



**3rd
Edition**

Think **IAS**. Think **Drishti**.

UPSC

Civil Services Examination

Prelims GS Paper-I

**Previous
14 Years' (2008-21)**

Topic-wise Solved Question Papers

HIGHLIGHTS

- ▶ Solutions as per the official UPSC Answer Key
- ▶ Detailed Explanations for Comprehensive Coverage
- ▶ Unique Option Centric Approach
- ▶ Trend Analysis of Past 14 Years Question Papers
- ▶ Detailed Analysis of 2021 Prelims GS Question Paper



Think IAS. Think Drishti.

UPSC CIVIL SERVICES EXAMINATION (PRELIMS) PREVIOUS 14 YEARS' SOLVED PAPERS (2008-2021)



Drishti Publications

(A Unit of VDK Publications Pvt. Ltd.)

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Website

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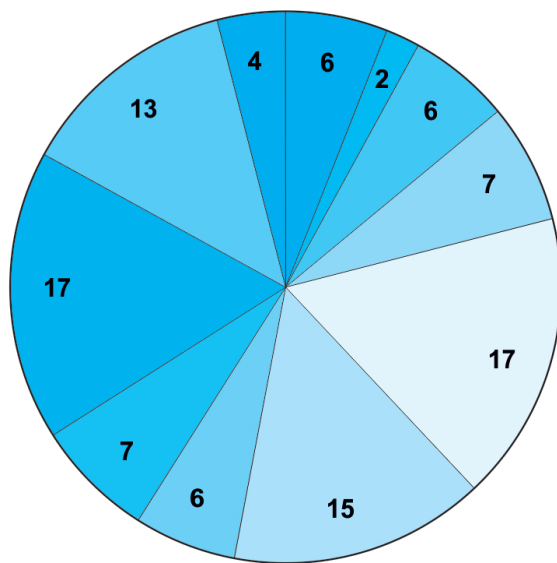
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UPSC CSE (PRE) 2021

GS PAPER-I

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	Language and Literature	2
	Miscellaneous	1
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Medieval India	NA	6
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Subject	Topic	Q
Indian Geography	Physiography	1
	Drainage System	3
	Natural Vegetation and Agriculture	2
World Geography	Climatology	1
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	Resources of The World	3
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Environment & Ecology	Ecosystem	6
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Science & Technology	Basic Sciences	1
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- Art & Culture (6)
- Ancient India (2)
- Medieval India (6)
- Modern India (7)
- Polity & Governance (17)
- Economy (15)
- Indian Geography (6)
- World Geography (7)
- Environment & Ecology (17)
- Science & Technology (13)
- Current Affairs/Miscellaneous (4)

Subject-wise Distribution of Questions

UPSC CSE (PRE) 2021

GS PAPER-I

1. With reference to the history of ancient India, Bhavabhuti, Hastimalla and Kshemeshvara were famous

(a) Jain monks (b) playwrights
(c) temple architects (d) philosophers

Ans: (b)

- Bhavabhuti was a famous Indian dramatist, poet and scholar during the 8th century. He passed his literary life chiefly at the court of King Yashovarman of Kannauj. Bhavabhuti is best known as the author of three plays: Mahaviracharita, Malatimadhava and Uttararamacharita. He is described as an 'Udumbara Brahmin'.
- Hastimalla was a Jain poet in the court of the Solanki rulers. He wrote Purvapurana.
- Kshemeshwara was the court poet of Mahipala of Kannauj.

Therefore, option (b) is the correct answer.

2. Consider the following statements:

1. The Montagu-Chelmsford Reforms of 1919 recommended granting voting rights to all the women above the age of 21.
2. The Government of India Act of 1935 gave women reserved seats in the legislature.

Which of the statements given above is/are correct?

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

Ans: (b)

- In 1918, Edwin Montagu, the Secretary of State, and Lord Chelmsford, the Viceroy, produced their scheme of constitutional reforms, known as the Montagu-Chelmsford (or Mont-Ford) Reforms, which led to the enactment of the Government of India Act of 1919. The sole purpose of this Act was to ensure Indians their representation in the Government. The Act introduced reforms at the Central as well as Provincial levels. Some key reforms were:
 - Dyarchy was introduced and the Governor was made the executive head of the province.
 - The subjects were divided into two lists – reserved and transferred.

- The size of the provincial legislative assemblies was increased and there were communal and class electorates.

- Some women could also vote. **Hence, statement 1 is not correct.**

- The Governor's assent was required to pass any bill. He also had veto power and could issue ordinances also.

- The Government of India Act, 1935 abolished the system of provincial dyarchy. Instead, it provided for dyarchy at the Centre. It also provided for a 'Federation of India' consisting of the provinces of British India and most of the princely states.

- The Act extended the principle of communal representation by providing separate electorates for depressed classes (scheduled castes), women and workers. **Hence, statement 2 is correct.**

Therefore, option (b) is the correct answer.

3. With reference to 8th August, 1942 in Indian history, which one of the following statements is correct?

- (a) The Quit India Resolution was adopted by the AICC.
(b) The Viceroy's Executive Council was expanded to include more Indians.
(c) The Congress ministries resigned in seven provinces.
(d) Cripps proposed an Indian Union with full Dominion Status once the Second World War was over.

Ans: (a)

- On 8th August, 1942, Mahatma Gandhi gave the clarion call to end the British rule and launched the Quit India Movement at the session of the All-India Congress Committee in Mumbai. Gandhiji gave the call "Do or Die" in his speech delivered at the Gowalia Tank Maidan, now popularly known as August Kranti Maidan.
- The Indian Councils Act 1909 or the Morley-Minto Reforms was an act of the British Parliament that introduced a few reforms in the legislative councils and increased the involvement of Indians in the governance of British India. The Indian Councils Act,

1909 empowered the Governor General to nominate one Indian member to the Executive Council leading to the appointment of Satyendra Sinha as the first Indian member. The Government of India Act, 1919 increased the number of Indians in the council to three.

- The Congress ministries resigned in seven provinces in 1939, in protest against Viceroy Lord Linlithgow's action of declaring India to be belligerent in the Second World War. The British Government felt relieved by the resignation of the Congress ministers because they controlled eight out of the eleven provinces and had the power to impair the war efforts of the Government.
- The Cripps Mission was sent to India by the British government in March, 1942 to obtain Indian cooperation for the British war efforts in the second World War. It was headed by Sir Stafford Cripps. Some of the recommendations of the Mission included:
 - An Indian Union with a dominion status would be set up;
 - India would be free to decide its relations with the Commonwealth and free to participate in the United Nations and other international bodies.
 - After the end of the war, a constituent assembly would be convened to frame a new constitution.

Therefore, option (a) is the correct answer.

4. Who among the following is associated with 'Songs from Prison', a translation of ancient Indian religious lyrics in English?
- (a) Bal Gangadhar Tilak
(b) Jawaharlal Nehru
(c) Mohandas Karamchand Gandhi
(d) Sarojini Naidu

Ans: (c)

"Songs From Prison: Translations Of Indian Lyrics Made In Jail" was the collection of songs and lyrics by Mohandas Karamchand Gandhi, written during his imprisonment in Yerwada Jail, Poona. It was published by John Hoyland.

Therefore, option (c) is the correct answer.

5. With reference to medieval India, which one of the following is the correct sequence in ascending order in terms of size?
- (a) Paragana – Sarkar – Suba
(b) Sarkar – Paragana – Suba
(c) Suba – Sarkar – Paragana
(d) Paragana – Suba – Sarkar

Ans: (a)

- The Mughals in India had an elaborate administrative setup. The emperor was the head of the central administration aided by different officials like Mir Bakshi, Diwan etc. The empire was divided into provinces called subas. The head of the provincial administration was the governor (subadar) who reported directly to the emperor.
- Each suba was divided into sarkar. It often overlapped with the jurisdiction of faujdars (commandants) who were deployed with contingents of heavy cavalry and musketeers in districts.
- The local administration was looked after at the level of the pargana (sub-district) by three semi-hereditary officers, the qanungo (keeper of revenue records), the chaudhuri (in charge of revenue collection) and the qazi.

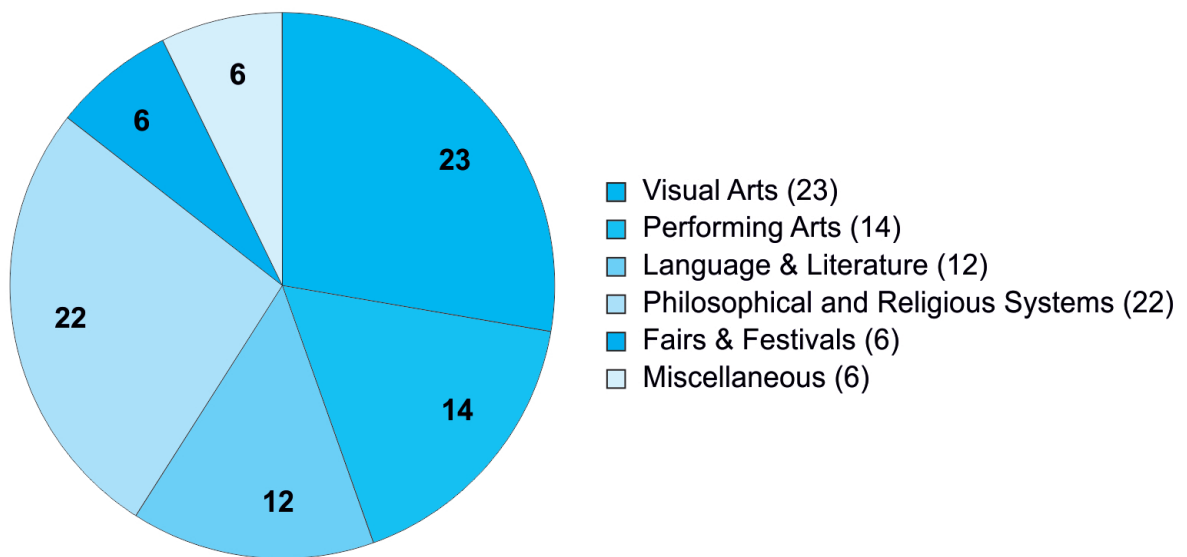
List of of Officers in Mughal Administration

Administrative Unit	Officers
Province (Subha)	<ul style="list-style-type: none"> • Sipahsalar: Head consecutive (Under Akbar and later was known as Nizam of Subedar) • Diwan: Incharge of revenue department. • Bakshi: Incharge of military department.
District	<ul style="list-style-type: none"> • Fauzdar: Administrative Head • Amal/Amalguzar: Revenue collection • Kotwal: Maintenance of law and order, trail of criminal cases and price regulation.
Pargana	<ul style="list-style-type: none"> • Shiqdar: Administrative head combined in himself the duties of faudar and kotwal • Amln Qanungo: Revenue officials.
Village	<ul style="list-style-type: none"> • Muqaddam: Headman • Patwari: Accountant • Chowkidar: Watchman

- Thus, correct sequence in ascending order in terms of size is Pargana – Sarkar – Suba.

Therefore, option (a) is the correct answer.

ART & CULTURE



VISUAL ARTS

1. Building 'Kalyaana Mandapas' was a notable feature in the temple construction in the kingdom of (2019)

(a) Chalukya (b) Chandela
(c) Rashtrakuta (d) Vijayanagara

Ans: (d)

- Temples of Vijayanagara, centred around Hampi, have the feature of 'Kalyaana Mandapa'.
- One of the greatest monuments of the Vijayanagara period, which dates back to the 16th century, is the Vitthala Temple.
- The Vitthala Temple is built with a spacious courtyard within a walled enclosure with three massive gateways adorned by lofty Gopuras in the north, east and south. In the courtyard are located the main shrine, Devi shrine, Kalyana Mandapa, Utsava Mandapa, a hundred pillared Mandapa and a stone Ratha.
- The Kalyana Mandapa, an open pavilion, was used for ceremonies involving the symbolic marriage of the temple's deity to his consort. Its interior is surrounded by impressive columns and contains a platform in the centre for the performance of sacred dances.

Therefore, option (d) is the correct answer.

2. Consider the following pairs: (2018)

Craft	Heritage of
1. Puthukkuli shawls	— Tamil Nadu
2. Sujni embroidery	— Maharashtra
3. Uppada Jamdani saris	— Karnataka

Which of the pairs given above is/are correct?

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

Ans: (a)

- **Puthukkuli Shawls:** The embroidered textile of the Todas is used as a mantle/shawl or cloak and is called Putkuli in the Toda native language. It is made by

Todas of Nilgiri Hills in Tamil Nadu. Locally called Pugur, meaning flower, the fine and intricate Toda embroidery is done by tribal men and women on shawls. **Hence, pair 1 is correctly matched.**

- **Sujni Embroidery:** Also known as Sujani, it is a form of embroidery originating from the Bhusura village of Bihar in India. In ancient times, it was considered as a form of quilting wherein old saris and dhotis were used as a creative canvas, the cloth was folded twice or thrice and then simple stitches were done on these used clothing to add newness to them. **Hence, pair 2 is not correctly matched.**

- **Uppada Jamdani Saris:** These are diaphanous silk saris that trace their origin to Uppada in Andhra Pradesh. Jamdani itself is a hand woven fabric that is also known as muslin. The word Jamdani roughly translates to flower vase (where 'Jam' means flower and 'Dani' means vase). It is also said that this technique of weaving has Bengali roots. **Hence, pair 3 is not correctly matched.**

Therefore, option (a) is the correct answer.

