate is the most widely recycled plastic. For instance, PET bottles and containers are commonly melted down and spun into fibres for fibrefill or carpets.

Statement 4 is incorrect: Polyethylene, like other plastics, is not inert and is known to release additives and other degradation products into the environment throughout its lifetime. For example, the additive bisphenol-A used in the manufacture of many plastic products is leached as plastics age, and hydrocarbon gases are produced during high-temperature decomposition (>202°C).

Source: <https://www.britannica.com/science/polyethylene-terephthalate>

<https://www.unep.org/news-and-stories/story/double-trouble-plastics-found-emit-potent-greenhouse-gases>

Q.47) Which of the following is not a bird?

- a) Golden Mahseer
- b) Indian Nightjar
- c) Spoonbill
- d) White Ibis

Ans) a

Exp) Option a is the correct answer.

- **Mahseer roughly translates as mahi fish and sher tiger; it is also referred as tiger among fish.** It is a large cyprinid and known to be the toughest among the fresh water sport fish. **Golden Mahseer lives in fast-moving waters, inhabiting hill streams with a rocky and stony substrate.** They can be found in temperatures between 5°C and 25°C. The Golden Mahseer inhabits the Himalayan foothills, the Indus, Ganga and Brahmaputra basins and can also be found down south in the Balamore, Cauvery, Tambraparini, and Kosi Rivers.
- The Indian nightjar species are nocturnal birds with long pointed wings and short legs.
- Spoonbill is any member of six species of long-legged wading birds that constitute the subfamily Plataleinae of the family Threskiornithidae (order Ciconiiformes), which also includes the ibises. Spoonbills are found in estuaries, saltwater bayous, and lakes.
- White Ibises are large wading birds with football-shaped bodies. They are found in freshwater marshes, coastal estuaries, mangroves, flooded pastures, mudflats, and swamps.

Source:

https://www.wwfindia.org/about_wwf/priority_species/threatened_species/golden_mahseer/

<https://www.britannica.com/animal/spoonbill>

https://www.allaboutbirds.org/guide/White_Ibis/id

<https://blog.forumias.com/big-golden-mahseer-to-small-kudremukh-barb-freshwater-fish-are-richly-diverse/>

Q.48) Which of the following are nitrogen-fixing plants?

1. Alfalfa
2. Amaranth
3. Chickpea
4. Clover
5. Purslane (Kulfa)
6. Spinach

Select the correct answer using the code given below:

- a) 1, 3 and 4 only
- b) 1, 3, 5 and 6 only
- c) 2, 4, 5 and 6 only
- d) 1, 2, 4, 5 and 6

Ans) a

Exp) Option a is the correct answer.

Nitrogen fixation is a process that implies the transformation of the relatively non-reactive atmospheric N₂ into its more reactive compounds (nitrates, nitrites, or ammonia).

Nitrogen-Fixing Plants: An N-fixing crop is a natural way to provide plant-adjusted N without any industrial harm to nature. Nitrogen fixing plants are:

- **Clovers, vetches, and peas are nitrogen-fixing plants used by farmers worldwide** and in the US Southern Great Plains in particular.
- Peas or beans can be used as a summer nitrogen-fixing cover crop or harvested for food. Both ways, they enrich the soil with plant-suitable N. Southern peas prefer warm seasons and are sown when the soil temperature reaches 60F.
- Beans: fava (aka faba, broad), **alfalfa**, green (aka French), runner, field, sweet, peanuts (aka groundnuts), soybeans, cream, black-eyed, or purple-hulled beans, lupins, lentils, cowpeas, **chickpeas**.

Source: <https://eos.com/blog/nitrogen-fixation/>

<https://www.britannica.com/plant/chickpea>

Q.49) "Biorock technology" is talked about in which one of the following situations?

- a) Restoration of damaged coral reefs
- b) Development of building materials using plant residues
- c) Identification of areas for exploration/extraction of shale gas
- d) Providing salt licks for wild animals in forests/protected areas

Ans. a

Exp) Option a is the correct answer.

The **Zoological Survey of India (ZSI)**, with help from Gujarat's forest department, is attempting for **the first time a process to restore coral reefs using bio rock or mineral accretion technology**. A bio rock structure was installed one nautical mile off the Mithapur coast in the Gulf of Kachchh on January 19.

- Bio rock is the name given to the substance formed by electro accumulation of minerals dissolved in seawater on steel structures that are lowered onto the sea bed and are connected to a power source, in this case solar panels that float on the surface.
- The technology works by passing a small amount of electrical current through electrodes in the water. When a positively charged anode and negatively charged cathode are placed on the sea floor, with an electric current flowing between them, calcium ions combine with carbonate ions and adhere to the structure (cathode). This results in calcium carbonate formation. Coral larvae adhere to the CaCO₃ and grow quickly.

Source: <https://www.thehindu.com/sci-tech/science/india-begins-coral-restoration-in-gulf-of-kachchh/article30645770.ece>

Q.50) The "Miyawaki method" is well known for the:

- a) Promotion of commercial farming in arid and semi-arid areas
- b) Development of gardens Using genetically modified flora
- c) Creation of mini forests in urban areas
- d) Harvesting wind energy on coastal areas and on sea surfaces

Ans) c

Exp) Option c is the correct answer.

Bombay Municipal Corporation (BMC) has been using the Miyawaki method to create tiny urban forests in the Metropolitan areas of Mumbai. Miyawaki is an afforestation method based on the work of Japanese botanist Akira Miyawaki in the 1980s.

Process of Miyawaki Method:

- Initially, native trees of the region are identified and divided into four layers- shrub, sub-tree, tree, and canopy.
- After that, the quality of soil is analyzed and biomass is mixed with it. Biomass mixing help to enhance the perforation capacity, water retention capacity, and nutrients.
- A mound is built with the soil and the seeds are planted at a very high density. Furthermore, the ground is covered with a thick layer of mulch.
- Multi-layered saplings are planted close to each other. This blocks sunlight from reaching the ground and prevents weeds from growing. It also keeps the soil moist.
- The close cropping also ensures that the plants receive sunlight only from the top. It enables them to grow upwards rather than sideways.

Source: <https://blog.forumias.com/miyawaki-method-to-create-dense-green-patches/#:~:text=Process%20of%20Miyawaki%20Method%3A&text=A%20mound%20is%20built%20with,and%20prevents%20weeds%20from%20growing.>

Q.51) In the Government of India Act 1919, the functions of Provincial Government were divided into "Reserved" and "Transferred" subjects. Which of the following were treated as "Reserved" subjects?

1. Administration of Justice
2. Local Self-Government
3. Land Revenue
4. Police

Select the correct answer using the code given below:

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

Ans) c

Exp) Option c is the correct answer.

Under the Government of India Act 1919, Subjects were divided into two lists: 'reserved' which included subjects such as law and order, finance, land revenue, irrigation, etc., and 'transferred' subjects such as education, health, **local government**, industry, agriculture, excise, etc.

The reserved subjects were to be administered by the governor through his executive council of bureaucrats, and the transferred subjects were to be administered by ministers nominated from among the elected members of the legislative council.

Option 1 is correct: Law and order was a reserved subject under the Government of India Act, 1919

Option 2 is incorrect: **local government** was a transferred subject under the Government of India Act, 1919.

Option 3 is correct: Land Revenue was a reserved subject under the Government of India Act, 1919

Option 4 is correct: **Police** was a reserved subject under the Government of India Act, 1919.

Sources: Brief_History_of_Modern_India_by_Rajiv_Ahir_Spectrum_2019_New.pdf

Q.52) In medieval India, the term "Fanam" referred to:

- a) Clothing
- b) Coins
- c) Ornaments
- d) Weapons

Ans) b

Exp) Option b is the correct answer.

The Fanam coins were the regular unit of currency in medieval Travancore and appear to have been extensively used for trading in the region of South India. The words Fanam and Panam literally mean money and are still used as a synonym for wealth in Kerala in the native language of Malayalam.

Sources:

<http://www.columbia.edu/itc/mealac/pritchett/00glossarydata/terms/fanam/fanam.html>

Q.53) Consider the following freedom fighters:

1. Barindra Kumar Ghosh
2. Jogesh Chandra Chatterjee
3. Rash Behari Bose

Who of the above was/were actively associated with the Ghadar Party?

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

Ans) d

Exp) Option d is the correct answer.

Indian revolutionaries in the United States of America and Canada had established the Ghadar (Rebellion) Party in 1913. While most of the members of the party were Sikh peasants and soldiers, their leaders were mostly educated Hindus or Muslims.

Some of the prominent Ghadar leaders were: Baba Gurmukh Singh, Kartar Singh Saraba, Sohan Singh Bhakna, Rahmat Ali Shah, Bhai Parmanand, and Mohammad Barkatullah. Other revolutionaries were active in India and abroad.

In 1915, during an unsuccessful revolutionary attempt, Jatin Mukerjee popularly known as „Bagha Jatin gave his life fighting a battle with the police at Balasore. **Rash Bihari Bose, Raja Mahendra Pratap, Lala Hardayat, Abdul Rahim, Maulana Obaidullah Sindhi, Champak Raman Pillai, Sardar Singh Rana, and**

Madam Cama were some of the prominent Indians Ghadar Leaders who carried on revolutionary activities and propaganda outside India

Sources: CH-15 Nationalist Movement 1905-1918

History of Modern India - Bipin Chandra.pdf

Q.54) With reference to the proposals of Cripps Mission, consider the following statements:

1. The Constituent Assembly would have members nominated by the Provincial Assemblies as well as the Princely States.
2. Any Province, which is not prepared to accept the new Constitution would have the right to sign a separate agreement with Britain regarding its future status.

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

Exp) Option b is the correct answer.

In March 1942, a mission headed by Stafford Cripps was sent to India with constitutional proposals to seek Indian support for the war.

The main proposals of the Cripps mission were as follows:

1. An Indian Union with a dominion status would be set up; it would be free to decide its relations with the Commonwealth and free to participate in the United Nations and other international bodies.
2. After the end of the war, a constituent assembly would be convened to frame a new constitution. Members of this assembly would be partly elected by the provincial assemblies through proportional representation and partly nominated by the princes. **(Hence, Statement 1 is incorrect)**
3. The British government would accept the new constitution subject to two conditions: (i) any province not willing to join the Union could have a separate constitution and form a separate Union, and (ii) the new constitution-making body and the British government would negotiate a treaty to effect the transfer of power and to safeguard racial and religious minorities. **(Hence, Statement 2 is correct)**
4. In the meantime, defence of India would remain in British hands and the governor-general's powers would remain intact.

