1. **Answer: [A] Only 1**

Mahayana Buddhism, also known as the Great Vehicle, is the form of Buddhism prominent inNorth Asia, including China, Mongolia, Tibet, Korea, and Japan. It started in the first century C.E.and Vedanta school is of much earlier time period.

2. **Answer: [A] Only 1, 2 & 3**

The summary of the societal conditions in early medieval India are as follows:

• Political decentralization: The new polity is characterized by decentralization and hierarchy,features suggested by the presence of a wide range of semi-autonomous rulers, Samantas,Mahasamantas and others and the hierarchized positioning of numerous Rajapurushas employedby royal courts.

• Emergence of Landed intermediaries: This is the hallmark of Indian feudal social formation andis seen to be linked both to the disintegration and decentralization of state authority and to majorchanges in the structure of agrarian relations. The emergence of landed intermediaries- adominant landholding social group absent in the early historical period- is linked to the practice ofland grants which began with the Satavahanas. The earliest land grants belonging to the firstcentury BC were given to the Buddhist priests and Brahmans and other religious establishments.

However, in the post- gupta period even administrative officials were granted land. The landedbeneficiaries were given both powers of taxation and coercion, leading to the disintegration of thecentral authority. The secular recipients of the grants and the autonomous holders of land aregenerally termed as fief holders and free holders.

• Localization of economy: There was a economy to self-sufficient villages as units of productionThus, ruralisation was an important dimension of the transition process. This change was theresult of the decline of early historical urban centres and commercial networks leading to thepractice of payment in land grants instead of earlier practice of remuneration in cash, migration ofdifferent urban social groups to rural areas, expansion of agrarian space and the crystallization ofJajmani type of relationships in the rural areas. According to one formulation, fief holders and free-holders in rural society emerged as agents of social change in the later phase of early medievalsociety, generating once again such features of early historical economy as trade, urbanization anda market economy.

• Subjection of the peasantry : Likened sometimes to serfdom, characterizing the of the subjectionof peasantry , such as immobility, forced labour (vishti) and the payment of revenue at exorbitantlyhigh rates- all point to the nature of stratification in Post-Gupta society. The condition of thepeasantry in this pattern of rural stratification was in sharp contrast to what the agrarian structurein early historical India represented, since that structure was dominated by free vaishya peasants

and labour services provided by the Shudras. It is important to note here that although the earliestexample of sharecroppers being transferred along with the land can be traced in the third centurypallava inscription from Andhra, Orissa and Deccan, from the sixth century AD onwardssharecroppers and peasants were particularly asked to stick to the land granted to the beneficiaries.The custom became fairly common in the post-gupta period and the villages transferred to thegrantees are known as dhana-jana-sahita, janata-samriddha and saprativasi-jana-sameta. Thus theartisans and peasants were asked not to leave the village granted to the beneficiaries or migrate to tax-free village.

• Proliferation of castes : A striking social development from about the seventh century onwardswas the proliferation of castes. The BrahmavaivartaPurana, a seventh century work, counts 100castes including 61 castes noted by Manu, but the VishnudharmottaraPurana (8th century) statesthat thousands of mixed castes are produced by the connection of vaishyas women with men oflower castes. In fact, proliferation affected the brahmanas, the Rajaputs, and above all, the shudras

and untouchables. Increasing pride of birth, characteristic of feudal society, and the accompanyingself-sufficient village economy, which prevented both spatial and occupational mobility, gave riseto many castes. The guilds of artisans gradually hardened into castes due to lack of mobility inpost-gupta times. The absorption of the tribal peoples into the brahmanical fold, though as old asvedic times, was mainly based on conquests. Coupled with the process of large-scale religious land

grants. Acculturation assumed enormous dimensions and considerably added to the variety of theshudras and so-called mixed castes.

• According to Prof. R.S. Sharma social changes were mainly the product of certain economicdevelopments, such as land grants and large scale transfers of land revenues and land to bothsecular and religious elements, decline of trade and commerce, loss of mobility of artisans, peasantsand traders, unequal distribution of land an power etc. He holds the economic factor responsiblefor the emergence of certain new castes and decline of certain old ones. Thus the constant transferof land of land revenues made by princes to priests, temples and officials led to the rise and growthof the scribe or the Kayastha community which undermined the monopoly of Brahmans as writers

and scribes. Similarly, the decline of trade and commerce led to the decline in the position of theVaishyas. The process of proliferation and multiplication of castes was yet another marked featureof the social life of the period.