3. With reference to the cultural history of India, consider the following statements: (2018)

1. White marble was used in making Buland Darwaza and Khankah at Fatehpur Sikri.
2. Red sandstone and marble were used in making Bara Imambara and Rumi Darwaza at Lucknow.

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)

- Buland Darwaza was built in 1601 AD by Akbar to commemorate his conquest of Gujarat. It is 40 metres high and 35 metres wide. The gateway is made of red sandstone and not with white marble. **Hence, statement 1 is not correct.**
- Shaikh Salim Chishti (1478-1572) was one of the most revered Sufi saints of the Mughal period. His

Khanqah (Khankah), or hospice is located near Fatehpur Sikri – which is a simple prayer hall. In 1571, Akbar commissioned tomb of Sufi saint Shaikh Salim Chishti within the Friday Mosque complex at Fatehpur Sikri, which is a white marble structure ornamented and inspired by Gujarati tomb architecture, and includes Hindu, Jain and Islamic elements. Thus, it is the tomb of Shaikh Salim Chishti which saw the use of white marble.

- In 1784, the province of Awadh was struck by a famine of an unprecedented scale. The ruler of Awadh, Nawab Asaf-ud-Daula, came up with a novel way of generating employment. He summoned the best architects of the time and commissioned them to design a grand prayer hall for the city of Lucknow – the Bara Imambara. The whole building was made of Lucknowi bricks and lime plaster. No wood or metal had been used for the construction.
- Rumi Darwaza of Lucknow was constructed in the year 1784 by Nawab Asaf-ud-Daula. It is also known by the name of Turkish Gateway since it is supposed to be identical in design to a similar gateway in ancient Constantinople. Red sand stone and marble have not been used in its construction. **Hence, statement 2 is not correct.**

Therefore, option (d) is the correct answer.

4. The well-known painting “Bani Thani” belongs to the (2018)

- (a) Bundi school (b) Jaipur school
(c) Kangra school (d) Kishangarh school

Ans: (d)

• Kishangarh School

- Bani Thani painting belongs to the Kishangarh School. Kishangarh School (18th century) of Indian painting emerged in the Princely State of Kishangarh (Central Rajasthan).
- The school is clearly distinguished by its individualistic facial type and its religious intensity. The sensitive, refined features of the men and women are drawn with pointed noses and chins, deeply curved eyes, and serpentine locks of hair.
- The brilliant series of paintings on the Radha-Krishna theme were due largely to the inspiration of Raja Savant Singh (reigned 1748–57). He was a poet also, who wrote under the name of Nagari Das.
- The master artist largely responsible for transmitting the romantic and religious passions

of his patron (i.e., Raja Savant Singh) into new and fresh visual images was Nihal Chand.

• Kangra School

- Around mid-18th century, as forces of Nadir Shah (1739) and Ahmad Shah Abdali (1744-1773) pillaged the Mughal capital of Delhi and surrounding areas, the birth of the Kangra School of painting at Haripur-Guler under the patronage of Raja Govardhan Chand (1744-1773) took place as he provided asylum to refugee artists trained in the Mughal style of painting.
- Kangra painting is named after Kangra (Himachal Pradesh), a former Princely State.
- These artists who were traditionally trained in the Mughal style (which predominately featured flattering portraits of their patrons and hunting scenes), now incorporated themes from the love poetry of Jayadeva, Bihari and Keshav Das who wrote ecstatically of the love of Radha and Krishna.

• Bundi School

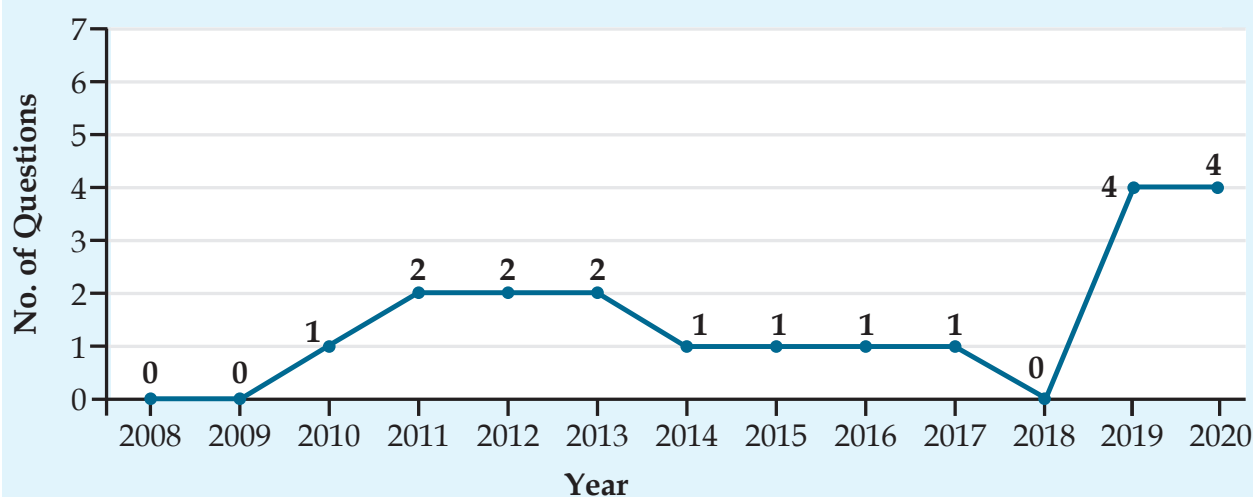
- Between 17th-19th century, Bundi School of painting developed in the Princely State of Bundi and its neighbouring principality of Kotah (now Kota) both in present-day Rajasthan.
- Its characteristic features are dramatic night skies, distinct of depicting water by light swirls against a dark background with special focus on highlighting lush vegetation.
- The painting style reached its peak during the first half of the 18th century, but continued to flourish into the 19th century and had found exceptional patron like Maharao Ram Singh II (1828–66) under whom the art witnessed its brilliant phase.
- One of the earliest examples of the Bundi paintings is the Chunar Ragamala painted in 1561.
- Bundi paintings emphasized on hunting, court scenes, festivals, processions, life of nobles, lovers, animals, birds and scenes from Lord Krishna's life.

• Jaipur School

- As the rulers of Jaipur (Amer) Princely State had close affiliation with the Mughals, the art which developed between the late 16th and early 18th century had syncretic elements of both Rajasthani style (which predominated the art style between 16th-17th century) and Mughal style.
- With patronage of rulers like Savai Jai Singh and Pratap Singh, splendid portraits (aristocratic in nature) and large paintings centred around Lord Krishna became a signature of Rajasthani style.

Therefore, option (d) is the correct answer.

ANCIENT INDIA



Year-wise Trend of Questions

Note: The topic-wise distribution of questions has not been done owing to the lesser number of questions from the subject.

1. With reference to the period of Gupta dynasty in ancient India, the towns Ghantasala, Kadura and Chaul were well known as (2020)

(a) ports handling foreign trade
(b) capitals of powerful kingdoms
(c) places of exquisite stone art and architecture
(d) important Buddhist pilgrimage centres

Ans: (a)

- During the ancient period, India had trade and cultural contacts with Egypt, Rome, Greeks, Arabs, China and almost all Southeast Asian countries.
- Both the coasts of India have been studded with a string of ports.
 - The ports on the west coast were Barygaya, Suppara, Calliena, Semylla, Mandagore, Palaepatme, Malizigara, Aurranobbas, Naura, Tyndis, Muziris and Nelcynda.
 - The ports on the east coast were Tamralipti, Charitrapur, Paluru, Dantapur, Kalingapatnam, Pithunda, Sopatma, Ghantasala, Kadura, Poduca, Puhar, Korkai and Camara.
- Inshore explorations have been carried out at Malwan, Sopara, Elephanta island, Chaul, Udyavara, Honnavar, Gopakapatna on the west coast and Manikpatna, Kalingapatna, surrounding region of Poompuhar and Tranquebar on the east coast of India. **Therefore, option (a) is the correct answer.**

2. Who among the following rulers advised his subjects through this inscription? (2020)

“Whosoever praises his religious sect or blames other sects out of excessive devotion to his own sect, with the view of glorifying his own sect, he rather injures his own sect very severely.”

(a) Ashoka
(b) Samudragupta
(c) Harshavardhana
(d) Krishanadeva Raya

Ans: (a)

- In his Edict XII, Ashoka condemns the practice of elevating one's own religion at the expense of someone else's:

- Growth in essentials can be done in different ways, but all of them have as their root restraint in speech, that is, not praising one's own religion, or condemning the religion of others without good cause. And if there is cause for criticism, it should be done in a mild way. But it is better to honor other religions for this reason.

- By doing so, one's own religion benefits and so do other religions, while doing otherwise harms one's own religion and the religions of others.

- Whoever praises his own religion, due to excessive devotion, and condemns others with the thought 'Let me glorify my own religion', only harms his own religion. One should listen to and respect the doctrines professed by others.

- The edict concludes with the admonition that an individual's religion grows through Dhamma and so all faiths are improved by tolerance and understanding.

Therefore, option (a) is the correct answer.

3. With reference to the history of India, the terms “kulyavapa” and “dronavapa” denote (2020)

(a) measurement of land
(b) coins of different monetary value
(c) classification of urban land
(d) religious rituals

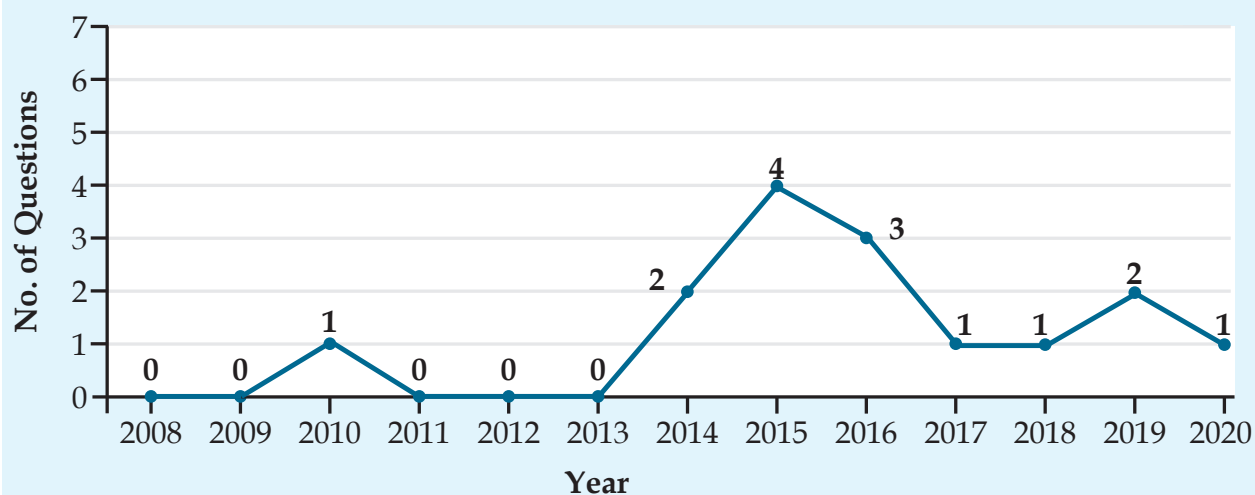
Ans: (a)

- In the Gupta era, the terms Kulyavapa, Dronavapa, and Adhavapa were related to land measurements mainly mentioned in the copper plate inscriptions that were found in Bengal.

- These words indicate the area of land that was required to sow seed grains of the weight respectively of one kulya, drona and adhaka. The element “vapa” in the compound “kulyavapa”, derived from the root “vap”, means the act of the act of sowing (throwing or scattering).

- The Midnapore plate of Subhakirtti refers to the gift of 40 dronas of land and one dronavapa of homestead

MEDIEVAL INDIA



Year-wise Trend of Questions

Note: The topic-wise distribution of questions has not been done owing to the lesser number of questions from the subject.

1. Consider the following events in the history of India: (2020)

1. Rise of Pratiharas under King Bhoja
2. Establishment of Pallava power under Mahendravarman-I
3. Establishment of Chola power by Parantaka-I
4. Pala dynasty founded by Gopala

What is the correct chronological order of the above events, starting from the earliest time?