Sources: CH- 22 Nationalist Response in the Wake of World War II, Brief_History_of_Modern_India_by_Rajiv_Ahir_Spectrum_2019_New.pdf

Q.55) With reference to Indian history, consider the BF following texts:

1. Nettipakarana
2. Parishishtaparvan
3. Avadanashataka
4. Trishashtilakshana Mahapurana

Which of the above are Jaina texts?

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

Ans) b

Exp) Option b is the correct answer.

Option 1 is incorrect: The **Nettipakarana** is a Buddhist scripture contains methods were taught by the Buddha's disciple Kaccana as approved by the Buddha and that it was recited at the First Buddhist Council.

Option 2 is correct: The **Parishishtaparvan** also known as the **Sthaviravalicharitra** is a 12th-century Sanskrit mahakavya by Hemachandra which details the histories of the earliest Jain teachers.

Option 3 is incorrect: The **Avadānaśataka** (A Hundred Glorious Deeds) are Jataka Stories (Buddhist tales). The stories are thematically organized into ten "books" that portray the truth of the doctrine of karma (action) and the power of religious dāna (giving), faith, and devotion.

Option 4 is correct: **Trishashthilkshana Mahapurana** is a major Jain text composed largely by Acharya Jinasena during the rule of Rashtrakutas.

Sources:

<https://books.google.co.in/books?id=87k0AwAAQBAJ&pg=PT82&lpg=PT82&dq=Trishashtilakshana+Mahapurana&source=bl&ots=8IQkhwPPG&sig=ACfU3U07k7gfAOglAaPeC-ueCmHac1uUMA&hl=en&sa=X&ved=2ahUKEwjw6az9xpb4AhVc8HMBHWhTBs4Q6AF6BAG4EAM#v=onepage&q=Trishashtilakshana%20Mahapurana&f=false>

<https://encyclopediaofbuddhism.org/wiki/Nettipakarana>
<https://hyperleap.com/topic/Parishishtaparvan>

<https://jatakastories.div.ed.ac.uk/textual-collections/avadanasataka/>

Q.56) With reference to Indian history, consider the following pairs:

Historical person - Known as

1. Aryadeva - Jaina scholar
2. Dignaga - Buddhist scholar
3. Nathamuni - Vaishnava scholar

How many pairs given above are correctly matched?

- a) None of the pairs
- b) Only one pair
- c) Only two pairs
- d) All three pairs

Ans) c

Exp) Option c is the correct answer.

Pair 1 is incorrect: Āryadeva (3rd century), a disciple of Nāgārjuna, is a central figure in the development of early Indian **Madhyamaka philosophy**. **The Madhyamaka school of Buddhism**, the followers of which are called Mādhyamikas, was one of the two principal schools of Mahāyāna Buddhism

Pair 2 is correct: **Dignāga**, (born c. 480 CE—died c. 540), was a **Buddhist logician and author of the Pramāṇasamuccaya** ("Compendium of the Means of True Knowledge"), a work that laid the **foundations of Buddhist logic**.

Pair 3 is correct: Nathamuni founded a Sanskrit-Tamil school at Srirangam (Tamil Nadu state), which continues to be a great Vaishnavite centre in South India.

Source: <https://www.oxfordbibliographies.com/view/document/obo-9780195393521/obo-9780195393521-0065.xml>

<https://www.britannica.com/biography/Dignaga>

<https://www.thehindu.com/society/faith/nathamuni-and-alavandar/article34038058.ece>

<https://www.britannica.com/biography/Nathamuni>

Q.57) With reference to Indian history, consider the following statements:

1. The first Mongol invasion of India happened during the reign of Jalal-ud-din Khalji.
2. During the reign of Ala-ud-din Khalji, one Mongol assault marched up to Delhi and besieged the city.
3. Muhammad-bin-Tughlaq temporarily lost portions of north-west of his kingdom to Mongols.

Which of the statements given above is/are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: The first Mongol invasion of India took place in the reign of Sultan Shams-ud-din Iltutmish.

Statement 2 is correct: Alauddin established a huge permanent, standing army to satisfy his ambition of conquest and to protect the country from Mongol invasion.

The Mongols attacked at the worst time possible for Alauddin Khilji – when he was busy laying siege to Chittor. This time the Mongols traveled light. An army of 12,000 under Targhi's leadership moved to Delhi in a swift attack; many governors could not send their troops to Delhi in time.

Alauddin Khilji was forced to retreat to Siri for about two months. The Mongols attacked and pillaged not only the surrounding areas, but Delhi itself. Alauddin Khilji continued to hold the fortress at Siri; Targhi withdrew the siege after a few months and left the area. Barani, a contemporary historian at that time, attributed this "marvel" to the prayers of the Sufi mystic Shaikh Nizamuddin Auliya.

Statement 3 is incorrect:

The next major Mongol invasion took place after the Khiljis had been replaced by the Tughlaq dynasty in the Sultanate. In 1327 the Chagatai Mongols under Tarmashirin, who had sent envoys to Delhi to negotiate peace the previous year, sacked the frontier towns of Lamghan and Multan and besieged Delhi. The Tughlaq ruler paid a large ransom to spare his Sultanate from further ravages. Muhammad bin Tughluq asked the Ilkhan Abu Sa'id to form an alliance against Tarmashirin, who had invaded Khorasan, but an attack didn't materialize. Tarmashirin was a Buddhist who later converted to Islam. Religious tensions in the Chagatai Khanate were a divisive factor among the Mongols.

Source: <https://www.notesonindianhistory.com/2018/05/the-first-mongol-invasion-of-india.html>
https://military-history.fandom.com/wiki/Mongol_invasions_of_India

Q.58) With reference to Indian history, who of the following were known as "Kulah-Daran"?

- a) Arab merchants
- b) Qalandars
- c) Persian calligraphists
- d) Sayyids

Ans) d

Exp) Option d is the correct answer.

Option d is correct: The Sayyids put on a pointed cap (Kulah) and they were known as **Kulah – Daran**.

Source:

<https://books.google.co.in/books?id=nMWSQuf4oSIC&pg=RA1-PA364&lpg=RA1-PA364&dq=KULAH+DARAN+were+known+as&source=bl&ots=iOi8zNn0WR&sig=ACfU3U03tc5wPrSF8jqMhCdRjHsDYjMtMA&hl=en&sa=X&ved=2ahUKEwjFppSH9pX4AhWFRWwGHUdoBaEQ6AF6BAGSEAM#v=onepage&q=KULAH%20DARAN%20were%20known%20as&f=false>

Q.59) With reference to Indian history, consider the following statements:

1. The Dutch established their factories/warehouses on the east coast on lands granted to them by Gajapati rulers.
2. Alfonso de Albuquerque captured Goa from the Bijapur Sultanate.

3. The English East India Company established a factory at Madras on a plot of land leased from a representative of the Vijayanagara empire.

Which of the statements given above are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: Kapilendra, the minister of Bhanudeva IV (1414-1435), usurped the throne in 1435 and laid the foundation of the Gajapati rule in Odisha. After Pratapa Rudra's death (1540), his successors could hardly hold the empire intact, and the end of Suryavamsi (Gajapati) dynasty came soon after (1542), whereas the Dutch East India Company was formed in 1602 through a charter.

Statement 2 is correct: Albuquerque acquired Goa from the Sultan of Bijapur in 1510 with ease; the principal port of the Sultan of Bijapur became "the first bit of Indian territory to be under the Europeans since the time of Alexander the Great".

Since **Statement 1 is incorrect, by elimination method the answer must be 'b'.**

Sources: Spectrum Modern History PDF Page 57

Page 61, <https://egyankosh.ac.in/bitstream/123456789/68907/3/Unit-3.pdf>

Page 46, <https://egyankosh.ac.in/bitstream/123456789/20251/1/Unit-25.pdf>

Q.60) According to Kautilya's Arthashastra, which of the following are correct?

- 1. A person could be a slave as a result of a judicial punishment.
- 2. If a female slave bore her master a son, she was legally free.
- 3. If a son born to a female slave was fathered by her master, the son was entitled to the legal status of the master's son.

Which of the statements given above are correct?

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

Ans) d

Exp: Option d is the correct answer.

Statement 1 is correct: There are several types of enslavement that is given in Arthashastra. One of the prime methods of enslavement was to have a person as a slave as a result of judicial punishment for some sort of criminal demeanor.

Statement 2 is correct: There were variety of protection offered to the slaves, especially to the women slaves. As per the Arthashastra, When a child is begotten on a female slave by her master, both the child and its mother shall at once be recognised as free.

Statement 3 is correct: According to the Arthashastra, if a son born to a female slave was fathered by her master, the son was entitled to the legal status of the master's son.

Source: <https://ncjindalps.com/pdf/HUMANITIES/The%20Kautilya%20Arthashastra%20-%20Chanakya.pdf>

[Pg 70, 450,

<https://www.jstor.org/stable/3632125>

[pg 192-193]

Q.61) Consider the following statements:

1. Tight monetary policy of the US Federal Reserve could lead to capital flight.
 2. Capital flight may increase the interest cost of firms with existing External Commercial borrowing (ECBs).
 3. Devaluation of domestic currency decreases the currency risk associated with ECBs.
- Which of the statements given above are correct?

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

Ans) a

Exp: Option a is the correct answer.

Tight monetary policy is **an action undertaken by a central bank such as the Federal Reserve to slow down overheated economic growth**. Central banks engage in tight monetary policy when an economy is accelerating too quickly or inflation—overall prices—is rising too fast.

Statement 1 is correct: Central Banks enact monetary policy to **keep inflation, unemployment, and economic growth stable** and positive. When the **economy overheats central banks raise interest rates and take other contractionary measures** to slow things down - **this can discourage investment and depress asset prices**. Thus, **tight monetary policy of the US Federal Reserve could lead to capital flight** by the investors.

Statement 2 is correct: **Capital flight** can drive up the interest costs as there is reduced money supply in the system. Thus, **it would lead to increase in the interest cost of firms** that have external commercial borrowings.

Statement 3 is incorrect: **Devaluation of domestic currency** does not affect the **External Commercial Borrowings** as it is **denominated in the foreign currency** and not in the domestic currency.