3. **Answer: [C] 1, 2, 3 & 4**

The given statements are features of Gandhara School of art..

The Gandhara style might have been originated under the Indo-Bactrian and Indo-Parthian rulers but it was under Kanishka that made a rapid development. Some of the chief features the Gandhara style are the following:

1. Unlike the older schools of art, under Gandhara school of art there was dominance of lively statues of Gautama Buddha. His existence was shown only by symbols such as foot-prints, the Bodhi-tree, a vacant seat or the umbrella.
2. In this school a great care was taken to show the physical features, muscles and moustaches, etc. of a figure in as natural a way as was possible.
3. A great importance was attached to refineness and polish in the Gandhara School of Art.
4. The technique and forms applied were Greek in nature but the ideas, inspirations and subjects were all Indians.
5. The Gandhara art was mostly used to make statues and images of Lord Buddha. But from a study of certain specimens of this school that are now placed in Lahore, Calcutta and Peshawar museums, we can say that sometimes this art was used to depict certain scenes from Buddha's life and also to make statues of the Kushan rulers.
6. Most of the specimens of this school were executed in stone but the discovery of a large number of images in stucco, cement, terracotta and clay, show that along with stone, sometimes stucco, cement, terracotta and clay were also used for making statues, images and sculptures concerning the Buddhist faith
7. The chief centre of the Gandharva School of Art was no doubt Gandhara itself but the discovery of Gandhara specimens from Afghanistan and Taxila goes to prove that this Indo-Greek art flourished over a vast region.

4. **Answer: [A] Only 1**

Arthashastra was intended as a guidebook for the king, to help him control both the people in his kingdom and the surrounding states. The Arthashastra's fundamental assumption was that the king wanted to remain in power and should do whatever it took to retain it. Within the kingdom, Kautilya advocated a strict and authoritarian government aided by an extensive network of spies to gather intelligence and assess the popular mood. Although the Arthashastra was never the "Bible" of any ruling Indian dynasty, it detailed political philosophy and practices that existed in ancient and medieval India and can even be discerned in contemporary parliamentary politics.

5. **Answer: [B] Mudrarakshasha**

Mudrarakshasa is the only surviving Sanskrit drama written by the playwright Vishakhadatta,who is believed to ave lived in the sixth century. The play chronicles the rise of ChandraguptaMaurya, founder of the Maurya dynasty, and the machinations of Kautilya

6. **Answer: [B] Licchvi**

Please further note that Licchvis, who were also known as Vrijjis were subdued by Ajatshatru.They lost in history in the fourth and fifth century AD but the name of Kumaradevi theLicchviduhitra is still written in golden letters in Indian History who married to Chandragupta Iand witnessed the foundation of great imperial Guptas. Please note that originally Gupta dynastywas founded by Srigupta.

7. **Answer: [A] Saraswati river and Drsadvati River**

The earliest of the Hindu sacred text, Rig-veda refers to the Saprasindhava, Panchanada, Madhydesa and Praki. These were perhaps the first references to the emergence of regions. The geographical location of these regions suggests that the Indo- Aryans preferred to settle down along the banks of the riversSindhu (Indus), Vitasta, Jhelum), Asikni also known Chandrabhaga (Chenab). References are also found to Airavati (Ravn. Parushuni or Vipasa (Dcas), Saradru (Saduj) and the Saraswati. There is a general agreement that the region known as Panchanada included the plains of the five great eastern tributaries of the Sindhu river. Further east, the land between the Saraswati and Drishadvati was known to the IndoAryans as Brahmavarta. On the periphery of these plains lie the alluvial basins of the Gomti (Gomal), Krumu (Kurrum) and Kubha (Kabul). It is believed that these were the earliest Indo-Aryan settlements. Literary evidence suggests eastward march of the Indo-Aryans led to their settlements to the Madhyadesa regions. (Source: Geography of the South Asian subcontinent: a critical approach By Aijazuddin Ahmad)