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

Ans: (c)

- The Pallava dynasty existed from 275 CE to 897 CE, ruling a portion of southern India. Pallavas became a major power during the reign of Mahendravarman I (571–630 CE) who ruled the Southern portion of present day Andhra region and Northern regions of what forms present-day Tamil Nadu.
- Pala dynasty reigned in Bihar and Bengal from the 8th to the 12th century. Its founder, Gopala (750-770 CE), was a local chieftain who rose to power in the mid-eighth century during a period of anarchy.
- From the middle of the eighth century the dominance over Madhyadesha became the ambition of two particular clans among tribal people in Rajasthan, known as the Gurjara and the Pratihara. According to a contemporary Arab account from 851 CE, Raja Mihir Bhoja (840–851 CE), the greatest of the Pratihara kings, was among the princes of India that battled against the Arab invaders.
- The Chola Empire was founded by Vijayalaya. The reign of the Cholas began in the 9th century when they defeated the Pallavas to come into power. The medieval period was the era of absolute power and development for the Cholas. Parantaka I (reigned 907–953) laid the foundation of the kingdom. He took the northern boundary up to Nellore (Andhra Pradesh), where his advance was stopped by a defeat at the hands of the Rashtrakuta king Krishna III. Parantaka was more successful in the south, where he defeated both the Pandyas and the Gangas.

Therefore, option (c) is the correct answer.

2. With reference to Mughal India, what is/are the difference/differences between Jagirdar and Zamindar? (2019)

1. Jagirdars were holders of land assignments in lieu of judicial and police duties, whereas Zamindars were holders of revenue rights without obligation to perform any duty other than revenue collection.
2. Land assignments to Jagirdars were hereditary and revenue rights of Zamindars were not hereditary.

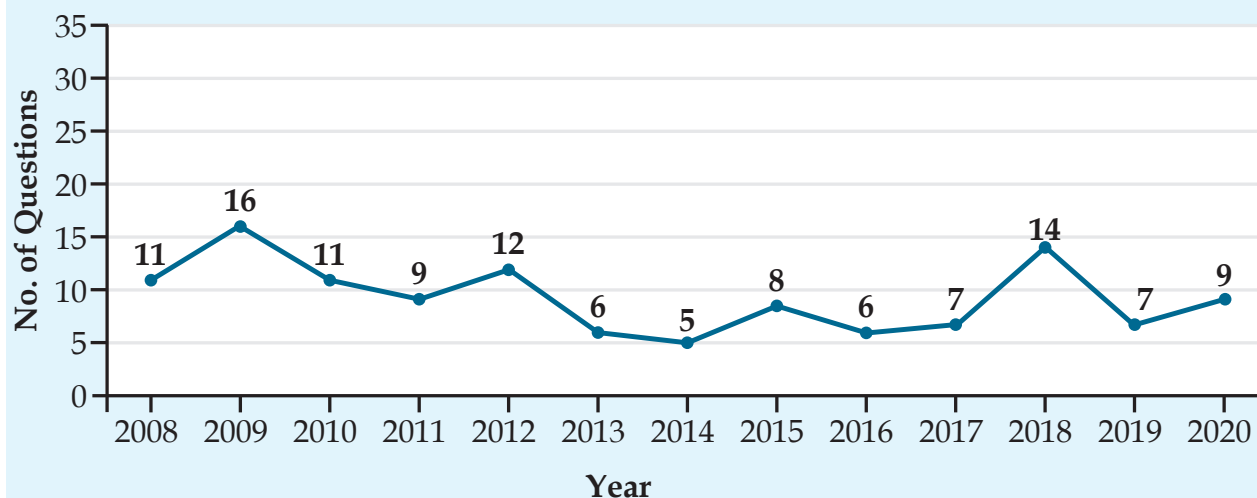
Select the correct answer using the code given below.

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

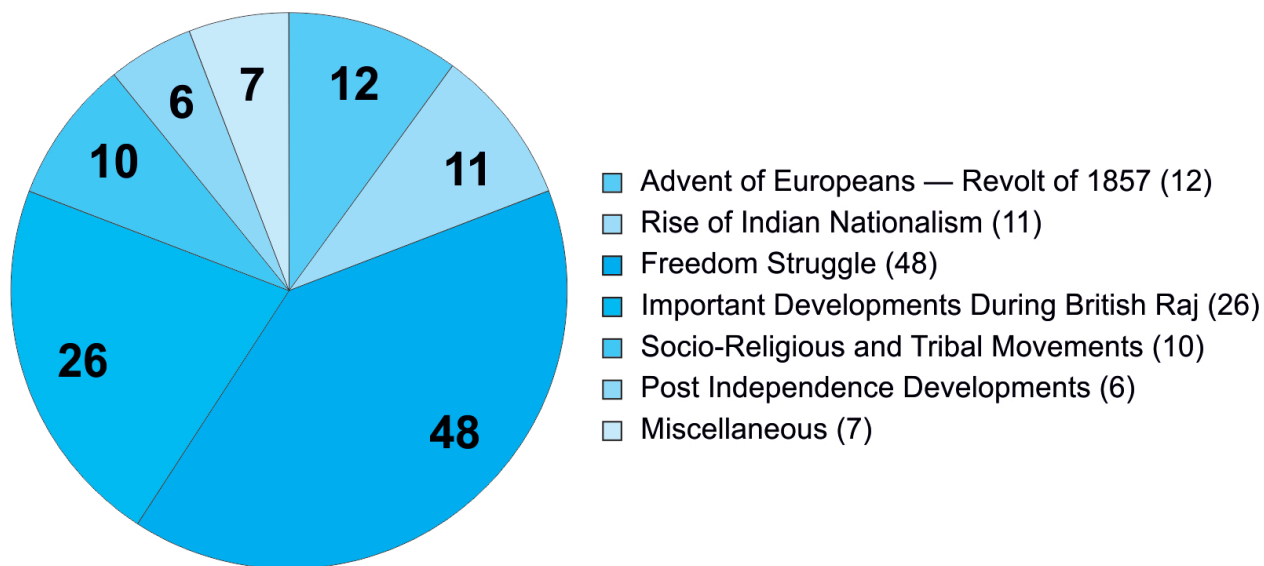
Ans: (d)

- In Mughal India, Jagirdars under Mansabdari system were assigned land in lieu of assigned duties towards the empire such as police, judicial, military, etc., whereas Zamindars apart from revenue collection duties had to render military duties and perform Khidmat such as rendering soldiers to fill the ranks of the royal army in times of need and offer gifts at the royal court. **Hence, 1 is not correct.**
 - Jagirdars were frequently transferred, as promotions and demotions were a regular part of the Mughal Empire, as loyalties towards the Emperor were largely dependent on the rank of Jagir/Mansab held by a noble. On the other hand, Zamindars had hereditary rights over the revenue as their sway over rural society was overarching in all aspects. **Hence, 2 is not correct.**
- Therefore, option (d) is the correct answer.**
3. Consider the following statements: (2019)
1. In the revenue administration of Delhi Sultanate, the in-charge of revenue collection was known as 'Amil'.
 2. The Iqta system of Sultans of Delhi was an ancient indigenous institution.
 3. The office of 'Mir Bakshi' came into existence during the reign of Khalji Sultans of Delhi.

MODERN INDIA



Year-wise Trend of Questions



Topic-wise Distribution of Questions
(2008-2020)

ADVENT OF EUROPEANS - REVOLT OF 1857

- Which one of the following statements does *not* apply to the system of Subsidiary Alliance introduced by Lord Wellesley? (2018)
 - To maintain a large standing army at other's expense
 - To keep India safe from Napoleonic danger
 - To secure a fixed income for the Company
 - To establish British paramountcy over the Indian States
- The staple commodities of export by the English East India Company from Bengal in the middle of the 18th century were: (2018)
 - Raw cotton, oil-seeds and opium
 - Sugar, salt, zinc and lead
 - Copper, silver, gold, spices and tea
 - Cotton, silk, saltpetre and opium

Ans: (c)

- The Subsidiary Alliance system was used by Lord Wellesley, who was Governor-General from 1798-1805. Actually, it was the French Governor Dupleix who first employed a similar system under which the local Indian Kingdoms were promised protection in lieu of a payment. But Wellesley developed it as a policy and applied it very systematically to contain the French influence as well as increase British power.

- Key Features**

- Under the system, the allying Indian State's ruler was compelled to accept the permanent stationing of a British force within his territory and to pay for its maintenance.
- Indian ruler had to agree to the posting of a British Resident in his court.
- Indian ruler could not employ any European in his service without the prior approval of the British.
- Indian ruler could not negotiate with any other Indian ruler without consulting the Governor-General.
- The British would defend the ruler from his enemies and adopt a policy of non-interference in the internal matters of the allied State.
- From above points, it is clear that statement (a), (b) and (d) apply to the system of Subsidiary Alliance.

Therefore, option (c) is the correct answer.

Ans: (d)

- Through the mid-1700s and early 1800s, the English East India Company came to account for half of the world trade. They traded mainly in commodities exotic to Europe and Britain like cotton, indigo, salt, silk, saltpetre, opium and tea.
- Although initial interest of the Company was aimed simply at reaping profits, their single minded focus on establishing a trading monopoly throughout Asia-Pacific, made them the heralding agents of British colonial imperialism.

Therefore, option (d) is the correct answer.

- Who among the following was/were associated with the introduction of Ryotwari Settlement in India during the British rule? (2017)

- Lord Cornwallis
- Alexander Read
- Thomas Munro

Select the correct answer using the code given below:

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

Ans: (c)

- Land settlements introduced in India by the English East India Company are as follows:

- Permanent Settlement (1793)**

- It was introduced by Lord Cornwallis. Hence, 1 is not correct.

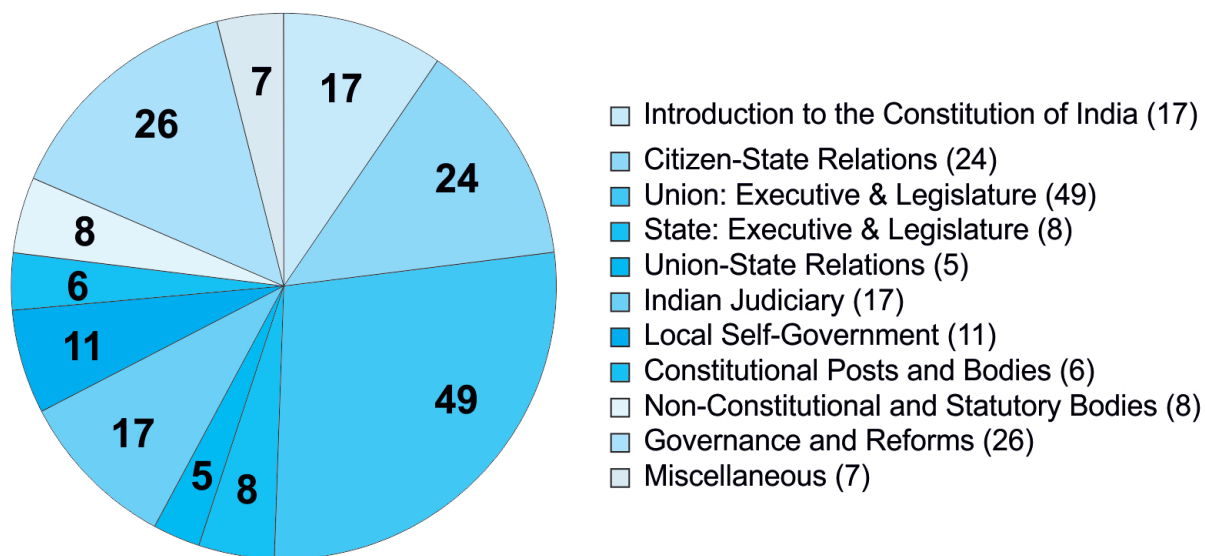
- Ans: (c)**
- Under the Ryotwari System, every holder of land (peasant) was recognised as its proprietor, and paid the land revenue directly to the Government. **Hence, statement 1 is correct.**
 - The principle was the direct collection of the land revenue from each individual cultivator by government agents. For this purpose, all holdings were measured and assessed according to crop potential and actual cultivation.
 - Pattas were assigned to the ryots on which they cultivated and paid rent for the same. **Hence, statement 2 is correct.**
 - The advantages of this system were the elimination of middlemen, who often oppressed villagers, and an assessment of the tax on land actually cultivated and not merely occupied. **Hence, statement 3 is correct.**
 - The system was introduced mainly in Madras, Bombay, parts of Assam and Coorgh provinces. The system was devised by Capt. Alexander Read and Sir Thomas Munro.

Therefore, option (c) is the correct answer.

POLITY & GOVERNANCE



Year-wise Trend of Questions



**Topic-wise Distribution of Questions
(2008-2020)**

INTRODUCTION TO THE CONSTITUTION OF INDIA

1. In India, separation of judiciary from the executive is enjoined by (2020)

- (a) the Preamble of the Constitution
- (b) a Directive Principle of State Policy
- (c) the Seventh Schedule
- (d) the conventional practice

Ans: (b)

- The Directive Principles of State Policy are enumerated in Part IV (Articles 36 to 51) of the Constitution.
- Article 50 of the Constitution reads as under: Separation of Judiciary from Executive - The State shall take steps to separate the judiciary from the executive in the public services of the State.

Therefore, option (b) is the correct answer.