<https://ies.princeton.edu/pdf/S58.pdf>

<https://economictimes.indiatimes.com/news/international/business/imf-says-emerging-economies-must-prepare-for-fed-policy-tightening/articleshow/88803113.cms?from=mdr>

<https://blogs.imf.org/2022/01/10/emerging-economies-must-prepare-for-fed-policy-tightening/>

<https://m.rbi.org.in/scripts/PublicationsView.aspx?id=20994>

Q.62) Consider the following States:

1. Andhra Pradesh
2. Kerala
3. Himachal Pradesh
4. Tripura

How many of the above are generally known as tea-producing States?

- a) Only one State
- b) Only two States
- c) Only three States
- d) All four States

Ans) c

Exp: Option c is the correct answer.

As per the Tea Board under the Ministry of Commerce and Industry, Assam, West Bengal, Tamil Nadu, **Himachal Pradesh, Tripura, Kerela** and Karnataka are the states generally known as tea-producing States. Thus, option c is correct.

Source: https://www.indiatea.org/tea_growing_regions

https://www.teaboard.gov.in/pdf/Production_final_2017_and_2017_18_pdf4181.pdf

Q.63) Consider the following statements:

1. In India credit rating agencies are regulated by the Reserve Bank of India.
2. The rating agency popularly known as ICRA is a public limited company.
3. Brickwork Ratings is an Indian credit rating agency.

Which of the statements given above are correct?

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

Ans) b

Exp: Option b is the correct answer.

Statement 1 is incorrect: Credit Rating Agencies form an essential part of the financial markets. They are regulated by SEBI and not by RBI under the powers derived from the Securities and Exchange Board of India (Credit Rating Agencies) Regulations, 1999.

Statement 2 is correct: ICRA Limited was set up in 1991 by leading financial/investment institutions, commercial banks and financial services companies as an independent and professional investment Information and Credit Rating Agency. ICRA is a Public Limited Company, with its shares listed on the Bombay Stock Exchange and the National Stock Exchange.

Statement 3 is correct: Brickwork Ratings (BWR) is a SEBI registered Indian Credit Rating Agency. It has also been accredited by RBI offers rating services on Bank Loans, NCD, Commercial Paper, Fixed deposits, Securitised paper, Security receipts etc.

Source: https://www.sebi.gov.in/sebi_data/faqfiles/oct-2021/1634902664371.pdf

<https://www.icra.in/Home/Profile>

<https://www.brickworkratings.com/>

Q.64) With reference to the 'Banks Board Bureau (BBB) which of the following statements are correct?

1. The Governor of the Chairman of BBB.
2. BBB recommends for the selection of head for Public Sector Banks.
3. BBB helps the Public Sector Banks in developing strategies and capital raising p(Ans)

Select the correct answer using the code given below:

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

Ans) b

Option b is the correct answer.

Banks Board Bureau is a self-governing autonomous body of the Central Government. It is an advisory authority comprising eminent professionals and officials to improve the management of public sector banks.

Statement 1 is incorrect: Banks Board Bureau comprises the Chairman, three ex-officio members i.e Secretary, Department of Public Enterprises, Secretary of the Department of Financial Services and Deputy Governor of the Reserve Bank of India, and five expert members, two of which are from the private sector. The Chairman is selected by the central government and RBI governor does not head it.

Statement 2 and 3 are correct: Banks Board Bureau recommends for the selection of head for Public Sector Banks and other key personnel if required. It also develops strategies for raising capital and improving performance of PSBs.

Source: <https://banksboardbureau.org.in/>

Q.65) With reference to Convertible Bonds, consider the following statements:

1. As there is an option to exchange the bond for equity, Convertible Bonds pay a lower rate of interest.
2. The option to convert to equity affords the bondholder a degree of indexation to rising consumer prices.

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

Exp: Option c is the correct answer.

A convertible bond is a type of debt security that provides an investor with a right or an obligation to exchange the bond for a predetermined number of shares in the issuing company at certain times of a bond's lifetime. It is a hybrid security that possesses features of both debt and equity.

Statement 1 is correct: Convertible bonds tend to **offer a lower coupon rate or rate of return** in exchange for the value of the option to convert the bond into common stock. Investors will generally accept a lower coupon rate on a convertible bond, compared with the coupon rate on an otherwise identical regular bond, because of its conversion feature. This enables the issuer to save on interest expenses, which can be substantial in the case of a large bond issue.

Statement 2 is correct: The option to convert to equity affords the **bondholder a degree of indexation to rising consumer prices** as equity prices can differ widely from the given interest and the difference in that can be used as a hedge for the inflation.

Sources:

<https://www.investopedia.com/terms/c/convertiblebond.asp#:~:text=A%20convertible%20bond%20is%20a,the%20discretion%20of%20the%20bondholder>

<https://www.economist.com/finance-and-economics/2021/07/10/why-convertible-bonds-are-the-asset-class-for-the-times>

Q.66) Consider the following:

1. Asian Infrastructure Investment Bank
2. Missile Technology Control Regime
3. Shanghai Cooperation Organisation

Indian is a member of which of the above?

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

Ans) d

Exp: Option d is the correct answer.

Option 1 is correct. The Asian Infrastructure Investment Bank (AIIB) is a multilateral development bank that aims to improve economic and social outcomes in Asia. **India became a member in 2016.**

Option 2 is correct. The Missile Technology Control Regime (MTCR) is a multilateral export control regime whose members have an informal political understanding to limit the proliferation of missiles and missile technology. **India became a member of the MTCR in 2016.**

Option 3 is correct. The Shanghai Cooperation Organisation (SCO) is a permanent intergovernmental international organisation, created on 15 June 2001 in Shanghai (China). **India became its member in 2017.**

Sources: <https://www.aiib.org/en/about-aiib/governance/members-of-bank/index.html>

<https://www.thehindubusinessline.com/news/india-in-mtcr-club-can-now-export-arms/article64124008.ece#:~:text=India%20on%20Monday%20became%20an,it%20access%20to%20sensitive%20technology>

<https://www.orfonline.org/expert-speak/sco-comes-to-india/#:~:text=India%20chaired%20the%202019th,became%20its%20member%20in%202017>.

Q.67) Consider the following statements:

1. Vietnam has been one of the fastest-growing economies in the world in recent years.
2. Vietnam is led by a multi-party-political system.
3. Vietnam's economic growth is linked to its integration with global supply chains and focus on exports.
4. For a long time, Vietnam's low labor costs and stable exchange rates have attracted global manufacturers.
5. Vietnam has the most productive e-service sector in the Indo-Pacific region.

Which of the statements given above are correct?

- a) 2 and 4
- b) 3 and 5
- c) 1, 3 and 4
- d) 1 and 2

Ans) c

Exp: Option c is the correct answer.

Statement 1 is correct: Vietnam has been a development success story. Economic reforms since the launch of Đổi Mới (economic reforms initiated in Vietnam) in 1986, coupled with beneficial global trends, have helped propel Vietnam from being one of the world's poorest nations to a middle-income economy in one generation. Between 2002 and 2021, GDP per capita increased 3.6 times, reaching almost US\$3,700.

Statement 2 is incorrect: Vietnam is a **one-party socialist republic**. Thus, this statement is incorrect.

Statement 3 is correct: Vietnam's **export-led growth strategy** and global integration are among the key factors behind the country's remarkable achievements in growth and poverty reduction over the last two and a half decades.

Statement 4 is correct: By ending restrictions over trade and foreign investment, Vietnam attracted companies like South Korea's Samsung, which saw the country, with its **well-educated workers and low wages**, as an attractive platform for manufacturing and exports.

Statement 5 is incorrect: Vietnam do have one of the most productive e-service sector in the Indo-Pacific region but cannot be called the most productive e-service sector in the entire Indo-Pacific region.

Source: <https://www.worldbank.org/en/country/vietnam/overview>

<https://www.bbc.com/news/world-asia-pacific-16567315>

<https://www.bloomberg.com/news/articles/2022-03-29/vietnam-s-economic-growth-eases-in-first-quarter-to-5>

Q.68) In India which one of the following is responsible for maintaining for prices stability by controlling inflation?

- a) Department of Consumer Affairs
- b) Expenditure Management Commission
- c) Financial Stability and Development Council
- d) Reserve Bank of India

Ans) d

Exp: option d is the correct answer.

Reserve Bank of India is India's central bank has key function to keep **check on the inflation** by use of monetary policy in forms of qualitative and quantitative measures.

Source: <https://rbidocs.rbi.org.in/rdocs/Content/PDFs/FUNCWWE080910.pdf>

Q.69) With reference to Non-Fungible Tokens (NFTs), consider the following statements:

1. They enable the digital representation of physical assets.
2. They are unique cryptographic tokens that exist on a blockchain.
3. They can be traded or exchanged at equivalency and therefore can be used as a medium of commercial transactions.

Which of the statements given above are correct?

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

Ans) a

Exp) Option a is the correct answer.

Non-fungible tokens (NFTs) are cryptographic **assets** on a blockchain with unique identification codes and metadata that distinguish them from each other.

Statement 1 is correct. Anything that can be converted into a digital form can be an NFT. Everything from your drawings, photos, videos, GIF, music, in-game items, selfies, and even a tweet can be turned into an NFT, which can then be **traded online using cryptocurrency**.

It is a **unique digital asset** that represents **ownership of real-world** items like art, video clips, music, and more.

Statement 2 is correct. **Non-fungible tokens (NFTs) are cryptographic assets on a blockchain with unique identification** codes and metadata that distinguish them from each other.

Statement 3 is incorrect. **Unlike cryptocurrencies, they cannot** be traded or exchanged at **equivalency. This differs from fungible tokens like cryptocurrencies, which are identical to each other and, therefore, can serve as a medium for commercial transactions.**

Source: <https://www.investopedia.com/non-fungible-tokens-nft-5115211>

Q.70) Consider the following pairs:

Reservoirs	States
1. Ghataprabha	Telangana
2. Gandhi Sagar	Madhya Pradesh
3. Indira Sagar	Andhra Pradesh
4. Maithon	Chhattisgarh

How many pairs given above are **not correctly** matched?

- a) Only one pair
- b) Only two pair
- c) Only three pair
- d) All four pair

Ans) c

Exp) Option c is the correct answer.

Only one pair is correctly matched.

Pair 1 is incorrectly matched. The Ghataprabha Reservoir is located in the Belgavi district of the state of **Karnataka**. The reservoir has storage of about 659 million cubic meters, providing irrigation to a total extent of 1,396,000 hectares of land. The Ghataprabha River is a major tributary of the River Krishna.