8. **Answer: [C] 1 & 3**

The Agamas are theological treatises and practical manuals of divine worship. The Agamas include the Tantras, Mantras and Yantras. These are treatises explaining the external worship of God, in idols, temples, etc. All the Agamas treat of (i) Jnana or Knowledge, (ii) Yoga or Concentration, (iii) Kriya or Esoteric Ritual and (iv) Charya or Exoteric Worship. They also give elaborate details about ontology and cosmology, liberation, devotion, meditation, philosophy of Mantras, mystic diagrams, charms and spells, temple-building, image-making, domestic bservances,

social rules, public festivals, etc. The Agamas are divided into three sections: The Vaishnava, the Saiva and the Sakta. The three chief sects of Hinduism, viz., Vaishnavism, Saivism and Saktism, base their doctrines and dogmas on their respective Agamas. The Vaishnava Agamas or Pancharatra Agamas glorify God as Vishnu. The Saiva Agamas glorify God as Siva and have given rise to an important school of philosophy known as Saiva-Siddhanta, which prevails in South India, particularly in the districts of Tirunelveli and Madurai. The Sakta Agamas or Tantras glorify God as the Mother of the Universe, under one of the many names of Devi. Please note that Agamas do not derive their authority from the Vedas, but are not antagonistic to them. They are all Vedic in spirit and character. That is the reason why they are regarded as authoritative.

9. **Answer: [D] 1, 2 & 3.**
All are correct .In the coinage of the North Indian and Central Asian Kushan Empire (approximately 30-375 CE) the main coins issued were gold, weighing 7.9g., and base metal issues of various weights between 12g and 1.5g. Little silver coinage was issued, but in later periods the gold used was debased with silver.[1]
The coin designs usually broadly follow the styles of the preceding Greco-Bactrian rulers in using Hellenistic styles of image, with a deity on one side and the king on the other. Kings may be shown as a profile head, a standing figure, typically officiating at a fire altar in Zoroastrian style, or mounted on a horse. The artistry of the dies is generally lower than the exceptionally high standards of the best coins of Greco-Bactrian rulers. Continuing influence from Roman coins can be seen in designs of the late 1st and 2nd century CE, and also in mint practices evidenced on the coins, as well as a gradual reduction in the value of the metal in base metal coins, so that they become virtual tokens. Iranian influence, especially in the royal figures and the pantheon of deities used, is even stronger.[2] Under Kanishka the royal title of "King of kings" changed from the Greek ,to the Persian form Shah of Shahs.[3]
Much of what little information we have of Kushan political history derives from coins. The language of inscriptions is typically the Bactrian language, written in a script derived from Greek. Many coins show the tamgasymbols as a kind of monogram for the ruler. There were several regional mints, and the evidence from coins suggests that much of the empire was semi-independent.
10. **Answer: [D] 1, 2 & 3**
Whereas the solar calendar is usually used for astrological purposes, the lunar calendar is important for religious life. The lunar calendar is used to measure the two eras still used for dating history: the Vikram era (fifty-six or fifty-seven years later than the common era) and the Shaka era (seventy-eight years earlier than the common era). in the Shaka era it begins with the sun's transition into Aries, determined in India as falling on April 14. Hence, to convert a Shaka era date to a common era date, one adds seventy-nine years for dates from January 1 to April 14, and seventy-eight years for dates from April 15 to December 31.
11. **Answer: [A] Aryabhatta**
Aryabahata was the first Indian astronomer to state that the Earth is spherical and rotates on itsaxis. He went on to explain that the apparent daily east- west motion of the sun, moon, planets, and stars is due to the rotation of the Earth from west to east. He introduced two systems for reckoning time: (1) the audayika system, from sunrise to next sunrise, and (2) the ardharaatrikasystem, that is, midnight to midnight (sidereal time). The time for one sidereal rotation of theEarth is given as 23h 56m 4.1s (modern value: 23h 56m 4.091s). Responsible for the Indian mathematical renaissance, Aryabhata set the pattern and tone of modern mathematical investigations
12. **Answer: [C] Both 1 & 2**
Satavahanas are considered the flag bearers of Aryanism to Deccan. They were the first NativeIndians who had issued the coins with portraits of their kings. All the coins of Satavahanas usedPrakrit dialect and also on backside the southern language (Telugu or Kannada). Prakrit seems tobe the official language of Satavahanas. The Satavahanas worshipped the Hindu Deities such as Rama, Krishna, Vasudeva etc. but they alsopatronized the Buddhism. The Nagarjunkonda in Andhra Pradesh and Amaravati in Maharastrabecame the important centers of Buddhism during the reign of Satavahanas and their successors.Saatavahana Built many Chaitya and Viharas. Most of them were rock cut from the solid rock inNorth Western Deccan and Maharashtra. The Karle Chaitya of 1st century BC is one of the mostimportant Chaitya. The Viharas of the 1 century AD at Nasik bear the inscription of the Gautami Putra Satkarni and Nahapana. The Amaravati Stupa was built in the reign of Satavahanas.
13. **Answer: [A] Rastrakutas, Palas and GurjaraPratiharas**
The Tripartite struggle describes the period between the 8th century and the 10th century inwhich India witnessed a struggle for the resources of the rich Gangetic Plains. The three (tri-)parties involved in this struggle were – The Rashtrakutas in the South, The Pala dynasty of Bengal and the GurjaraPratihara dynasty reigning from Malwa.The Tripartite struggle was a struggle forpower and control over the central Gangetic valley among three major