2. A Parliamentary System of Government is one in which (2020)

- (a) all political parties in the Parliament are represented in the Government
- (b) the Government is responsible to the Parliament and can be removed by it
- (c) the Government is elected by the people and can be removed by them
- (d) the Government is chosen by the Parliament but cannot be removed by it before completion of a fixed term

Ans: (b)

- A Parliamentary System of Government is one in which the Government is responsible to the Parliament and can be removed by it. In such a system, the role of President or monarch is primarily ceremonial and the Prime Minister along with the cabinet wields effective power.
- According to the Article 75(3) of Constitution of India, the Council of Ministers is collectively responsible to the House of the People (Lok Sabha) which is one of the constituents of the Parliament. The rules of Lok Sabha

provide a mechanism for testing this collective responsibility. They allow any Lok Sabha MP, who can garner the support of 50 colleagues, to introduce a motion of no-confidence against the Council of Ministers. If the no confidence motion is passed in the Lok Sabha, the government falls.

Therefore, option (b) is the correct answer.

3. Which part of the Constitution of India declares the ideal of Welfare State? (2020)

- (a) Directive Principles of State Policy
- (b) Fundamental Rights
- (c) Preamble
- (d) Seventh Schedule

Ans: (a)

The Directive Principles of State Policy (DPSP) are mentioned in the Part IV of the Indian Constitution from Articles 36 to 51. The DPSP constitutes a comprehensive social, economic and political programme for a modern and welfare state. These principles emphasise that the State shall try to promote welfare of people by providing them basic facilities like shelter, food and clothing. They embody the concept of a 'welfare state' which was absent during the colonial era.

Therefore, option (a) is the correct answer.

4. Consider the following statements: (2020)

1. The Constitution of India defines its 'basic structure' in terms of federalism, secularism, fundamental rights and democracy.
2. The Constitution of India provides for 'judicial review' to safeguard the citizens' liberties and to preserve the ideals on which the Constitution is based.

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)

- The Constitution of India does not define the basic structure, it is a judicial innovation.
- In *Kesavananda Bharati vs State of Kerala* case (1973), the Supreme Court ruled that the Parliament could amend any part of the Constitution so long as it did not alter or amend the basic structure or essential features of the Constitution.
- However, the court did not define the term 'basic structure', and only listed a few principles – federalism, secularism, democracy – as being its part.
- The 'basic structure' doctrine has since been interpreted to include the supremacy of the Constitution, the rule of law, Independence of the judiciary, doctrine of separation of powers, sovereign democratic republic, the parliamentary system of government, the principle of free and fair elections, welfare state, etc. **Hence, statement 1 is not correct.**
- There is no direct and express provision in the constitution empowering the courts to invalidate laws, but the constitution has imposed definite limitations upon each of the organs, the transgression of which would make the law void. The court is entrusted with the task of deciding whether any of the constitutional limitations has been transgressed or not. **Hence, statement 2 is not correct.**

Therefore, option (d) is the correct answer.

5. The Preamble to the Constitution of India is (2020)
- (a) a part of the Constitution but has no legal effect
 - (b) not a part of the Constitution and has no legal effect either
 - (c) a part of the Constitution and has the same legal effect as any other part
 - (d) a part of the Constitution but has no legal effect independently of other parts

Ans: (d)

- The Preamble is the introductory part of the Constitution. It contains the ideals, objectives and basic principles of the Constitution. The salient features of the Constitution have evolved directly and indirectly from these objectives which flow from the Preamble.
- In *Kesavananda Bharati Case* (1973), the Supreme Court held that:
 - The Preamble of the Constitution be considered as part of the Constitution.

- The Preamble is not the supreme power or source of any restriction or prohibition but it plays an important role in the interpretation of statutes and provisions of the Constitution.
- In *Union Government vs LIC of India Case* (1995), the Supreme Court has once again held that Preamble is the integral part of the Constitution but is not directly enforceable in a court of law in India. Its objectives are implemented through various acts and policies.

Therefore, option (d) is the correct answer.

6. Which Article of the Constitution of India safeguards one's right to marry the person of one's choice? (2019)

- (a) Article 19
- (b) Article 21
- (c) Article 25
- (d) Article 29

Ans: (b)

- The right to marry is a component of the right to life under Article 21 of the Constitution of India which states that "No person shall be deprived of his life and personal liberty except according to the procedure established by law".
- In *Lata Singh v. State of Uttar Pradesh* 2006, the Supreme Court viewed the right to marry as a component of the right to life under Article 21 of Indian Constitution.

Therefore, option (b) is the correct answer.

7. Which of the following are regarded as the main features of the "Rule of Law"? (2018)

1. Limitation of powers
2. Equality before law
3. People's responsibility to the Government
4. Liberty and civil rights

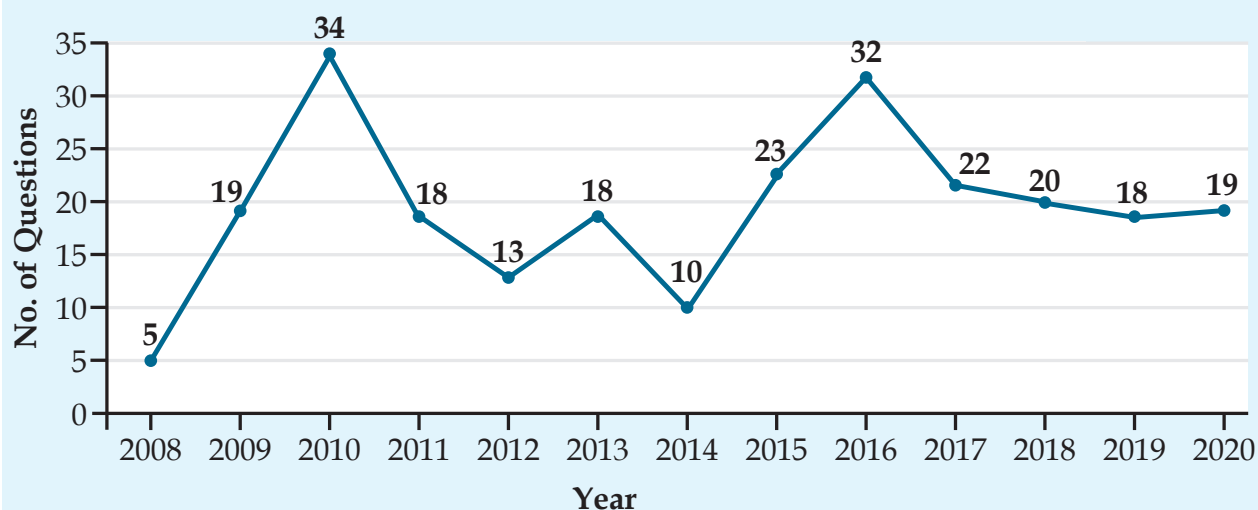
Select the correct answer using the code given below:

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

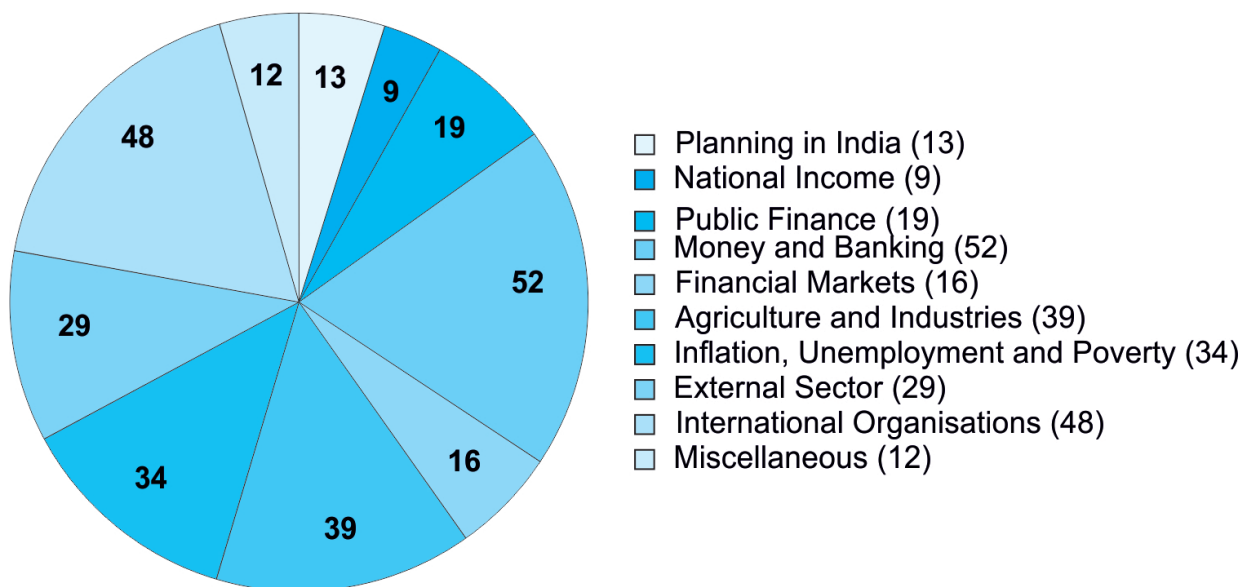
Ans: (c)

- The 'Rule of Law' may be defined as a principle of governance in which all persons, institutions and entities, public and private, including the State itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with human rights norms and standards.

ECONOMY



Year-wise Trend of Questions



Topic-wise Distribution of Questions
(2008-2020)

PLANNING IN INDIA

1. With reference to India's Five-Year Plans, which of the following statements is/are correct? (2019)

1. From the Second Five-Year Plan, there was a determined thrust towards substitution of basic and capital good industries.
2. The Fourth Five-Year Plan adopted the objective of correcting the earlier trend of increased concentration of wealth and economic power.
3. In the Fifth Five-Year Plan, for the first time, the financial sector was included as an integral part of the Plan.

Select the correct answer using the code given below:

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

Ans: (a)

- India adopted the strategy of Import Substitution Industrialization (ISI) in the fifties. The chief objective was to build a self-reliant economy. From the Second Five Year Plan, there was determined thrust towards substitution of basic and capital goods industries. **Hence, statement 1 is correct.**
 - The Fourth Five Year Plan emphasised on reduction of concentration of incomes, wealth and economic power to achieve social equality and justice. **Hence, statement 2 is correct.**
 - The Fifth Five Year Plan was aimed at the removal of poverty and achievement of self-reliance. The Eighth Plan focussed on financial sector reforms. **Hence, statement 3 is not correct.**
Therefore, option (a) is the correct answer.
2. Which of the following has/have occurred in India after its liberalization of economic policies in 1991? (2017)
1. Share of agriculture in GDP increased enormously.
 2. Share of India's exports in world trade increased.
 3. FDI inflows increased.
 4. India's foreign exchange reserves increased enormously.

Select the correct answer using the codes given below:

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

Ans: (b)

- Economic reforms in India refer to the neo-liberal policies introduced by the government in 1991 and in the later years. The central point of the reforms was the liberalization of the economy, simplifying regulations and giving more role to the private sector. The New Industrial Policy of 1991 is the heart of the new economic reforms.
- Following are the main features of New Economic Reforms:
 - De-reservation of the industrial sector.
 - Industrial de-licensing policy.
 - Opening up of the economy to foreign competition – the economic reforms introduced extensive liberalization of foreign trade and foreign investment. The import substitution and import restriction policies were abandoned and instead import liberalization and export promotion policies were introduced. This increased India's share in export. **Hence, 2 is correct.**
 - Liberalization of trade and investment.
- However, there was a gradual decline in the agriculture sector's contribution to the Indian economy. As of 2020-21, agriculture sector contributed about 19.9% to the India's GDP, down from 29% in 1991. **Hence, 1 is not correct.**
- Foreign investment was almost negligible before 1991. On the investment front, the economic reforms mark the era of capital mobility in the country. Foreign capital in the form of FDI (Foreign Direct Investment) and FPI (Foreign Portfolio Investment) entered into the country. **Hence, 3 is correct.**
- India's poor state of FOREX reserves was also one of the factors that forced the government to bring in

economic reforms of 1991. Presently, FOREX reserve of India is on a record high comparatively to that in 1991. **Hence, 4 is correct.**

Therefore, option (b) is the correct answer.

3. With reference to the Fourteenth Finance Commission, which of the following statements is/are correct?

(2015)

1. It has increased the share of States in the central divisible pool from 32 percent to 42 percent.
2. It has made recommendations concerning sector-specific grants.

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)

- Article 280 of the Indian Constitution entitles the President to constitute a 5 members Finance Commission after expiration of every five years.
- The Commission makes recommendations to the President about the distribution of the net proceeds of taxes between the Union and the states.
- The Fourteenth Finance Commission was constituted for the same purpose. Headed by Y.V. Reddy, former RBI Governor, it submitted its recommendation to the President, which were:
 - Increase the states share from 32% to 42%; **hence, statement 1 is correct.**
 - Tax devolution should be the primary route for transfer of resources to the States,
- In recommending a horizontal distribution, the Commission employed following parameters:

Parameters	Weightage
Fiscal Capacity/Income Distance	50.0%
Population (1971)	17.5%
Population (2011)	10.0%
Area	15.0%
Forest Cover	7.5%

- The Commission did not recommend any sector specific grants. **Hence, statement 2 is not correct.**

Therefore, option (a) is the correct answer.