Pair 2 is correctly matched. The Gandhi Sagar Dam is one of the four major dams built on India's Chambal River and is located in the **Mandsaur & Neemuch district of Madhya Pradesh**. It is a masonry gravity dam.

Pair 3 is incorrectly matched. The **Indira Sagar Dam on Narmada river** is a multipurpose project, located at Narmada Nagar, Punasa in the Khandwa district of **Madhya Pradesh**.

Indirasagar Polavaram, an interstate project on river Godavari has been conceived as a part of recommendations of Godavari Water Disputes Tribunal (GWDT). The project implements Godavari-Krishna link under Interlinking of rivers project. Indira Sagar (Polavaram) project is located on river Godavari near Ramayyapet village of Polavaram Mandal of West Godavari district in Andhra Pradesh.

Pair 4 is incorrectly matched. Maithon, dam is located on the banks of river Barakar. The Maithon Dam is located about 48 kms from the Coal City of **Dhanbad, Jharkhand**. The dam with an underground power station is one of its kinds in the whole of South East Asia. The lake on which it is built is spread over 65 square kilometers. This was developed by the Damodar Valley Corporation (DVC Ltd).

Source: <https://dhanbad.nic.in/tourist-place/maithon-dam/>

https://indiawris.gov.in/wiki/doku.php?id=ghataprabha_major_irrigation_project_ji02742

<http://www.nhpcindia.com/Default.aspx?id=186&lg=eng&CatId=1&ProjectId=19>

<https://www.downtoearth.org.in/news/natural-disasters/india-s-old-dams-gandhi-sagar-in-mp-needs-immediate-repair-says-cag-report-80941>

Q.71) In India, which one of the following Compiles information on industrial disputes, closures, retrenchments and lay-offs in factories employing workers?

- Central Statistics Office
- Department for Promotion of Industry and Internal Trade
- Labour Bureau
- National Technical Manpower Information System

Ans) c

Exp) Option c is the correct answer.

Labour Bureau, an attached office under Ministry of Labour and Employment, was set up on 1st October 1946. It is entrusted with the **work of compilation, collection, analysis and dissemination** of statistics on different aspects of labour.

It is a storehouse of important economic indicators like Consumer Price Index Numbers for Industrial, Agricultural and Rural Labourers; wage rate indices and data on industrial relations, socio-economic conditions in the organised and unorganised sector of industry etc.

Source: http://labourbureau.gov.in/Ind_dis_clo_2k6%20Intro.htm

<http://labourbureau.gov.in/activities.htm>

Q.72) In India, what is the role of the Coal Controller's Organization (CCO)?

- CCO is the major source of coal Statistics in Government of India.
- It monitors progress of development of Captive Coal/ Lignite blocks.
- It hears any objection to the Government's notification relating to acquisition of coal-bearing areas.
- It ensures that coal mining companies deliver the coal to end users in the prescribed time.

Select the correct answer using the code given below:

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

Ans) a

Exp) Option a is the correct answer.

The Coal Controller's Organisation (CCO) is a subordinate office of the ministry of coal, having its headquarters at Kolkata and field offices at Dhanbad, Ranchi, Bilaspur, Nagpur, Sambalpur, Kothagudem and Asansol. It collects and maintains coal production data of all private and public sector coal mines in the country. The information is collected on a monthly basis.

Statement 1 is correct. Under **Collection of Statistics Act, 2008** Coal Controller has been made the **statistical authority** with respect to coal and lignite statistics. Entrusted the responsibility of carrying out Annual Coal & Lignite **survey and publishing** of Provisional Coal Statistics and Coal Directory of India.

Statement 2 is correct. It is entrusted with the task of **monitoring captive mines**. Work such as permission for opening and reopening of coal mines... has been entrusted to CCO.

Statement 3 is correct. Under **Coal Bearing Area (Acquisition and Development) Act, 1957-** Coal Controller is the competent authority under this act to hear any objection to the Central Government's Notification relating to acquisition of coal bearing land and to furnish his reports to Central Govt.

Statement 4 is incorrect. Ensuring that coal mining companies deliver the coal to end users in the prescribed time **is not the function of** Coal Controller's Organization (CCO).

Source: <https://economictimes.indiatimes.com/industry/indl-goods/svs/metals-mining/government-asked-to-take-steps-to-strengthen-coal-controller-organisation/articleshow/19818555.cms?from=mdr>

<http://www.coalcontroller.gov.in/pages/display/5-functionsresponsibilities>

<https://coal.nic.in/en/major-statistics/land-acq-under-cba-act-1957>

Q.73) If a Particular area is brought under the Fifth Schedule of the Constitution of India, which one of the following statements best reflects the consequence of it?

- a) This would prevent the transfer of land of tribal people to non-tribal people.
- b) This would create a local self- governing body in that area.
- c) This would convert that area into a Union Territory.
- d) The State having such areas would be declare a Special Category State.

Ans) a

Exp) Option a is the correct answer.

Option a is correct. The Fifth Schedule of the Constitution **deals with the administration and control of Scheduled Areas as well as of Scheduled Tribes residing in any State other than the States of Assam, Meghalaya, Tripura and Mizoram.**

Governor can make regulations for the peace and good government of a scheduled area after consulting the tribes advisory council. Such regulations may prohibit or **restrict the transfer of land by tribal to non tribal members** or among members of the scheduled tribes, regulate the allotment of land to members of the scheduled tribes.

Option b is incorrect. According to the provisions of Paragraph 4, under Article 244(1) of Fifth Schedule of the Constitution of India, the Tribes Advisory Councils (TAC) **shall be established in each State having Scheduled Areas therein and, if the President so directs, also in any State having Scheduled Tribes but not Scheduled Areas.** Tribal advisory council is an advisory body, not a governing body.

Option c is incorrect. Bringing any particular area under the Fifth Schedule of the Constitution of India does not convert the area into a Union Territory.

Option d is incorrect. Bringing any particular area under the Fifth Schedule of the Constitution of India does not get declared as a Special Category State.

Source: https://tribal.nic.in/downloads/CLM/CLM_Const/4.pdf

<https://tribal.nic.in/downloads/FRA/5.%20Land%20and%20Governance%20under%20Fifth%20Sch edule.pdf>

<https://pib.gov.in/PressReleasePage.aspx?PRID=1778540#:~:text=According%20to%20the%20provisions%20of,Tribes%20but%20not%20Scheduled%20Areas>

Q.74) Consider the following statements

1. The India Sanitation Coalition is a platform to promote sustainable sanitation and is funded by the Government of India and the World Health Organization.
2. The National Institute of Urban Affairs is an apex body of the Ministry of Housing and Urban Affairs in Government of India and provides innovative solutions to address the challenges of Urban 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

Exp) Option b is the correct answer.

Statement 1 is incorrect. India Sanitation Coalition (ISC), launched in June 2015, at **Federation of Indian Chamber Commerce and Industry (FICCI)**, enables and supports safe and sustainable sanitation by bringing multiple organizations on a common platform through a range of catalytic actions. These include supporting the unlocking of WASH financing with focus on the private sector, forging partnerships with allied organizations for leading the discourse on sustainable sanitation; convening, curating and disseminating best practices in the sanitation advocacy – space and providing inputs into the policy aspects of sanitation through participation at allied forums.

It is not funded by WHO.

Statement 2 is correct. The National Institute of Urban Affairs (NIUA) was appointed as an **apex body to support** and guide the Government of India in its urban development plans. Since then, it has worked closely with the Ministry of Housing and Urban Affairs. NIUA seeks to **provide innovative solutions to address the challenges of a fast-urbanising India**, and pave the way for more inclusive and sustainable cities of the future.

Source: <https://www.indiasanitationcoalition.org/who-we-are.html>

<https://mohua.gov.in/upload/uploadfiles/files/AR201819-251-316.pdf>

<http://urbanrivers.niua.org/node/46>

https://niua.in/intranet/sites/default/files/Final%20Annual%20Report_2021%28LZ%29_1.pdf

Q.75) Which one of the following has been constituted under the Environment (Protection) Act, 1986?

- a) Central water Commission
- b) Central Ground Water Board
- c) Central Ground Water Authority
- d) National Water Development Agency

Ans) c

Exp) Option c is the correct answer.

Central Ground Water Authority has been constituted under Section 3 (3) of the Environment (Protection) Act, 1986 to regulate and control development and management of groundwater resources in the country.

Source:

<http://cgwb.gov.in/aboutcgwa.html#:~:text=Central%20Ground%20Water%20Authority%20has,water%20resources%20in%20the%20country.>

Q.76) With Reference to the “United Nations Credentials Committee”, consider the following statements:

1. It is a committee set up by the UN Security Council and works under its supervision.
2. It traditionally meets in March, June and September every year.
3. It assesses the credentials of all UN members before submitting a report to the General Assembly for approval.

Which of the statements given above is/are correct?

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

Ans) a

Exp) Option a is the correct answer.

Statement 1 is incorrect. The United Nations Credentials Committee is a committee of the United Nations General Assembly.

Statement 2 is incorrect. A Credentials Committee is appointed at the beginning of each regular session of the General Assembly. It consists of nine members, who are appointed by the General Assembly on the proposal of the President.

Statement 3 is correct. The Committee reports to the Assembly on the credentials of representatives. The Committee is mandated to examine the credentials of representatives of Member States and to report to the General Assembly thereon (Rule 28 of the Rules of Procedure of the General Assembly).

The credentials of representatives and the names of members of the delegation of each Member State are submitted to the Secretary-General and are issued either by the Head of the State or Government or by the Minister for Foreign Affairs (Rule 27 of the Rules of Procedure of the General Assembly).

Source:

<https://www.un.org/en/ga/credentials/credentials.shtml#:~:text=A%20Credentials%20Committee%20is%20appointed,on%20the%20credentials%20of%20representatives.>

Q.77) Which one of the following statements best describes the ‘Polar Code’?

- a) It is the international code of safety for ships operating in polar waters.
- b) It is the agreement of the countries around the North Pole regarding the demarcation of their territories in the polar region.
- c) It is a set of norms to be followed by the countries whose scientists undertake research studies in the North Pole and South Pole.
- d) It is a trade and security agreement of the member countries of the Arctic Council.

Ans) a

Exp) Option a is the correct answer.

The International Code for Ships Operating in Polar Waters (the Polar Code) is a new code adopted by the IMO. The Code acknowledges that polar waters may impose additional demands on ships beyond those normally encountered. It provides a mandatory framework for ships operating in polar waters. It is **mandatory** under both the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL). The Polar Code covers the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters **relevant to ships operating in the inhospitable waters surrounding the two poles**. The Polar Code entered into force on 1 January 2017.