empires in India during the8th Century. Thus lured by the immense strategic and economic potentialities of the kingdom of Kannauj, theGurjara-Pratiharas of Bhinmal (Rajasthan), the Palas of bengal and the Rashtrkutas of Manyaketa(Maharashtra) fought against each other. This tripartite struggle continued for nearly a centuryand ultimately ended in favour of the Gurjara- Pratihara ruler Nagabhata II who founded theGurjara-Pratihara kingdom at Kannauj which survived for nearly to centuries.

14. **Answer: [C] Both 1 & 2**

The campaigns of Samudra Gupta to the east and the south and the repeated tours of Harshaensured the continuation of efficient communication, and goods moved easily to all parts of India.On the roads, pack animals and ox-drawn carts were used, and in certain areas elephants wereused. The lower reaches of the large rivers such as the Ganges, Yamuna, Narmada, Godavari,Krishna, and Kaveri were the main waterways. The ports of the east coast, Tamralipti,Ghantashala, and Kadura handled the north-Indian trade with south-east Asia, and those of thewest coast, Broach, Chaul, Kalyan and Cambray, traded with the Mediterranean and west Asia butthe more southerly of these ports were outside Gupta control. The export of spices, pepper,sandalwood, pearls, precious stones, perfumes, indigo, and herbs continued as before but the commodities that were imported differed from those of earlier times. Chinese silk came in greaterquantity, as did ivory from Ethiopia. The import of horses, coming from Arabia, Iran, and Bactria,either overland to centres in the north-west or by sea to the west coast, increased during thisperiod. It is strange that India never bred sufficient horses of quality, the best blood having alwaysto be imported; this was to have disastrous consequences on the cavalry arm of Indian armies,eventually making the cavalry ineffective, particularly in comparison with central Asianhorsemen.

15. **Answer: [C] Harsha**

By the time of Harsha, Pataliputra, once the capital of most north Indian dynasties, lost its status,and instead Kanauj (in western Uttar Pradesh) came to dominate the Ganges plain.

16. Answer: **B**

Impossible Trinity: **Exchange rate management is complex and a challenge for any central bank. There is an 'impossible trinity' that is impossible for any central bank to manage at the same time. This trinity includes "Exchange rate, full currency convertibility and independent monetary policy". At best, central bank can manage any two of them but not all the three. The biggest challenge before any central bank is which two, to manage, when all three are imperatives especially in difficult circumstances.**

17. **Answer:** D

Global Depository Receipts (GDRs) is a mechanism which allows one to buy and sell shares of a foreign company without having to bother about opening a foreign brokerage account. Simply put, a GDR allows investors of any country to purchase and sell shares of a company in any other country, entitling the shareholders to partake in the dividend and capital gains of that foreign company. GDRs, thus, offer investors a way to diversify their portfolios.

How does the GDR work?

A GDR is set up when a company from one country intends to list its publically-traded shares in another country. These need not be shares alone; they could also be debt securities. Before this is allowed by a foreign country's stock exchange, stiff conditions have to be met like the backing of a depository bank, and so on.**Depository banks:** GDRs are usually backed by depository banks that provide companies, investors and traders opportunities to make global investments. These are banks whose primary task is to hold shares of companies based in another country. Such banks essentially sell the GDRs. They also ensure that investors receive their dividends and capital gains. Depository banks also handle all tax-related issues in the company's home country. Since all GDR transactions have to go through a depository bank, investments made in them are safe. However, their valuations are always associated with normal market risks.