4. The main objective of the 12th Five-Year Plan is (2014)

- (a) inclusive growth and poverty reduction
- (b) inclusive and sustainable growth
- (c) sustainable and inclusive growth to reduce unemployment
- (d) faster, sustainable and more inclusive growth

Ans: (d)

- The 12th Five Year Plan (2012-17) document sought to achieve annual average economic growth rate of 8.2%, down from 9% envisaged earlier, in view of fragile global recovery.
- The aim of the Plan was “faster, sustainable and more inclusive growth”.

Therefore, option (d) is the correct answer.

5. To obtain full benefits of demographic dividend, what should India do? (2013)

- (a) Promoting skill development
- (b) Introducing more social security schemes
- (c) Reducing infant mortality rate
- (d) Privatization of higher education

Ans: (a)

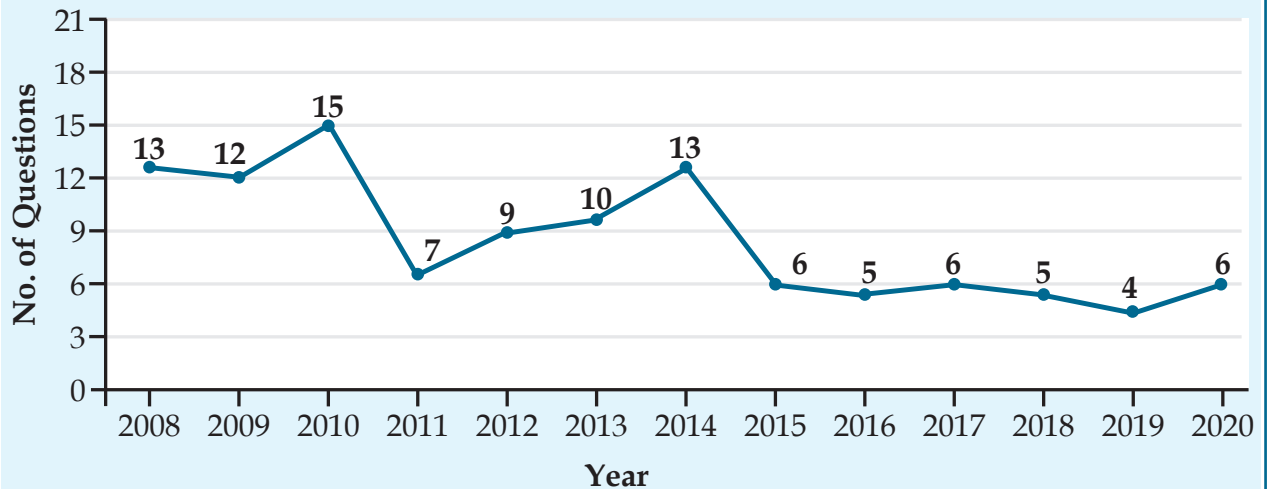
- Demographic dividend refers to the growth in an economy due to a rising share of working age population.
- According to economists, the working population in India is set to rise considerably in the coming decades.
- In India, there is a significant number of working age adults and to obtain the full benefits of the demographic dividend, the government should focus on skill development and other vocational training as the skilled working population will be easily inducted into work force and be the base of economic development.

Therefore, option (a) is the correct answer.

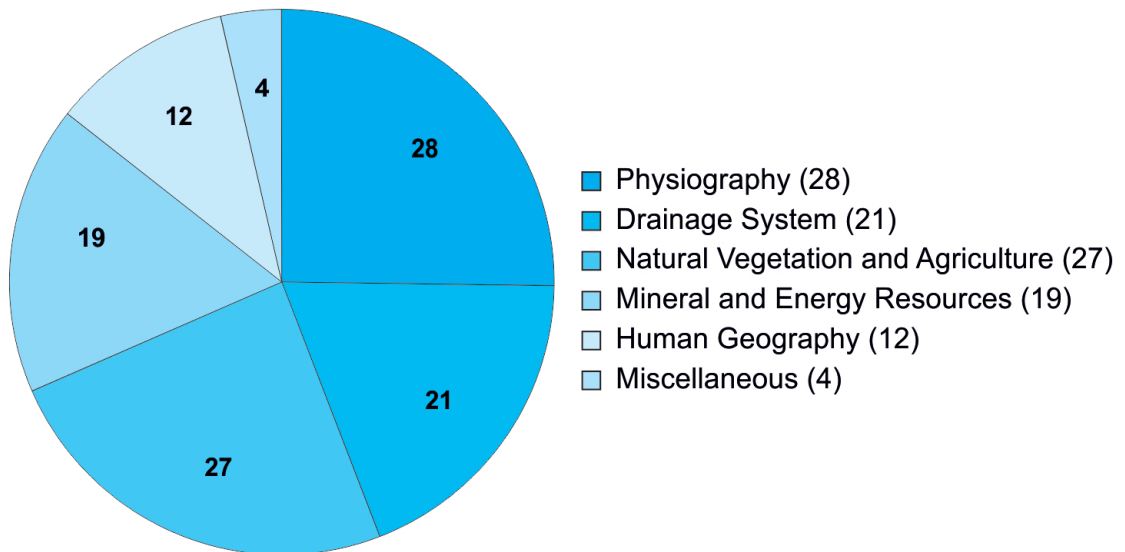
6. Which of the following is/are among the noticeable features of the recommendations of the Thirteenth Finance Commission? (2012)

1. A design for the Goods and Services Tax, and a compensation package linked to adherence to the proposed design.
2. A design for the creation of lakhs of jobs in the next ten years in consonance with India's demographic dividend

INDIAN GEOGRAPHY



Year-wise Trend of Questions



Topic-wise Distribution of Questions
(2008-2020)

PHYSIOGRAPHY

1. Siachen Glacier is situated to the

- (a) East of Aksai Chin
- (b) East of Leh
- (c) North of Gilgit
- (d) North of Nubra Valley

Ans: (d)

- The Siachen Glacier is located in the Eastern Karakoram range in the Himalayas, just northeast of Point NJ9842 where the Line of Control between India and Pakistan ends.
- It has the distinction of being the largest glacier outside the polar and subpolar regions.
- It lies to the west of Aksai Chin, north of Nubra valley and almost east of Gilgit.



Therefore, option (d) is the correct answer.

2. Among the following cities, which one lies on a longitude closest to that of Delhi? (2018)

- (a) Bengaluru
- (b) Hyderabad
- (c) Nagpur
- (d) Pune

Ans: (a)

- The Longitudinal Position of the given cities are:
 - Bengaluru (77.5946° E)
 - New Delhi (77.2090° E)
 - Hyderabad (78.4867° E)
 - Nashik (73.7898° E)
 - Pune (73.8567° E)

(2020)

- Bengaluru lies on the closest longitude to that of Delhi.

Therefore, option (a) is the correct answer.

3. Consider the following statements: (2018)

1. The Barren Island volcano is an active volcano located in the Indian territory.
2. Barren Island lies about 140 km east of Great Nicobar.
3. The last time the Barren Island volcano erupted was in 1991 and it has remained inactive since then.

Which of the statements given above is/are correct?

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

Ans: (a)

- Barren Island is India's only active volcano which is located in the Andaman and Nicobar Islands. **Hence, statement 1 is correct.**
- It is located at about 140 km from Port Blair, southern part of Andaman Island in Andaman Sea. The distance between Barren Island to Great Nicobar is more than the given distance. **Hence, statement 2 is not correct.**
- First recorded eruption of the volcano dates back to 1787. In the past 100 years, it has erupted at least five times. Then for the next 100 years, it remained silent. It re-erupted massively in 1991. Since then, the eruption has been recorded every two-three years; the latest in the series was February 2016. **Hence, statement 3 is not correct.**

Therefore, option (a) is the correct answer.

4. Consider the following statements: (2017)

1. In India, the Himalayas are spread over five States only.
2. Western Ghats are spread over five States only.
3. Pulicat Lake is spread over two States only.

Which of the statements given above is/are correct?

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

Ans: (b)

- The Indian Himalayan Region is spread over 11 states, namely, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Assam and West Bengal and UTs of Jammu and Kashmir and Ladakh. **Hence, statement 1 is not correct.**
- Western Ghats range over six states, Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat. **Hence, statement 2 is not correct.**
- Pulicat Lake is the second largest brackish waterbody after Chilika Lake (in Odisha) and is shared by Tamil Nadu and Andhra Pradesh. **Hence, statement 3 is correct.**

Therefore, option (b) is the correct answer.

5. If you travel by road from Kohima to Kottayam, what is the minimum number of States within India through which you can travel, including the origin and the destination? **(2017)**

- (a) 6 (b) 7
(c) 8 (d) 9

Ans: (b)

If a person travels through road from Kohima (Nagaland) to Kottayam (Kerala), he shall pass through minimum 7 states and could choose between two alternate routes:

- **Route 1:** Nagaland, Assam, West Bengal, Odisha, Andhra Pradesh, Tamil Nadu and Kerala.
- **Route 2:** Nagaland, Assam, West Bengal, Odisha, Telangana, Karnataka and Kerala.

Therefore, option (b) is the correct answer.

6. At one of the places in India, if you stand on the seashore and watch the sea, you will find that the sea water recedes from the shore line a few kilometres and comes back to the shore, twice a day, and you can actually walk on the sea floor when the water recedes. This unique phenomenon is seen at **(2017)**

- (a) Bhavnagar (b) Bheemunipatnam
(c) Chandipur (d) Nagapattinam

Ans: (c)

- Chandipur is located in Balasore district in Odisha. This beach here is unique in the sense that the sea water retreats inside the sea from 1 km to 5 km every

day and it again comes back to the shore slowly during the high tide. This happens twice every day.

- It is also known as Odisha's Hide and Seek Beach.

Therefore, option (c) is the correct answer.

7. From the ecological point of view, which one of the following assumes importance in being a good link between the Eastern Ghats and the Western Ghats? **(2017)**

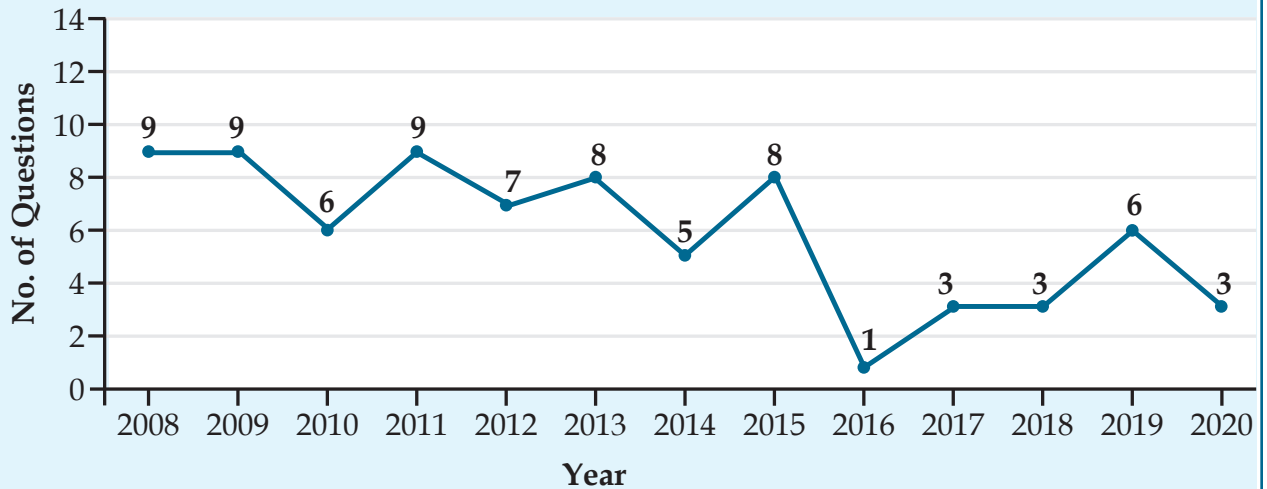
- (a) Sathyamangalam Tiger Reserve
(b) Nallamala Forest
(c) Nagarhole National Park
(d) Seshachalam Biosphere Reserve

Ans: (a)