Source: <https://www.imo.org/en/OurWork/Safety/Pages/polar-code.aspx>

Q.78) With reference to the United Nations General Assembly, consider the following statements:

1. The UN General Assembly can grant observer status to the non-member States.
2. Inter-governmental organisations can seek observer status in the UN General Assembly.
3. Permanent Observers in the UN General Assembly can maintain missions at the UN headquarters.

Which of the statements given above are correct?

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

Ans) d

Exp) Option d is the correct answer.

Statement 1 and 2 are correct: The United Nations General Assembly may grant **non-member states, international organizations** and other entities Permanent Observer Status.

However, The UN Charter and the General Assembly Rules of Procedure have no provisions related to granting permanent observer status and is based on practice only.

Statement 3 is correct: Permanent Observers may participate in the sessions and workings of the General Assembly and **maintain missions at the UN Headquarters.**

A list of non-Member States, entities and organizations can receive a standing invitation to participate as observers in the sessions and the work of the General Assembly. Permanent Observers have free access to most meetings and relevant documentation.

Source: <https://ask.un.org/faq/14519>

<https://www.un.org/en/about-us/about-permanent-observers#:~:text=What%20is%20a%20Permanent%20Observer,in%20the%20United%20Nations%20Charter.>

Q.79) With reference to the "Tea Board" in India, consider the following statements:

1. The Tea Board is a statutory body.
2. It is a regulatory body attached to the Ministry of Agriculture and Farmers Welfare.
3. The Tea Board's Head Office is situated in Bengaluru.
4. The Board has overseas office at Dubai and Moscow.

Which of the statements given above are correct?

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

Ans) d

Exp) Option d is the correct answer.

Statement 1 is correct: The Tea Board of India is a **statutory body created under the Tea Act, 1953** and it was established for the purposes of regulating the Indian tea industry and protecting the interests of tea producers in India.

Statement 2 is incorrect: It is functioning as a statutory body of the Central Government **under the Ministry of Commerce.**

Statement 3 is incorrect: Tea Board of India's Head Office is situated in **Kolkata.**

Statement 4 is correct: The Tea Board of India has overseas offices in **Moscow, Dubai, Hamburg, London and New York.** Moscow office. The Moscow office of the Tea Board of India operates under the Embassy of India, and its area of activity includes Russia and the CIS countries, which comprise 50% of Indian tea exports.

Source: <https://www.teaboard.gov.in/TEABOARDCSM/NA==>

Q.80) Which one of the following best describes the term “greenwashing”?

- Conveying a false impression that a company’s products are eco-friendly and environmentally sound
- Non-Inclusion of ecological/ environmental costs in the Annual Financial Statements of a country
- Ignoring the disastrous ecological consequences while undertaking infrastructure development
- Making mandatory provisions for environmental costs in a government project/programme

Ans) a

Exp) Option a is the correct answer.

Greenwashing is the process of **conveying a false impression or providing misleading information** about how a company’s products **are more environmentally sound**. Greenwashing is considered an unsubstantiated claim to **deceive consumers** into believing that a company’s products are environmentally friendly.

Source:

<https://www.investopedia.com/terms/g/greenwashing.asp#:~:text=Greenwashing%20is%20the%20process%20of,company's%20products%20are%20environmentally%20friendly.>

Q.81) Consider the following statements :

- High clouds primarily reflect solar radiation and cool the surface of the Earth.
- Low clouds have a high absorption of infrared radiation emanating from the Earth's surface and thus cause warming effect.

Which of the statements given above is/are correct ?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Ans) d

Exp) Option d is the correct answer.

Whether a given cloud will heat or cool the surface depends on several factors, including the cloud’s altitude, its size, and the make-up of the particles that form the cloud.

Statement 1 is incorrect: Low, thick clouds primarily reflect solar radiation and cool the surface of the Earth.

Statement 2 is incorrect: High, thin clouds primarily transmit incoming solar radiation; at the same time, they trap some of the outgoing infrared radiation emitted by the Earth and radiate it back downward, thereby warming the surface of the Earth.

Source: <https://earthobservatory.nasa.gov/features/Clouds>

Q.82) Consider the following statements:

- Bidibidi is a large refugee settlement in north-western Kenya.
- Some people who fled from South Sudan civil war live in Bidibidi.
- Some people who fled from civil war in Somalia live in Dadaab refugee complex in Kenya.

Which of the statements given above is/are correct?

- 1 and 2
- 2 only
- 2 and 3
- 3 only

Ans) c

Exp) Option c is the correct answer.

Bidibidi became the World's second-largest refugee settlement in the World and the biggest in Africa.

Statement 1 is incorrect: Bidibidi is a large refugee settlement in **Yumbe district of Uganda**.

Statement 2 is correct: Bidibidi is home to more than 270,000 refugees mostly from South Sudan.

Statement 3 is correct: Dadaab refugee (Kenya) complex consists of three camps. The three Dadaab camps are Dagahaley, Ifo and Hagadera. The first two are located in Lagdera (Dadaab) district while Hagadera is located in the neighbouring Fafi district. The first camp was established in 1991, when refugees **fleeing the civil war in Somalia started to cross the border into Kenya**. A second large influx occurred in 2011, when some 130,000 refugees arrived, **fleeing drought and famine in southern Somalia**.

Source: [https://reliefweb.int/map/uganda/unhcr-uganda-bidibidi-refugee-settlement-yumbe-district-draft-16-may-](https://reliefweb.int/map/uganda/unhcr-uganda-bidibidi-refugee-settlement-yumbe-district-draft-16-may-2019?gclid=Cj0KCKQjwqPGUBhDwARIsANNwJV681Q4aLYB2HoafuRYXFGQEiz65irrHg1lPuyVx8T7j79JkSM5OiSAaAt0cEALw_wcB)

[2019?gclid=Cj0KCKQjwqPGUBhDwARIsANNwJV681Q4aLYB2HoafuRYXFGQEiz65irrHg1lPuyVx8T7j79JkSM5OiSAaAt0cEALw_wcB](https://reliefweb.int/map/uganda/unhcr-uganda-bidibidi-refugee-settlement-yumbe-district-draft-16-may-2019?gclid=Cj0KCKQjwqPGUBhDwARIsANNwJV681Q4aLYB2HoafuRYXFGQEiz65irrHg1lPuyVx8T7j79JkSM5OiSAaAt0cEALw_wcB)

<https://data2.unhcr.org/en/documents/download/66344>

[https://www.unhcr.org/ke/dadaab-refugee-](https://www.unhcr.org/ke/dadaab-refugee-complex#:~:text=The%20Dadaab%20refugee%20complex%20has,cross%20the%20border%20into%20Kenya.)

[complex#:~:text=The%20Dadaab%20refugee%20complex%20has,cross%20the%20border%20into%20Kenya.](https://www.unhcr.org/ke/dadaab-refugee-complex#:~:text=The%20Dadaab%20refugee%20complex%20has,cross%20the%20border%20into%20Kenya.)

Q.83) Consider the following countries

1. Armenia
2. Azerbaijan
3. Croatia
4. Romania
5. Uzbekistan

Which of the above are members of the Organization of Turkic States?

- a) 1, 2 and 4
- b) 1 and 3
- c) 2 and 5
- d) 3, 4 and 5

Ans) c

Exp) Option c is the correct answer.

Organization of Turkic States (then called the Cooperation Council of Turkic Speaking States - Turkic Council) was established in 2009 as an intergovernmental organization, with the overarching aim of promoting comprehensive cooperation among Turkic States.

Its four founding member states are **Azerbaijan, Kazakhstan, Kyrgyzstan and Turkey**. During the 7th Summit held in Baku in **October 2019, Uzbekistan joined as a full member**.

Source: <https://www.turkkon.org/en/turk-konseyi-hakkinda>

Q.84) Consider the following statements:

1. Gujarat has the largest solar park in India.
2. Kerala has a fully solar powered International Airport.
3. Goa has the largest floating solar photovoltaic project in India.

Which of the statements given above is/are correct?

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

Ans) b

Exp) Option b is the correct answer.

Statement 1 is incorrect: Rajasthan tops the list of solar park installations in the country followed by Karnataka and then Andhra Pradesh. **Bhadla Solar Park in Rajasthan**, with a capacity of 2245 MW, is the world's largest solar park.

Statement 2 is correct: Cochin International Airport, India's first airport built under a public-private-partnership (PPP) model, becomes the **first airport in the world that operates completely on solar power**. This plant is the first Megawatt scale installation of a Solar PV system in the State of Kerala

Statement 3 is incorrect: **Andhra Pradesh** is now home to India's largest floating solar power plant. State-run NTPC started operations at India's largest floating solar PV project at its Simhadri thermal station in Visakhapatnam.

Source: <https://www.hindustantimes.com/cities/jaipur-news/rajasthan-leads-solar-installed-capacity-in-india-govt-report-101632399358078.html>

[https://www.icao.int/environmental-](https://www.icao.int/environmental-protection/Documents/EnvironmentalReports/2016/ENVReport2016_pg177-177.pdf)

[protection/Documents/EnvironmentalReports/2016/ENVReport2016_pg177-177.pdf](https://www.icao.int/environmental-protection/Documents/EnvironmentalReports/2016/ENVReport2016_pg177-177.pdf)

<https://economictimes.indiatimes.com/industry/renewables/andhra-now-houses-indias-largest-solar-power-plant/articleshow/85530255.cms>

https://r.search.yahoo.com/_ylt=Awrxz_MipJxi.UYAKgC7HAX.;_ylu=Y29sbwNzZzMEcG9zAzIEdnRpZAMEc2VjA3Nj/RV=2/RE=1654461603/RO=10/RU=https%3a%2f%2fmercomindia.com%2ftop-solar-parks-india-infographics%2f/RK=2/RS=ozsf6i3nxKhey7hGLvdBOSzEaLI-

Q.85) With reference to the United Nations Convention on the Law of Sea, consider the following statements:

1. A coastal state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baseline determined in accordance with the convention.
2. Ships of all states, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.
3. The Exclusive Economic Zone shall not extend beyond 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.

Which of the statements given above are correct?

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

Ans) d

Exp) Option d is the correct answer.