18. B

Participatory Notes commonly known as P-Notes or PNs are instruments issued by registered foreign institutional investors (FII) to overseas investors, who wish to invest in the Indian stock markets without registering themselves with the market regulator, the Securities and Exchange Board of India - SEBI. SEBI permitted foreign institutional investors to register and participate in the Indian stock market in 1992.

Investing through P-Notes is very simple and hence very popular amongst foreign institutional investors. Participatory Notes have the following benefits.

• Anonymity: Any entity investing in participatory notes is not required to register with SEBI (Securities and Exchange Board of India), whereas all FIIs have to compulsorily get registered. It enables large hedge funds to carry out their operations without disclosing their identity, but recently SEBI has tightened the KYC norms for P-notes, to curb black money

• Ease of Trading: Trading through participatory notes is easy because participatory notes are like contract notes transferable by endorsement and delivery. Tax Saving: Some of the entities route their investment through participatory notes to take advantage of the tax laws of certain preferred countries.
• Money Laundering: PNs are becoming a favourite with a host of Indian money launderers who use them to first take funds out of country through hawala and then get it back using PNs.
• P-notes are not necessarily just for the India market. In general terms, p-notes are used for any market/share classification whereby there are restrictions for foreign investors (i.e. require a Foreign Investor-type license for non-locally domiciled brokerages). The notable markets include Shenzhen and Shanghai for China A-shares, some MENA markets and Korea in addition to India.

19. A
According to RBI, terms loans on which interest or installment of principal remain overdue for a period of more than 90 days from the end of a particular quarter is called a Non-performing Asset. However, in terms of Agriculture / Farm Loans; the NPA is defined as under: For short duration crop agriculture loans such as paddy, Jowar, Bajra etc. if the loan (instalment /interest) is not paid for 2 crop seasons, it would be termed as a NPA. For Long Duration Crops, the above would be 1 Crop season from the due date.

20. D
Categories under priority sector are:
1. Agriculture
2. Micro, Small and Medium Enterprises
3. Export Credit
4. Education
5. Housing
6. Social Infrastructure
7. Renewable Energy
8. Others
Remember these as they are important for both Prelims and Mains. Also it is important overall and recently because renewable energy has been added to the list.

21. B
If a person is optimistic and believes that stocks will go up, he or she is called a "bull" and is said to have a "bullish outlook". A bear market is when the economy is bad, recession is looming and stock prices are falling. Bear markets make it tough for investors to pick profitable stocks.

22. D
in 2016, IMF voted to include Chinese Yuan into SDR currency basket with other 4 currencies. It would increase the desirability of Chinese Yuan in the market.

23. C
Open Market Operations - OMO' The buying and selling of government securities in the open market in order to expand or contract the amount of money in the banking system. Purchases inject money into the banking system and stimulate growth while sales of securities do the opposite.

24. **C. Cash reserve Ratio (CRR)** is the amount of funds that the banks have to keep with the RBI. If the central bank decides to increase the CRR, the available amount with the banks comes down. The RBI uses the CRR to drain out excessive money from the system. Commercial banks are required to maintain with the RBI an average cash balance, the amount of which shall not be less than 3% of the total of the Net Demand and Time Liabilities (NDTL), on a fortnightly basis and the RBI is empowered to increase the rate of CRR to such higher rate not exceeding 20% of the NDTL.

25. **C**
An economic stimulus is the use of monetary or fiscal policy changes to kick start a lagging or struggling economy. Governments can use tactics such as lowering interest rates, increasing government spending and quantitative easing, to name a few, to accomplish this. The purpose is simple - to push more in the economy. Increase in taxes , on the other hands, reduces money with the people and is not correct. Governments usually resolve to tax breaks to stimulate the economy

26. Ans-B
2013 question
Article 75:
The ministers shall hold office during the pleasure of the President.
The council of ministers shall be collectively responsible to the Lok Sabha.

27. Ans-A

Independence of Supreme Court

1. Mode of Appointment
2. Security of Tenure
3. Fixed Service Conditions
4. Expenses Charged on Consolidated Fund
5. Conduct of Judges cannot be Discussed
6. Ban on Practice after Retirement
7. Power to Punish for its Contempt
8. Freedom to Appoint its Staff Separation from Executive
9. Its Jurisdiction cannot be Curtailed

28. Ans-A

In 1997, the Supreme Court held that a person who is not a member of either House of Parliament can be appointed as Prime Minister for six months, within which , he should become a member of either House of Parliament ; otherwise, he ceases to be the Prime Minister.