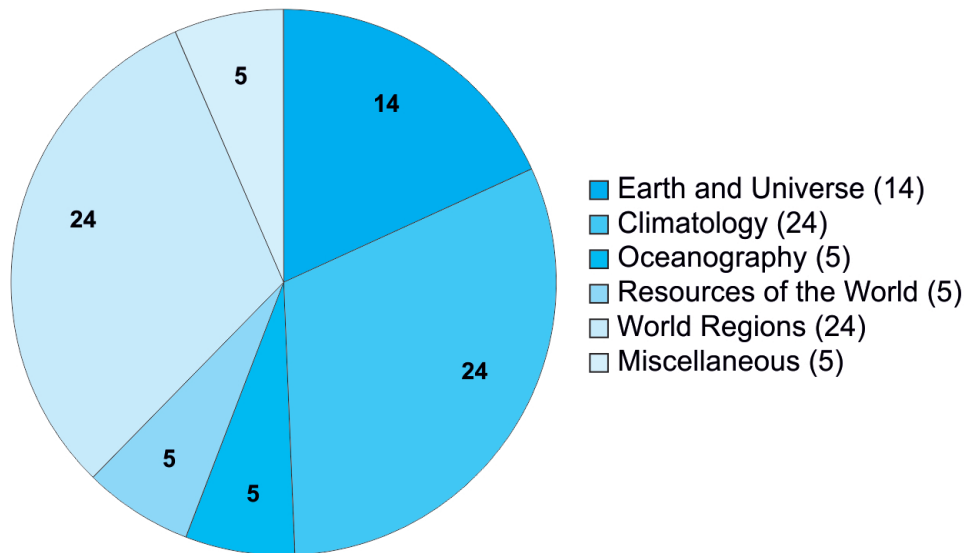
- Sathyamangalam Wildlife Sanctuary and Tiger Reserve is a protected area along the Western Ghats in the Indian State of Tamil Nadu.
- Sathyamangalam forest range is a significant wildlife corridor in the Nilgiri Biosphere Reserve between the Western Ghats and the rest of the Eastern Ghats and a genetic link between the four other protected areas which it adjoins, including the Biligiriranga Swamy Temple Wildlife Sanctuary, Sigur Plateau, Mudumalai National Park and Bandipur National Park.
- First declared as a wildlife sanctuary in 2008 and enlarged in 2011, it covers a forest area of 1,411.6 sq km and is the largest wildlife sanctuary in Tamil Nadu. In 2013, it became the fourth tiger reserve as a part of Project Tiger in the State of Tamil Nadu.
- Nallamala Forest is one of the largest undisturbed stretches of forest in South India. It is located in the Nallamala Hill, which is a part of the Eastern Ghats. It is spread over 5 districts, namely Kurnool, Guntur, Kadapa, Mahabubnagar and Prakasam. The forest has a good tiger population and a part of the forest belongs to the Nagarjunsagar-Srisailem Tiger Reserve.
- Nagarhole National Park is situated in two districts of Mysore and Kodagu in the State of Karnataka. Nagarhole National Park forms a part of the Nilgiri Biosphere Reserve and together with Bandipur National Park and Mudumalai Wildlife Sanctuary to its South-East and Wayanad to the South-West, is one of the last remaining and best protected habitats for endangered species like the Elephant and the Tiger.
- Seshachalam hills are the hill ranges spread in parts of Chittoor and Kadapa districts of Andhra Pradesh and have been designated as Seshachalam Biosphere Reserve in 2010. The Biosphere Reserve has large reserves of red sandalwood.

Therefore, option (a) is the correct answer.

WORLD GEOGRAPHY



Year-wise Trend of Questions



Topic-wise Distribution of Questions
(2008-2020)



WORLD GEOGRAPHY

EARTH AND UNIVERSE

1. On 21st June, the Sun (2019)
- (a) does not set below the horizon at the Arctic Circle
 - (b) does not set below the horizon at Antarctic Circle
 - (c) shines vertically overhead at noon on the Equator
 - (d) shines vertically overhead at the Tropic of Capricorn

Ans: (a)

- During 'Summer Solstice', on 21st June, the Northern Hemisphere witnesses its longest day of the year, while the Southern Hemisphere sees its shortest day.
- During this time, the Earth's North Pole is at its maximum tilt towards the Sun and the Sun appears directly overhead at 23.5° north latitude, i.e. along the Tropic of Cancer.
- As the Arctic Circle falls in the Northern Hemisphere, the Sun does not set below the horizon during Summer Solstice, because here the sunrise and sunset start to converge in the northern sky. In contrast, the same event happens in the Antarctic Circle during Winter Solstice, 22nd December.

Therefore, option (a) is the correct answer.

2. Consider the following statements: (2018)
1. The Earth's magnetic field has reversed every few hundred thousand years.
 2. When the Earth was created more than 4000 million years ago, there was 54% oxygen and no carbon dioxide.
 3. When living organisms originated, they modified the early atmosphere of the Earth.

Which of the statements given above is/are correct?

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

Ans: (c)

- Earth's Magnetic Field is a magnetic dipole, tilted 11° from the Earth's axis of rotation. The magnetic North

Pole is a point on Ellesmere Island in North Canada, while the magnetic South Pole is off the coast of Antarctica between Adelie Land and Wilkes Land.

- Magnetic fingerprints locked in ancient rocks show that over last 20 million years, magnetic North and South have flipped roughly every 200,000 to 300,000 years. The last of these major reversals occurred about 780,000 years ago, although the Poles do wander around in between these larger flips. **Hence, statement 1 is correct.**
- When the Earth formed 4.6 billion years ago from a hot mix of gases and solids, it had almost no atmosphere. The surface was molten. As the Earth cooled, an atmosphere formed mainly from gases spewed from volcanoes. It included Hydrogen sulphide, Methane, and 10 to 200 times as much Carbon dioxide as today's atmosphere. **Hence, statement 2 is not correct.**
- Around 2.5 million years ago, the amount of oxygen available in the atmosphere started to rise due to the evolution of photosynthetic organisms that produced oxygen. These organisms were oceanic cyanobacteria. Over time, aerobic organisms evolved and consumed some of the oxygen produced. **Hence, statement 3 is correct.**

Therefore, option (c) is the correct answer.

3. The term 'Goldilocks Zone' is often seen in the news in the context of (2015)
- (a) the limits of habitable zone above the surface of the Earth
 - (b) regions inside the Earth where shale gas is available
 - (c) search for the Earth-like planets in outer space
 - (d) search for meteorites containing precious metals

Ans: (c)

- The 'Goldilocks Zone' refers to the habitable zone around a star where the temperature is just right – not too hot and not too cold – for liquid water to exist on a planet.

- Since liquid water is essential for life as it has potential to accommodate biotic organism, thereby, it is called 'habitable zone'.

Therefore, option (c) is the correct answer.

4. Which of the following phenomena might have influenced the evolution of organisms? (2014)

1. Continental drift
2. Glacial cycles

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: (c)

- Continental drift explains how the continents shift position on the Earth's surface due to movement of lithospheric plates.
- In glacial cycle, during a glacial period, glacial advancement occurs and in an interglacial period (the warmer period between the ice ages) glaciers retreat. Both the processes of continental drift and glacial cycles have influenced the evolution of organisms.

Hence, 1 and 2 are correct.

Therefore, option (c) is the correct answer.

5. Consider the following: (2013)

1. Electromagnetic radiation
2. Geothermal energy
3. Gravitational force
4. Plate movements
5. Rotation of the earth
6. Revolution of the earth

Which of the above are responsible for bringing dynamic changes on the surface of the earth?

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

Ans: (d)

- The Earth's surface is dynamic. The Earth's surface is being continuously subjected to by external forces (exogenic forces) originating above the earth's surface, mainly induced by the energy of the Sun and by internal forces (endogenic forces) from within the earth.

● Endogenic Processes

- The energy emanating from within the earth is the main force behind endogenic geomorphic processes.
- This energy is mostly generated by radioactivity, release of electromagnetic energy, rotational and tidal friction and primordial heat from the origin of the Earth.
- This energy is due to geothermal gradients and heat flow from within the earth.
- Endogenic process has induced volcanism and associated geothermal phenomena like geysers, hot water springs, etc.; earthquakes; plate movements resulting in the creation of different landforms (mountains, hills, plateaus, etc.) and water bodies (sea, ocean, lake, etc.).

● Exogenic Processes

- The exogenic processes derive their energy from atmosphere determined by the ultimate energy from the Sun, e.g., weathering and erosion.
- Temperature and precipitation are the two important climatic elements that control various processes.

- Seasonal and diurnal variation on Earth is due to revolution and rotation of Earth respectively.

Therefore, option (d) is the correct answer.

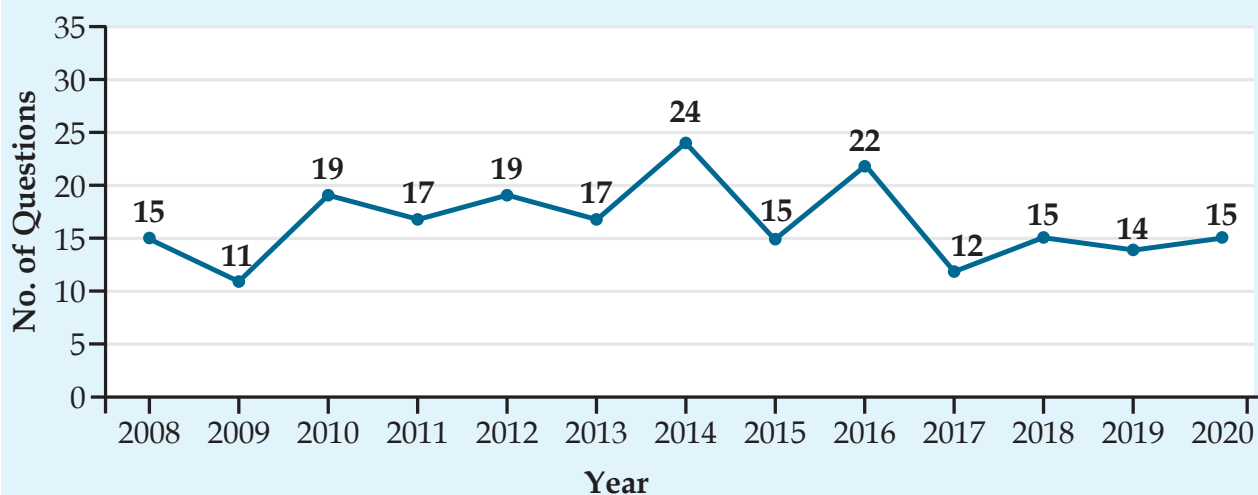
6. On the planet earth, most of the freshwater exists as ice caps and glaciers. Out of the remaining freshwater, the largest proportion (2013)

- (a) is found in atmosphere as moisture and clouds
- (b) is found in freshwater lakes and rivers
- (c) exists as groundwater
- (d) exists as soil moisture

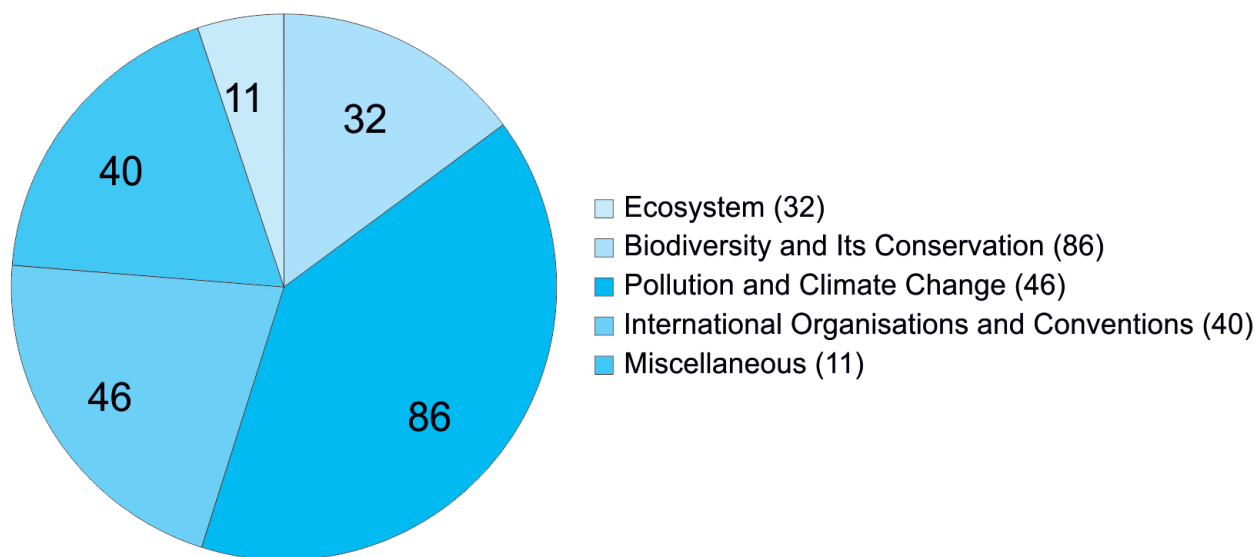
Ans: (c)

- The water cycle describes how water evaporates from the Earth's surface, rises into the atmosphere, cools, condenses to form clouds, and falls again to the surface as precipitation.
- Of all the water that exists on our planet, around 97% is saltwater and around less than 3% is freshwater.
- Most of Earth's freshwater is frozen in glaciers, ice caps, and most of the rest is deep underground in aquifers.