Statement 1 is correct: According to Article 3 under section 2 of United nations conventions (UNCLOS) regarding the territorial limits of the sea- every state has the right to establish the breadth of its territorial sea up to a **limit not exceeding 12 nautical miles**, measured from baselines determined in accordance with this Convention.

Statement 2 is correct: According to Article 17 under section 3 of United nations conventions (UNCLOS) **ships of all States, whether coastal or land-locked, enjoy the right of innocent passage** through the territorial sea.

Statement 3 is correct: The 1982 United Nations Convention on the Law of the Sea (UNCLOS) defines an Exclusive Economic Zone (EEZ). It is an area that **shall not extend beyond 200 nautical miles from the baselines**. The EEZ is measured from the breadth of the territorial sea.

Source: https://www.un.org/depts/los/convention_agreements/texts/unclos/part2.htm

[https://blog.forumias.com/exclusive-economic-zoneeez-of-](https://blog.forumias.com/exclusive-economic-zoneeez-of-india/#:~:text=The%201982%20United%20Nations%20Convention%20on%20the%20Law,measured%20from%20the%20breadth%20of%20the%20territorial%20sea)

[india/#:~:text=The%201982%20United%20Nations%20Convention%20on%20the%20Law,measured%20from%20the%20breadth%20of%20the%20territorial%20sea](https://blog.forumias.com/exclusive-economic-zoneeez-of-india/#:~:text=The%201982%20United%20Nations%20Convention%20on%20the%20Law,measured%20from%20the%20breadth%20of%20the%20territorial%20sea)

Q.86) Which one of the following statements best reflects the issue with Senkaku Islands, sometimes mentioned in the news?

- It is generally believed that they are artificial islands made by a country around South China Sea.
- China and Japan engage in maritime disputes over these islands in East China Sea.
- A permanent American military base has been set up there to help Taiwan to increase its defence capabilities.
- Though International Court, of Justice declared them as no man's land, some South-East Asian countries claim them.

Ans) b

Exp) Option b is the correct answer

Senkaku Islands are a group of uninhabited islands in the **East China Sea**. **Japan and China claim the uninhabited islands, known as the Senkaku in Japan and TiaoYu in China**, as their own, but Japan has administered them since 1972. The Senkaku/Diaoyu Islands were formally claimed by Japan in 1895. After Japan's defeat in World War II, the island chain was controlled by the US until 1971 before its return. Since then, **Japan has administered the island chains**. China began to reassert claims over the Senkaku/Diaoyu Islands in the 1970s, citing historic rights to the area. However, **Japan does not recognise Chinese claims**. More recently, there has been a flare up in the region.



Source: https://www.mofa.go.jp/a_o/c_m1/senkaku/page1we_000010.html

Q.87) Consider the following pairs:

Country	Important reason for being in the news recently
1. Chad	Setting up of permanent military base by China
2. Guinea	Suspension of Constitution and Government by military
3. Lebanon	Severe and prolonged economic depression
4. Tunisia	Suspension of Parliament by President

How many pairs given above are correctly matched?

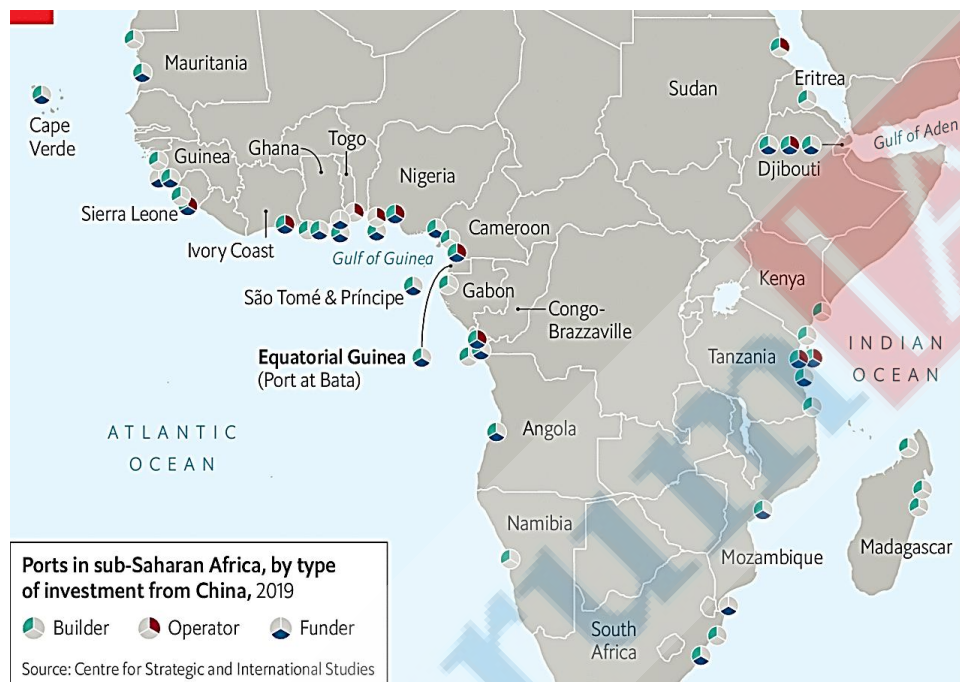
- Only one pair
- Only two pairs

- c) Only three pairs
- d) All four pairs

Ans) c

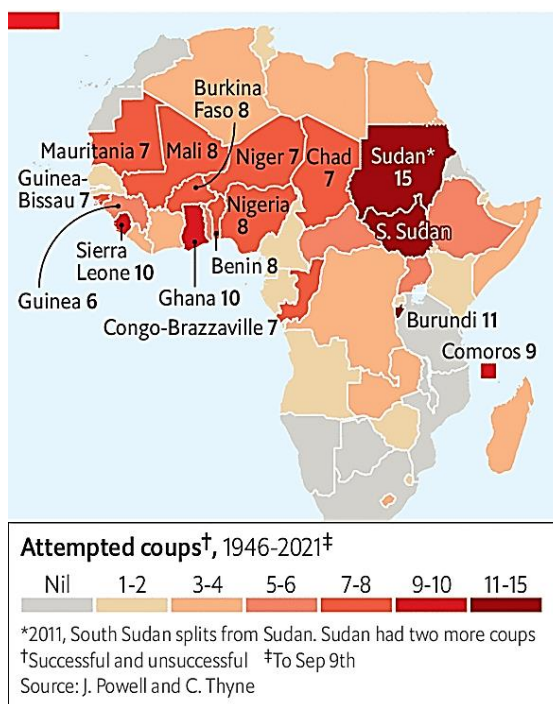
Exp) Option c is the correct answer

Pair 1 is incorrectly matched: Classified American intelligence reports suggest China intends to establish its **first permanent military presence** on the Atlantic Ocean in the tiny **Central African country of Equatorial Guinea**, according to U.S. officials. China does not have any permanent military base in Chad. In 2017, in the middle of its three-year ramping up of military assistance and economic investment, China established its **first overseas military base in Djibouti**, on the coast of the Horn of Africa.



The Economist

Pair 2 is correctly matched: Guinean special forces in September 2021 **staged a coup, capturing President Alpha Conde and announcing a nationwide curfew** "until further notice" as well as the **replacement of governors by the military**. After putting Guinea back under military rule for the first time in over a decade, the junta said Guinea's governors were to be replaced by regional commanders. A nightly curfew was put in place, and the **country's constitution and National Assembly were both dissolved**.



The Economist

Pair 3 is correctly matched: The **Lebanese government's decision** to impose new taxes in October 2019 sparked nation-wide protests by a **population exhausted by poor public services, worried about increasing national debt** and frustrated by widespread corruption. Since then, Lebanese politics have been marked by political deadlock that has prevented successive governments from implementing urgent reforms. **Lebanon's severe and prolonged economic depression** is, according to the World Bank, 'likely to rank in the top 10, possibly top 3, most severe crisis episodes globally since the mid-nineteenth century'. Poverty in Lebanon has spread dramatically over the past year and now affects about 74 % of the population.

Pair 4 is correctly matched: Tunisian President Kais Saied on March 2022 announced that he was dissolving the suspended parliament. The decision came after 124 of 217 members of parliament held an online meeting despite the suspension. Tunisian President Kais Saied slammed what he called a **"failed coup attempt"** after lawmakers convened online and voted to repeal presidential decrees that gave him near-total power.

Source: <https://constitutionnet.org/news/guinea-military-leaders-detain-president-declaring-dissolution-government-and-suspension>

<https://www.thehindu.com/news/international/army-takes-over-power-in-guinea/article36319938.ece>

China Seeks First Military Base on Africa's Atlantic Coast, U.S. Intelligence Finds - WSJ (for pair 1)

[https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2022\)729369](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2022)729369) (For Pair 3)

<https://www.dw.com/en/tunisia-president-announces-dissolution-of-parliament/a-61310969> (for pair 4)

Q.88) Consider the following pairs:

Region often mentioned in the news Country

- | | |
|-----------------|----------|
| 1. Anatolia | Turkey |
| 2. Amhara | Ethiopia |
| 3. Cabo Delgado | Spain |
| 4. Catalonia | Italy |

How many pairs given above are correctly matched?

- a) Only one pair
- b) Only two pairs
- c) Only three pairs
- d) All four pairs

Ans) b

Exp) Option b is the correct answer

Pair 1 is correctly matched: Anatolia, also called Asia Minor, the peninsula of land that today constitutes the **Asian portion of Turkey**. Because of its location at the point where the continents of Asia and Europe meet, Anatolia was, from the beginnings of civilization, a crossroads for numerous peoples migrating or conquering from either continent.



Pair 2 is correctly matched: The Amhara Region is a regional state in northern Ethiopia and the homeland of the Amhara people. Its capital is Bahir Dar which is the seat of the Regional Government of Amhara. Amhara is bordered by Sudan to the west and northwest and by other the regions of Ethiopia: Tigray to the north, Afar to the east, Benishangul-Gumuz to the west and southwest, and Oromia to the south.



Pair 3 is incorrectly matched: Cabo Delgado is the northernmost province of Mozambique (not Spain). The region is an ethnic stronghold of the Makonde tribe, with the Makua and Mwani as leading ethnic minorities.



Pair 4 is incorrectly matched: Catalonia occupies a triangular area in the north-eastern corner of Spain (not Italy). Catalonia was formerly a principality of the crown of Aragon, and it has played an important role in the history of the Iberian Peninsula. From the 17th century it was the centre of a separatist movement that sometimes-dominated Spanish affairs.



Source: Anatolia | Definition, History, Map, People, & Facts | Britannica

Catalonia | Geography, Points of Interest, Independence Movement, & History | Britannica

<https://www.unicef.org/esa/sites/unicef.org.esa/files/2019-05/UNICEF-Ethiopia-2018-Amhara-Regional-State-Budget-Brief.pdf>

<https://www.crisisgroup.org/africa/southern-africa/mozambique>

Q.89) With reference to Indian laws about wildlife protection, consider the following statements:

1. Wild animals are the sole property of the government.
2. When a wild animal is declared protected, such animal is entitled for equal protection whether it is found in protected areas or outside.
3. Apprehension of a protected wild animal becoming a danger to human life is sufficient ground for its capture or killing.

Which of the statements given above is/are correct?

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

Ans) a

Exp) Option a is the correct answer

Statement 1 is correct: According to **Section 39 of Wild Life (Protection) Act, 1972, Every Wild Animal** shall be the **property of the State Government**, and, where such animal is hunted in a sanctuary or National Park declared by the Central Government, such animal or any animal article, trophy, uncured

trophy or meat [derived from such animal, or any vehicle, vessel, weapon, trap or tool used in such hunting] shall be the property of the Central Government.

Statement 2 is correct: The law governing the subject of wildlife, the Wildlife (Protection) Act, 1972, does not discriminate between animals found in protected areas and outside. It provides for **equal protection for wild animals irrespective of where they are found.**

Statement 3 is incorrect: According to Wildlife Protection Act, 1972, **only if the wild animal becomes a danger to human life or is diseased or disabled beyond recovery can it be allowed to be captured or killed** by the competent authority, the Chief Wildlife Warden of the State. This provision is applicable to wild animals listed in Schedule I of the Wildlife (Protection) Act, 1972, which includes leopards. **Mere apprehension or fear that a wild animal could endanger human life is not a ground for capture or killing.**

Source:

[https://www.advocatekhaj.com/library/bareacts/wildlife/39.php?Title=Wild%20Life%20\(Protection\)%20Act,%201972&STitle=Wild%20animals,%20etc.,%20to%20be%20Government%20property](https://www.advocatekhaj.com/library/bareacts/wildlife/39.php?Title=Wild%20Life%20(Protection)%20Act,%201972&STitle=Wild%20animals,%20etc.,%20to%20be%20Government%20property) (statement 1)

Leopards in a spot - The Hindu (statement 2 and 3)

Q.90) Certain species of which one of the following organisms are well known as cultivators of fungi?

- a) Ant
- b) Cockroach
- c) Crab
- d) Spider

Ans) a

Exp) Option a is the correct answer

The **fungus-growing ants** are a New World group of less than 200 species, all obligate symbionts with a fungus they use for food. These ants are found across the American continents and the West Indies. These ants are known as fungus growers because **they maintain an obligate mutualism with fungi cultured inside their nests**, and which is the only food source for the larvae and an important resource for the adult ants as well

Source: <https://www.science.org/doi/10.1126/science.153.3736.587>

Fungus growing ants - AntWiki

Q.91) Consider the following pairs:

Site of Ashoka's major rock edicts	Location in the State of
1. Dhauli	Odisha
2. Erragudi	Andhra Pradesh
3. Jaugada	Madhya Pradesh
4. Kalsi	Karnataka

How many pairs given above are correctly matched:

- a) Only one pair
- b) Only two pairs
- c) Only three pairs
- d) All four pairs

Ans) b

Exp) Option b is the correct answer.

The Edicts of Ashoka are a collection of 33 inscriptions on the Pillars of Ashoka as well as boulders and cave walls made by the Emperor Ashoka of the Mauryan Empire during his reign from 269 to 232 BC

Pair 1 is correctly matched: Dhauli Rock edict is located in dhauli hills, close to 10 kms from **Bhubneshwar in Odisha**. The edicts are engraved on a large piece of rock, written in Pali. The rock edict is located near the historical site of the Kalinga war which is said to transform Samrat Ashoka

Pair 2 is correctly matched: Erragudi or Yerragudi rock edict is located in **Kurnool district in Andhra Pradesh**. The inscriptions were one of the important treasures of Mauryan king Ashoka (269-231 BCE) falling under major and minor rock inscriptions.

Pair 3 is incorrectly matched: Jaugada is the **second place in Odisha** where there is a major Ashokan rock edict. Ashoka's inscription in Jaugada is on a rock face about 30 feet long and 15 feet high. The rock edict inscriptions, engraved in Prakrit language in Brahmi script, have information about the better administrative policies based on Ashoka's humanitarian consideration.

Pair 4 is incorrectly matched: Kalsi is a small town located in between Chakrata and Dehradun on the banks of Yamuna River in **Uttarakhand**. The site of Ashoka's inscriptions at Kalsi is singularly unique as it is the only place in North India where the great Mauryan emperor has inscribed the set of the 14 rock edicts.

Source: Nitin Singhania Chapter 11 INDIAN ARCHITECTURE, SCULPTURE AND POTTERY

ASI to develop Ashoka rock site as tourist spot - The Hindu

Odisha Tourism : Jaugada - Ashokan Major Rock Edict In Odisha

Q.92) Consider the following pairs:

King	Dynasty
1. Nanuka	Chandela
2. Jayashakti	Parmara
3. Nagabhata 2	Gurjara-Pratihara
4. Bhoja	Rashtrakuta

How many pairs given above are correctly matched:

- a) Only one pair
- b) Only two pairs
- c) Only three pairs
- d) All four pairs

Ans) b

Exp) Option b is the correct answer.

The Chandellas of Bundelkhand trace their descent to a mythical ancestor named Chandratreya, born of the moon. The Chandellas initially ruled as feudatories of the Gurjara-Pratiharas of Kannauj, and were involved in conflicts with the Pratiharas, the Palas, and the Kalachuris of Chedi (who bordered the Chandellas on the south).

Pair 1 is correct and pair 2 is incorrect: In the first quarter of the 9th century CE, the Chandella dynasty was founded by Nannuka, who was the ruler of a small kingdom and established his capital at Kharjjuravahaka (Khajuraho).

Jayashakti and Vijayashakti (c. 865-885 CE) Vakpati's sons Jayashakti (Jeja) and Vijayashakti (Vija) consolidated the Chandella power.

Pair 3 is correct The Pratiharas were also known as the Gurjara-Pratiharas, as they originated from the Gurjaras who were primarily pastoralists and fighters. Nagabhata II (reigned c. 793-833) was Vatsaraja's successor, he reorganized Pratihara power, attacked Kannauj. However, soon afterward he was defeated by the Rashtrakuta king Govinda III (reigned 793-814). **Nagabhata II was succeeded by his son Ramabhadra, who ruled briefly, and was succeeded, by his son Mihira Bhoja.**

Pair 4 is incorrect: Bhoja I / Mihir Bhoja (c.836-885 CE) Grandson of Nagabhata II, who had a long reign of over 46 years and proved to be the most successful and popular ruler of Pratiharas. In the early years of his reign he was defeated by the Palas, Rashtrakutas and the Kalachuris, but he

subsequently made a comeback. With the aid of feudatories such as the Chedis and the Guhilas, he won victories over the rashtrakutas.

Source- Poonam dalal dahiya. <https://www.britannica.com/place/India/Southern-India#ref485472>

Q.93) Which one of the following statements about Sangam literature in ancient South India is correct?

- a) Sangam poems are devoid of any reference to material culture.
- b) The social classification of Varna was known to Sangam poets.
- c) Sangam poems have no reference to warrior ethic.
- d) Sangam literature refers to magical forces as irrational.

Ans) b

Exp) Option b is the correct answer.

sangam literature are the earliest writings in the Tamil language, thought to have been produced in three chankams, or literary academies, in Madurai, India, from the 1st to the 4th century CE.

Statement a is incorrect. Sangam poems contain several incidental references to material culture, often as part of the poem's setting or in similes and allusions. There are references to farming (rice and barley are mentioned), cattle rearing, and fishing. There are also several references to iron. Kuruntokai 16 refers to iron-tipped arrows. Akananuru 72 compares a bear digging out the comb from a termite mound, the front of which is swarming with fireflies glimmering like sparks from beaten metal, to a blacksmith forging iron.

Statement b is correct. The social classification of varna was known to Sangam poets. There is mention of the Arashar (kings), Vaishiyar (traders), and Velalar (farmers). The Brahmanas are also mentioned, some of them closely associated with the courts of kings and patronized by ruling elites. However, the four-fold varna classification had little application to ancient Tamil society. The jati system was not a feature of this society either.

Statement c is incorrect. Sangam Poems are pervaded with a warrior ethic. Puram in sangam literature are the War Poems that deals with the outer life of people. Speak of public celebration of the feats of the heroes even the death of heroes in wars.

Statement d is incorrect. Sangam literature reflects a belief in sacred or magical forces called ananku that were supposed to inhabit various objects. The job of carrying out rites and rituals to control the ananku was that of groups such as the pariyans, tutiyans, panas and velans. They were associated with ritualistic singing, dancing, and trances, and with lighting the cremation fire and worshipping memorial stones.

Source:

https://books.google.co.in/books?id=H3IUIIYxWkEC&pg=PA424&lpg=PA424&dq=sangam+literature+refers+to+magical+forces&source=bl&ots=xg9z4NeTel&sig=ACfU3U2-FBw8jamLhuRqW29vdf9uJTCVmg&hl=en&sa=X&ved=2ahUKEwjfK_q95X4AhWO-jgGHwUDTsQ6AF6BAbEAM#v=onepage&q=sangam%20literature%20refers%20to%20magical%20forces&f=false

Q.94) "Yogavasistha" was translated into Persian by Nizamuddin Panipati during the reign of:

- a) Akbar
- b) Humayun
- c) Shajahan
- d) Aurangzeb

Ans) a

Exp) Option a is the correct answer.

Coinciding with the foundation of Ibadat Khana, Akbar established his translation bureau (maktab khana) in 1574-1575 at Fathpur Sikri and attached it to the royal library. Largely Sanskrit texts were

translated into Persian. However, Persian translations of some Arabic and Turkish texts were also carried out. The translation project in Akbar's court probably began in 1575-1576 with the arrival of Shaikh Bhawan, a Brahman convert, to Akbar's court.

Nizam Panipati translated Yogavasistha (a treatise on Vedantic philosophy) as an appendix to Ramayana and dedicated it to Prince Salim during the Akbars reign.