ENVIRONMENT & ECOLOGY



Year-wise Trend of Questions



Topic-wise Distribution of Questions
(2008-2020)

ECOSYSTEM

1. Which of the following leaf modifications occur(s) in the desert areas to inhibit water loss? (2018)

1. Hard and waxy leaves
2. Tiny leaves
3. Thorns instead of leaves

Select the correct answer using the code given below:

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

Ans: (d)

- Most deserts have a considerable amount of specialized vegetation, as well as specialized vertebrate and invertebrate animals. Soils often have abundant nutrients because they need only water to become very productive and have little or no organic matter. Disturbances are common in the form of occasional fires or cold weather, and sudden, infrequent, but intense rains that cause flooding.
- Temperatures exhibit daily extremes because the atmosphere contains little humidity to block the Sun's rays. Desert surfaces receive a little more than twice the solar radiation received by humid regions and lose almost twice as much heat at night. Mean annual temperatures range from 20-25°C. The extreme maximum temperature ranges from 43.5-49°C. Minimum temperature sometimes drop to -18°C.
- Rainfall is usually very low and/or concentrated in short bursts between long rainless periods. Evaporation rates regularly exceed rainfall rates. Sometimes rain starts falling and evaporates before reaching the ground.
- Soils are coarse-textured, shallow, rocky or gravelly with good drainage and have no subsurface water. They are coarse because there is less chemical weathering. The finer dust and sand particles are blown elsewhere, leaving heavier pieces behind.

- The plants found in the desert are xerophytic plants which have special characteristics to withstand very high rate of evaporation. They have long roots, thick barks, waxy leaves, thorns and little leaves. The leaves are leathery and have a waxy substance on top to prevent water loss through the epidermis. Many xerophytic plants have small leaves and thorns. The tiny leaves, which are often circular in cross section, reduce the surface area and hence the evaporation from the surface. Spines protect the plant from animals, provide shade from the Sun and also collect moisture. **Hence, 1, 2 and 3 are correct.**

Therefore, option (d) is the correct answer.

2. Which of the following statements best describes "carbon fertilization"? (2018)

- (a) Increased plant growth due to increased concentration of carbon dioxide in the atmosphere.
- (b) Increased temperature of Earth due to increased concentration of carbon dioxide in the atmosphere.
- (c) Increased acidity of oceans as a result of increased concentration of carbon dioxide in the atmosphere.
- (d) Adaptation of all living beings on Earth to the climate change brought about by the increased concentration of carbon dioxide in the atmosphere.

Ans: (a)

- Carbon Fertilization can be defined as increased rate of photosynthesis due to the large amount of carbon dioxide in the atmosphere that has resulted from rising anthropogenic emissions.
- Increased rate of photosynthesis results in increased plant growth.

Therefore, option (a) is the correct answer.

3. Consider the following: (2018)

1. Birds
2. Dust blowing
3. Rain
4. Wind blowing

Which of the above spread plant diseases?

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

Ans: (d)

- Extensive and severe epidemics of plant diseases are mostly the results of wind blowing including dust blowing which cause transmission of the pathogens. **Hence, 2 and 4 are correct.**
- Splashing rain drops mostly transmit the foliar diseases from leaf to leaf, from shoot to shoot and even from plant to plant in case of closely spaced crops. **Hence, 3 is correct.**
- Birds play a minor role in disease transmission in plants. It is mainly by way of dispersal of seeds of higher flowering plant parasite, etc. **Hence, 1 is correct.**

Therefore, option (d) is the correct answer.

4. The FAO accords the status of 'Globally Important Agricultural Heritage System (GIAHS)' to traditional agricultural systems. What is the overall goal of this initiative? (2016)
1. To provide modern technology, training in modern farming methods and financial support to local communities of identified GIAHS so as to greatly enhance their agricultural productivity.
 2. To identify and safeguard eco-friendly traditional farm practices and their associated landscapes, agricultural biodiversity and knowledge systems of the local communities.
 3. To provide Geographical Indication status to all the varieties of agricultural produce in such identified GIAHS.

Select the correct answer using the code given below:

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

Ans: (b)

- Globally Important Agricultural Heritage System (GIAHS) is an initiative of Food and Agriculture Organisation (FAO). Its overall goal is to identify and safeguard Globally Important Agricultural Heritage Systems and their associated landscapes, agricultural biodiversity and knowledge systems through catalysing and establishing a long-term programme

to support such systems and enhance global, national and local benefits derived through their dynamic conservation, sustainable management and enhanced viability. **Hence, 2 is correct.**

• Objectives of GIAHS

- To leverage global and national recognition of the importance of agricultural heritage systems and institutional support for their safeguard.
- Capacity building of local farming communities and local and national institutions to conserve and manage GIAHS, generate income and add economic value to goods and services of such systems in a sustainable fashion.
- To promote enabling regulatory policies and incentive environments to support the conservation, evolutionary adaptation and viability of GIAHS.
- It does not aim to provide modern technologies and Geographical Indication status to identified GIAHS. **Hence, 1 and 3 are not correct.**

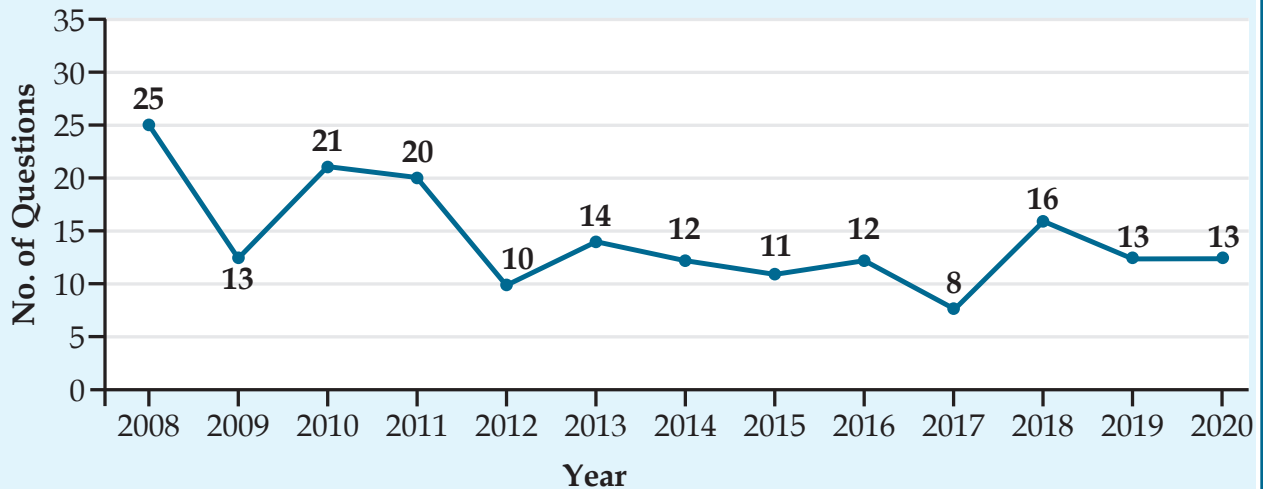
Therefore, option (b) is the correct answer.

5. Why does the Government of India promote the use of 'Neem-coated Urea' in agriculture? (2016)
- (a) Release of Neem oil in the soil increases nitrogen fixation by the soil microorganisms.
 - (b) Neem coating slows down the rate of dissolution of urea in the soil.
 - (c) Nitrous oxide, which is a greenhouse gas, is not at all released into atmosphere by crop fields.
 - (d) It is a combination of a weedicide and a fertilizer for particular crops.

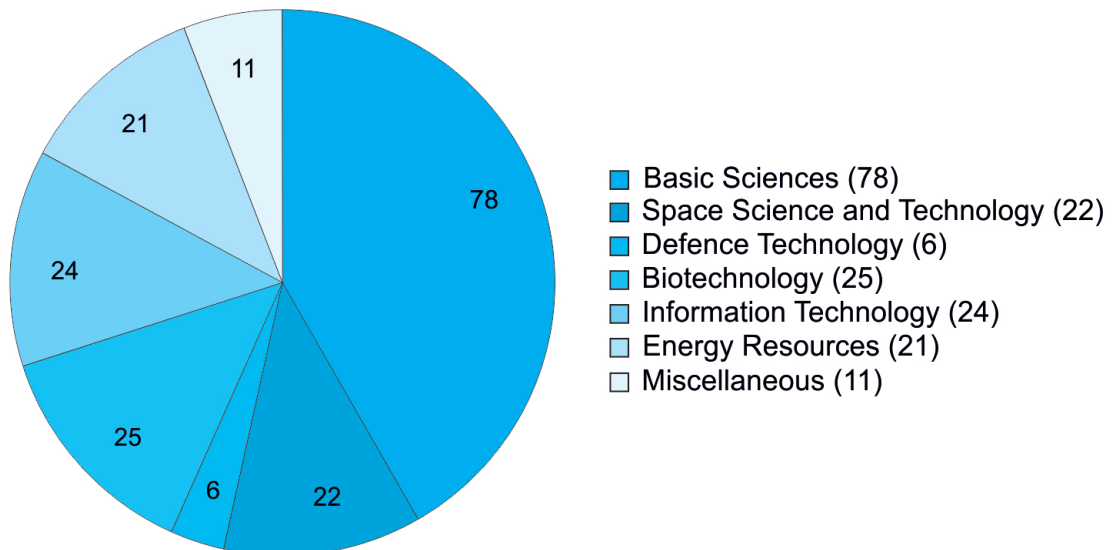
Ans: (b)

- **Ordinary Urea:** It is a fertiliser used to provide Nitrogen to the soil, which is necessary for the development of plants. Only 30-40% of Nitrogen present in the urea is utilised by crops. The rest gets degraded. Ordinary urea gets converted to Ammonium Carbamate. Some of this gets converted to Ammonia Gas in a process called ammonia volatilisation, while the rest of the Ammonium Carbamate undergoes a chemical transformation and Nitrates are formed. Some of these are absorbed by the plants. The rest is either leached into the underground water or are denitrified to gaseous Nitrogen and Nitrous Oxide under anaerobic conditions (absence of Oxygen).

SCIENCE & TECHNOLOGY



Year-wise Trend of Questions



Topic-wise Distribution of Questions
(2008-2020)

BASIC SCIENCES

1. Steel slag can be the material for which of the following? (2020)

1. Construction of base road
2. Improvement of agricultural soil
3. Production of cement

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)

- Steel slag is a by-product of the steel making process. It is produced during the separation of the molten steel from impurities in steel-making furnaces. The slag occurs as a molten liquid and is a complex solution of silicates and oxides that solidifies upon cooling.
- Steel slag is used as a base course material, the material under the surface layer of an asphalt road, track or surface. **Hence, 1 is correct.**
- Steel slag can be used in the agricultural sector due to its ability to correct soil acidity, as it contains some nutrients for the plants and also as silicate fertilizer that is capable of providing silicon to the plants. **Hence, 2 is correct.**
- Steel-slag can be used to produce cement. Further, slag cement is most widely used in concrete, either as a separate cementitious component or as part of a blended cement. It works synergistically with portland cement to increase strength, reduce permeability, improve resistance to chemical attack and inhibit rebar corrosion. **Hence, 3 is correct.**

Therefore, option (d) is the correct answer.

2. Which of the following statements are correct regarding the general difference between plant and animal cells? (2020)

1. Plant cells have cellulose cell walls whilst animal cells do not.
2. Plant cells do not have plasma membrane unlike animal cells which do.

3. Mature plant cell has one large vacuole whilst animal cell has many small vacuoles.

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: (c)

- Plant and animal cells are different as the former possess cell walls, chloroplasts, plastids and a large central vacuole which are absent in animal cells. **Hence, statements 1 and 3 are correct.**
 - On the other hand, animal cells have centrioles which are absent in almost all plant cells. Both plant and animal cells have plasma membranes. **Hence, statement 2 is not correct.**
- Therefore, option (c) is the correct answer.**
3. Which one of the following statements is *not* correct? (2019)
- (a) Hepatitis B virus is transmitted much like HIV.
 - (b) Hepatitis B unlike Hepatitis C, does not have a vaccine.
 - (c) Globally, the number of people infected with Hepatitis B and C viruses are several times more than those infected with HIV.
 - (d) Some of those infected with Hepatitis B and C viruses do not show the symptoms for many years.

Ans: (b)

- Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease. The virus is transmitted through contact with the blood or other body fluids of an infected person, much like HIV transmission.
- A vaccine against Hepatitis B has been available since 1982. The vaccine is 95% effective in preventing infection and the development of chronic disease and liver cancer, due to which it came to be known as first 'anti-cancer' vaccine.
- According to the WHO data, an estimated 296 million people are living with Hepatitis B, whereas an

estimated 58 million people have chronic Hepatitis C infection. There were approximately 37.7 million people living with HIV at the end of 2020 with 1.5 million people becoming newly infected in 2020 globally.

- Hepatitis C is a liver disease caused by the Hepatitis C virus, ranging in severity from a mild illness lasting a few weeks to a serious, lifelong illness. The Hepatitis C virus is a blood borne virus and the most common modes of infection are through exposure to small quantities of blood. This may happen through drug use, unsafe injection practices, unsafe health care, and the transfusion of unscreened blood and blood products. Sometimes Hepatitis B and C viruses do not show the symptoms for many years.