Source:

https://books.google.co.in/books?id=ZGZoEAAAQBAJ&pg=PP24&lpg=PP24&dq=yogavasistham+was+translated+into+persion+by+nizamuddin+panipati+during+the+reign+of&source=bl&ots=RmWBZIRk9P&sig=ACfU3U3-fHgxlf_z9WglicTK33Vu8at3-A&hl=en&sa=X&ved=2ahUKewjy6qf-ZX4AhWDUGwGHYZjBQEQ6AF6BAGVEAM#v=onepage&q=yogavasistham%20was%20translated%20into%20persion%20by%20nizamuddin%20panipati%20during%20the%20reign%20of&f=false
<https://www.egyankosh.ac.in/bitstream/123456789/77557/1/Unit-1.pdf>

Q.95) The world's second tallest statue in sitting pose of Ramanuja was inaugurated by the Prime Minister of India at Hyderabad recently. Which one of the following statements correctly represents the teachings of Ramanuja?

- The best means of salvation was devotion.
- Vedas are eternal, self-existent and wholly authoritative.
- Logical arguments were essential means for the highest bliss.
- Salvation was to be obtained through meditation.

Ans) a

Exp) Option a is the correct answer.

Ramanuja was deeply influenced by the Alvars. **He firmly believed that intense devotion to Vishnu was the best means to attain salvation.** He propounded the doctrine of Vishishtadvaita.

- The outdoor 216-ft Statue of Equality will be the world's second tallest statue featuring a sitting posture. It is composed of 'panchaloha', a combination of five metals comprising gold, silver, copper, brass, and zinc. Born in 1017 in Sri Perumbudur, Tamil Nadu, Sri Ramanujacharya liberated millions from social, cultural, gender, educational and economic discrimination with the foundational conviction that every human is equal regardless of nationality, gender, race, caste, or creed.

Source: <https://www.newindianexpress.com/cities/hyderabad/2022/jan/20/216-feet-statue-of-equality-in-hyderabad-to-be-unveiled-by-pm-on-february-5-details-here-2409195.html>

https://www.excellup.com/sudha_r/7_history/7_history_chapter_8_2.aspx

Q.96) The Prime Minister recently inaugurated the new Circuit House near Somanath Temple at Verval. Which of the following statements are correct regarding Somnath Temple?

- Somnath Temple is one of the Jyotirlinga shrines
- A description of Somnath Temple was given by Al-Biruni.
- Pran Pratistha of Somnath Temple (installation of the present-day temple) was done by President S. Radhakrishnan.

Select the correct answer using the code given below:

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

Ans) a

Exp) Option a is the correct answer.

Statement 1 is correct. Located at Veraval in the western coast of Gujarat, **the Somnath Temple is believed to be the first among the 12 jyotirlinga shrines of Shiva.** The site, which was part of the erstwhile princely state of Junagadh, was also connected to Lord Krishna. The political history of the shrine is traced back to a thousand years when in 1024 CE, during the reign of the Chalukya king Bhima I it was attacked by Turkik ruler Mahmud of Ghazni.

Statement 2 is correct. A description of the temple by Al-Biruni, an Arab traveller, was so glowing that it prompted a visit in 1024 by Mahmud of Ghazni.

Statement 3 is incorrect. The later sources of history account for several desecrations by Muslims invaders during eleventh to eighteen century A.D. The temple was rebuilt every time with the reconstructive spirit of the people. The modern temple was reconstructed with the resolve of Sardar Patel who visited the ruins of Somnath temple on November 13 1947. **Then President of India, Dr. Rajendra Prasad, did the Pran-Pratistha at the existing temple on 11 May 1951.**

Source: <https://somnath.org/Home/Somnath-Darshan>

<https://www.gujarattourism.com/saurashtra/gir-somnath/somnath-temple.html#:~:text=The%20large%2C%20black%20Shiva%20lingam,Mahmud%20of%20Ghazni%20of%20Afghanistan.>

<https://indianexpress.com/article/research/how-past-reconstructions-of-somnath-temple-have-reflected-politics-of-the-time-7477430/>

Q.97) Which one of the following statements best describes the role of B cells and T cells in the human body?

- They protect the body from environmental allergens.
- They alleviate the body's pain and inflammation.
- They act as immunosuppressants in the body.
- They protect the body from the diseases caused by pathogens.

Ans) d

Exp) Option d is the correct answer.

Lymphocytes are a type of white blood cells. They play a critical role in keeping us healthy. Without them, we can't survive.

- T cells protect us from infection. In our daily lives, we're constantly exposed to pathogens, such as bacteria, viruses and fungi.** Without T lymphocytes, also called T cells, every exposure could be life-threatening. T cells can wipe out infected or cancerous cells. They also direct the immune response by helping B lymphocytes to eliminate invading pathogens.
- B cells create antibodies. B lymphocytes, also called B cells, create a type of protein called an antibody.** These antibodies bind to pathogens or to foreign substances, such as toxins, to neutralize them. For example, an antibody can bind to a virus, which prevents it from entering a normal cell and causing infection. B cells can also recruit other cells to help destroy an infected cell.

<https://www.mdanderson.org/cancerwise/t-cells--b-cells-and-the-immune-system.h00-159465579.html#:~:text=T%20cells%20can%20wipe%20out,of%20protein%20called%20an%20antibody.>

Q.98) Consider the following statements:

- Other than those made by humans, nanoparticles do not exist in nature.
- Nanoparticles of some metallic oxides are used in the manufacture of some cosmetics.
- Nanoparticles of some commercial products which enter the environment are unsafe for humans.

Which of the statements given above is/are correct?

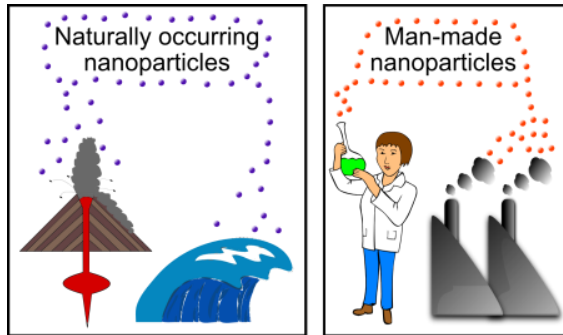
- 1 only
- 3 only
- 1 and 2

d) 2 and 3

Ans) d

Exp) Option d is the correct answer.

Statement 1 is incorrect: Naturally occurring nanoparticles can be found in volcanic ash, ocean spray, fine sand and dust, and even biological matter (e.g. viruses). Synthetic nanoparticles are equally, if not more diverse than their naturally occurring counterparts.



Statement 2 is correct: The field of nanotechnology is being greatly explored by cosmetic industries in order to improve the efficacy of cosmetic products. The cosmetics are formulated by using different types of metal and metal oxide nanoparticles such as silver nanoparticles (AgNPs), gold nanoparticles (AuNPs) and titanium dioxide nanoparticles (TiO₂ NPs), zinc oxide nanoparticles, (ZnO NPs), iron oxide nanoparticles, (Fe₂O₃ NPs) and carbon-based NPs. The applications of different metal oxides as one of the active ingredients in cosmetics and sunscreens have attracted enormous interest from cosmetologists with advanced knowledge of chemistry, toxicology, dermatology, rheology, and even marketing.

Statement 3 is correct: According to the National Nanotechnology Initiative thousands of tons of silica, alumina and ceria, in the form of ultrafine abrasive particle mixtures including nanoparticles, are used each year in slurries for precision polishing of silicon wafers. The exposed population to nano materials continues to increase as their application expands. Despite obvious benefits of the power of small materials, there are open questions about how the nanoparticles used for day-to-day life may affect the environment. **One of the crucial issues that have to be addressed in the near future, before massive fabrication of nano materials, is their toxicity to humans and impact on the environment.**

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2844666/>

<https://sustainable-nano.com/2013/03/25/nanoparticles-are-all-around-us/>

Q.99) Consider the following statements:

DNA Barcoding can be a tool to:

1. Assess the age of a plant or animal.
2. Distinguish among species that look alike.
3. Identify undesirable animal or plant materials in processed foods.

Which of the statements given above is/are correct?

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

Ans) d

Exp) Option d is the correct answer.

DNA barcoding is a molecular technology that allows the identification of any biological species by amplifying, sequencing and querying the information from genic and/or intergenic standardized target regions belonging to the extranuclear genomes

Option 1 is incorrect: Geologists use the radiometric dating of uranium and the isotopes of other radioactive elements, combined with observations of fossils and sediment layers, to chart the course of Earth's natural history and the evolution of life. **To measure the age of plant and animal remains from the more recent past, scientists use a radioactive isotope of carbon, called carbon-14,** as their clock. As carbon-14 decays, with a half-life of about 5,730 years, it becomes nitrogen-14. Using this clock, they have dated bones, campfires and other objects as old as 60,000 years, and in some cases even older.

Option 2 is correct: DNA barcodes allow non-experts to objectively identify species – even from small, damaged, or industrially processed material. Just as the unique pattern of bars in a universal product code (UPC) identifies each consumer product, a “DNA barcode” is a unique pattern of DNA sequence that can potentially identify each living thing.

Option 3 is correct. cpDNA and mtDNA barcoding protocols are being used more and more in the food industry and food supply chains for food labeling, not only to support food safety but also to uncover food piracy in freshly commercialized and technologically processed products. DNA barcoding helps to identify undesirable animal or plant materials in processed foods.

Source: <https://www.pnas.org/doi/10.1073/pnas.0503123102>

<https://dnabarcoding101.org/lab/>

<https://www.frontiersin.org/articles/10.3389/fevo.2021.626752/full>

<https://www.mdpi.com/1424-2818/8/1/2/pdf>

Q.100) Consider the following:

1. Carbon monoxide
2. Nitrogen oxide
3. Ozone
4. Sulphur dioxide

Excess of which of the above in the environment is/are cause(s) of acid rain?

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

Ans) b

Exp) Option b is the correct answer.

The pollutants, Sulphur dioxide, nitrogen oxide which are released by burning of coal and petroleum products combine with moisture in the air and rain water and produce Sulphuric acid and nitric acid respectively and fall along with the rain called as acid rain. The acid rain pollute soil, water and reduces the growth of crops and fishes in river, streams, canals and ponds. It also stops the growth of plants and destroys: the buildings made of marble and stones and statues made up of metals, Acid rain can cause respiratory problems such as asthma, bronchitis and emphysema.

Source: <https://egyankosh.ac.in/bitstream/123456789/34290/1/Unit-3.pdf>