Therefore, option (b) is the correct answer.

4. Consider the following phenomena: (2018)

1. Light is affected by gravity.
2. The Universe is constantly expanding.
3. Matter warps its surrounding space-time.

Which of the above is/are the prediction/predictions of Albert Einstein's General Theory of Relativity, often discussed in media?

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

Ans: (d)

- Space-time is a mathematical model that joins space and time into a single idea called a continuum. This four-dimensional continuum is known as Minkowski Space. According to this model, Einstein held that matter warps its surrounding space-time. **Hence, 3 is correct.**
- Gravitational Lensing states that gravity bends light. When we observe distant galaxy, gravity of matter between earth and galaxy causes the light rays to bend into different paths. When the same light reaches to telescope multiple images are observed in the galaxy. **Hence, 1 is correct.**
- In 1917, Einstein applied his Theory of General Relativity and suggested a model of a homogenous, static, and spatially curved universe. The problem with the model was that, if gravitation was the only active force, then the universe would collapse – an issue which Einstein addressed by introducing the cosmological constant. By 1932, Einstein accepted and adopted a model of an expanding universe. **Hence, 2 is correct.**

Therefore, option (d) is the correct answer.

5. Consider the following pairs: (2017)

Commonly used/ consumed materials	Unwanted or controversial chemicals likely to be found in them
--------------------------------------	---

- | | |
|----------------------|-----------------------------|
| 1. Lipstick | – Lead |
| 2. Soft drinks | – Brominated vegetable oils |
| 3. Chinese fast food | – Monosodium glutamate |

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

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

Ans: (d)

- Lead occurs naturally in the environment. It is a common impurity found in lipsticks, eye shadows, blushes, shampoos, compact powders and body lotions, etc. **Hence, pair 1 is correctly matched.**
 - Brominated vegetable oil (BVO) is a food additive which is used to keep citrus flavouring intact in some sodas and soft drinks. BVO is banned as a food additive in Japan and Europe. **Hence, pair 2 is correctly matched.**
 - Monosodium Glutamate (MSG) is commonly used in Chinese fast food. It is a glutamate, or salt of glutamic acid, which is a “non-essential” amino acid. In the West, this MSG additive has been blamed for a number of adverse reactions – headaches, sweating, flushing, numbness of the face and neck, palpitations, nausea, chest pain and sleeplessness – known collectively as “Chinese restaurant syndrome”. **Hence, pair 3 is correctly matched.**
- Therefore, option (d) is the correct answer.

6. Organic Light Emitting Diodes (OLEDs) are used to create digital display in many devices. What are the advantages of OLED displays over Liquid Crystal displays? (2017)

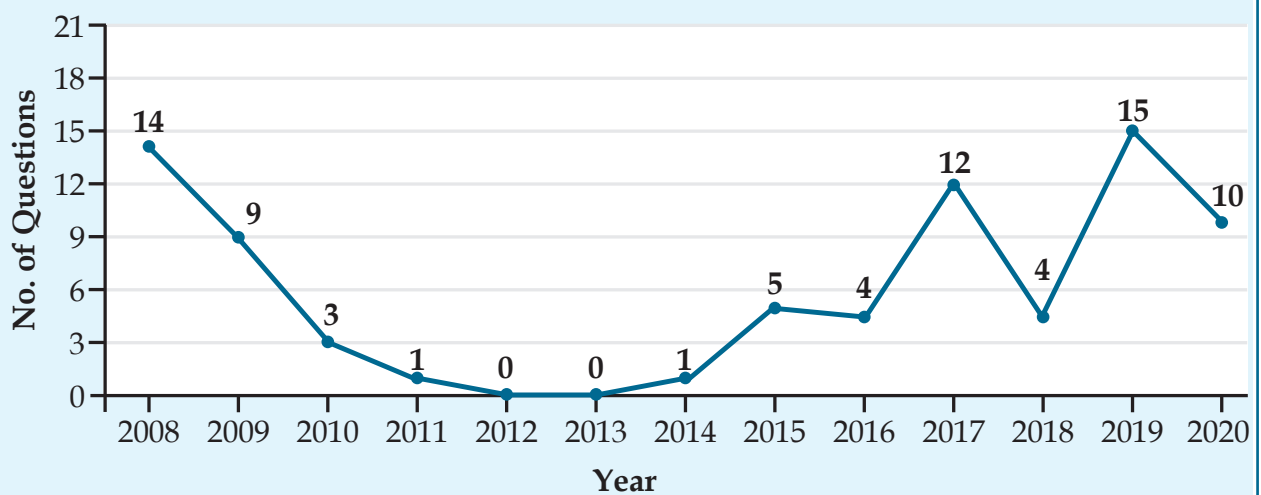
1. OLED displays can be fabricated on flexible plastic substrates.
2. Roll-up displays embedded in clothing can be made using OLEDs.
3. Transparent displays are possible using OLEDs.

Select the correct answer using the code given below:

- (a) 1 and 3 only
(b) 2 only
(c) 1, 2 and 3
(d) None of the above statements is correct

Ans: (c)

CURRENT AFFAIRS/MISCELLANEOUS



Year-wise Trend of Questions

Note: The topic-wise distribution of questions has not been done owing to the lesser number of questions from the subject.

1. With reference to the international trade of India at present, which of the following statements is/are correct? (2020)

1. India's merchandise exports are less than its merchandise imports.
2. India's imports of iron and steel, chemicals, fertilisers and machinery have decreased in recent years.
3. India's exports of services are more than its imports of services.
4. India suffers from an overall trade/current account deficit.

Select the correct answer using the code given below:

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

Ans: NA

- As of August 2020, India's merchandise exports were USD 22.70 billion and merchandise imports were USD 29.47 billion which clearly means that merchandise exports are less than its merchandise imports.
- As per the Economic Survey 2020, India's imports of iron and steel have decreased but imports of chemicals, fertilizers and machinery have increased.
- As of April-August 2020-21, the service exports are estimated at USD 84.47 billion as compared to the estimated service imports of USD 49.56 billion. This means, India's exports of services are more than its import of services.
- Trade deficit is a situation when the exports of goods is less than its imports whereas the current account deficit is a situation when the overall trade in goods and services is on the negative side (i.e. country imported more than it exported). As of now, India's exports of goods are less than its imports but the exports of services is more than its imports. Moreover, the overall trade balance is negative because of high trade deficit. Therefore, India suffers from an overall trade/current account deficit.

Note: Question dropped by the Commission.

2. One common agreement between Gandhism and Marxism is (2020)

- (a) the final goal of a stateless society
- (b) class struggle
- (c) abolition of private property
- (d) economic determinism

Ans: (a)

- The final aim of both Gandhism and Marxism is the establishment of a stateless and classless society, however their means for achieving this aim are different. Mahatma Gandhi wanted to achieve this end through non-violent means but Marx wanted to achieve it through violent means.

• Ways to Achieve Classless Society

- **Marxism:** Overthrow of capitalism; social ownership of means of social production; compulsory labour.
- **Gandhism:** Doctrine of trusteeship: moral persuasion of capitals to regard themselves as 'trustee' of public property; restore dignity of labour.

Therefore, option (a) is the correct answer.

3. With reference to the history of India, consider the following pairs: (2020)

Famous Place	Present State
1. Bhilsa	Madhya Pradesh
2. Dwarasamudra	Maharashtra
3. Girinagar	Gujarat
4. Sthanesvara	Uttar Pradesh

Which of the pairs given above are correctly matched?

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

Ans: (a)

- Vidisha (formerly known as Bhelsa and known as Besnagar in ancient times) is a city in the state of Madhya Pradesh. It is located around 60 km northeast of the state capital, Bhopal. **Hence, pair 1 is correctly matched.**

- Halebidu, previously known as Dorasamudra or Dwarasamudra, the ancient Hoysala capital, houses the ornate Hoysaleswara and Kedareshwara temples, and is one of the well-visited tourist attractions of Karnataka state. **Hence, pair 2 is not correctly matched.**
- Girnar, also known as Girinagar (city-on-the-hill) or Revatak Parvata, is a group of mountains in the Junagadh District of Gujarat. This place is sacred to the Jains because it is the place where Lord Neminatha went to attain salvation. **Hence, pair 3 is correctly matched.**
- Thanesar or Sthaneshwara, a historical town, located adjacent to what is now newly created Kurukshetra city in Haryana. **Hence, pair 4 is not correctly matched.**

Therefore, option (a) is the correct answer.

4. In India, under cyber insurance for individuals, which of the following benefits are generally covered, in addition to payment for the loss of funds and other benefits? (2020)
1. Cost of restoration of the computer system in case of malware disrupting access to one's computer
 2. Cost of a new computer if some miscreant wilfully damages it, if proved so
 3. Cost of hiring a specialized consultant to minimize the loss in case of cyber extortion
 4. Cost of defence in the Court of Law if any third party files a suit

Select the correct answer using the code given below:

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

Ans: (b)

- Cyber Insurance is designed to guard businesses from the potential effects of cyber-attacks. It helps an organisation mitigate risk exposure by offsetting costs, after a cyber-attack/breach has happened. In simple terms, cyber insurance is designed to cover the fees, expenses and legal costs associated with cyber breaches.
- **Coverage Includes**
 - Response to breach events (notification, call centre service, breach resolution, mitigation services, public relation and crisis management);
 - Investigation & fines including lawyers, professional fees, administration cost etc; **hence, 4 is correct**

- Expenses such as forensic, IT audit, crisis management, legal costs; **hence, 3 is correct.**
- Privacy & data liability;
- Loss of personal identifiable information;
- Loss of corporate confidential info;
- Network liability such as DDoS Attacks;
- Multimedia covers including copyright issues;
- Business Interpretation;
- Income loss, business interruption cost, system damage and restoration cost, any extra expenses; **hence 1 is correct.**
- Cyber theft;
- Fund transfer frauds;
- E-theft loss;
- E-communication loss;
- Cyber extortion.

Therefore, option (b) is the correct answer.

5. In India, why are some nuclear reactors kept under "IAEA safeguards" while others are not? (2020)
- (a) Some use uranium and others use thorium
 - (b) Some use imported uranium and others use domestic supplies
 - (c) Some are operated by foreign enterprises and others are operated by domestic enterprises
 - (d) Some are State-owned and others are privately-owned

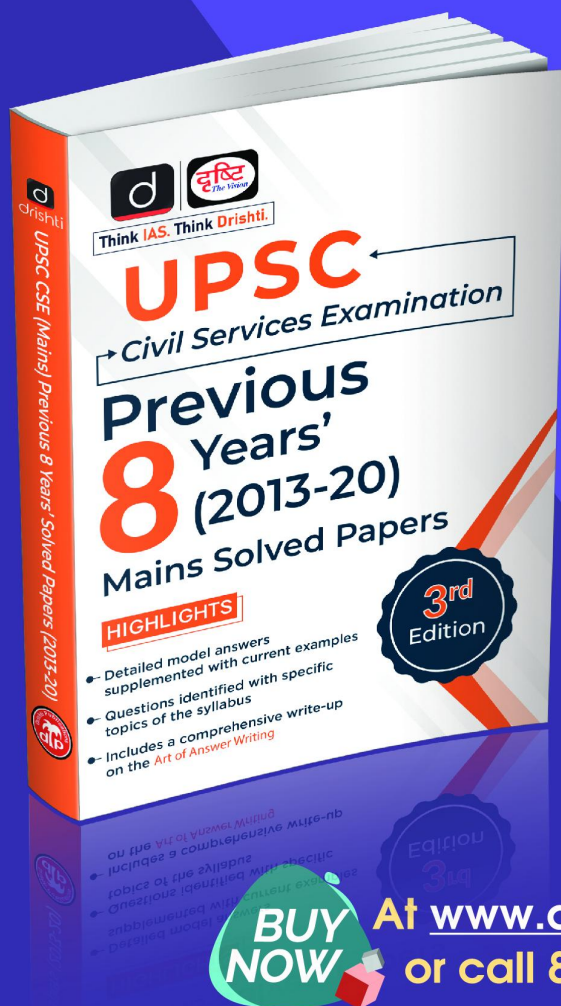
Ans: (b)

- The nuclear facilities are kept under International Atomic Energy Agency (IAEA) safeguards if the source of Uranium which is the fissile material for a nuclear reactor is from outside the territory of India or if the new reactor plants are established with foreign collaboration.
- This is to ensure that imported uranium was not diverted for military use and assure that the imported uranium is used to generate nuclear energy for civilian purposes.
- There are at present 22 operational reactors, of which 14 are under the International Atomic Energy Agency (IAEA) safeguards as these use imported fuel.
- Under safeguards agreement, the International Atomic Energy Agency (IAEA) has the right and obligation to ensure that safeguards are applied on all nuclear material in the territory, jurisdiction or control of the State for the exclusive purpose.

Therefore, option (b) is the correct answer.



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