29. Ans-C

As a federal court , the Supreme Court decides the disputes between different units of the Indian Federation . More elaborately , any dispute between:

(a) the Centre and one or more states; or

(b) the Centre and any state or states on one side and one or more states on the other ; or

(c) between two or more states.

In the above federal disputes, the Supreme Court has exclusive original jurisdiction .

30. Ans-D

Article 123 of the Constitution empowers the President to promulgate ordinances during the recess of parliament. His ordinance-making power is coextensive as regards all matters except duration , with the law-making powers of the Parliament .The President can also withdraw an ordinance at any time. Every ordinance issued by the President during the recess of Parliament must be laid before both the Houses of Parliament when it reassembles. If the ordinance is approved by both the Houses, it becomes an act . If Parliament takes no action at all , the ordinance ceases to operate on the expiry of six weeks from the reassembly of Parliament.

31. Ans-C

Written Constitution and Independent judiciary are features of the Federal Government.

The features or principles of parliamentary government in India are:

1. Nominal and Real Executives
2. Majority Party Rule
3. Collective Responsibility
4. Political Homogeneity
5. Double Membership
6. Leadership of the Prime Minister
7. Dissolution of the Lower House
8. Secrecy

32. Ans-D

The veto power enjoyed by the executive in modern states can be classified into the following four types:

1. Absolute veto, that is, withholding of assent to the bill passed by the legislature.
2. Qualified veto, which can be overridden by the legislature with a higher majority .
3. Suspensive veto, which can be overridden by the legislature with an ordinary majority .
4. Pocket veto, that is, taking no action on the bill passed by the legislature.

Of the above four , the President of India is vested with three—absolute veto, suspensive veto and pocket veto. There is no qualified veto in the case of Indian President ; it is possessed by the American President .

33. Ans-B

Article 74

1. 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.

2. The advice tendered by Ministers to the President shall not be inquired into in any court .

34. Ans-A

The President can proclaim a national emergency only after receiving a written recommendation from the cabinet. The 44th Amendment Act of 1978 introduced this safeguard to eliminate any possibility of the prime minister alone taking a decision in this regard.

The 38th Amendment Act of 1975 made the declaration of a National Emergency immune from the judicial review. But , this provision was subsequently deleted by the 44th Amendment Act of 1978

35. Ans-B

Article 358 automatically suspends the fundamental rights under Article 19 as soon as the emergency is declared. On the other hand, Article 359 does not automatically suspend any Fundamental Right . It only empowers the president to suspend the enforcement of the specified Fundamental Rights

Article 358 operates only in case of External Emergency (that is, when the emergency is declared on t h e grounds of war or external aggression) and not in the case of Internal Emergency (ie, when the Emergency is declared on the ground of armed rebellion). Article 359, on the other hand, operates in case of both External Emergency as well as Internal Emergency .

President can not suspend the right to move the Court for the enforcement of fundamental rights guaranteed by Articles 20 to 21 (by The 44th Amendment Act of 1978)

A proclamation imposing President 's Rule must be approved by both the Houses of Parliament with in two months from the date of its issue.(note that for National Emergency it is one month)

36. Ans-D

He should be qualified for election as a member of the Rajya Sabha.(note that for president , it is LS)

37. Ans-B

When no party has a clear majority in the Lok Sabha, then the President may exercise his personal discretion in the selection and appointment of the Prime Minister . In such a situation , the President usually appoints the leader of the largest party or coalition in the Lok Sabha as the Prime Minister and asks him to seek a vote of confidence in the House within a month . There is also one more situation when the president may have to exercise his individual judgement in the selection and appointment of the Prime Minister , that is, when the Prime Minister in office dies suddenly and there is no obvious successor. A minister who is a member of one House of Parliament has the right to speak and to take part in the proceedings of the other House also, but he can vote only in the House of which he is a member.

38. Ans-D

National emergency can also be imposed selectively.

It is not immune to judicial review. The court can question on grounds of being malafide in nature.

Both the houses need to approve it. However, while revoking only the approval of one house will do.

The President can unilaterally revoke emergency without the need for Parliamentary approval.

39. Ans-A

States are autonomous in their areas of functioning and an independent court ensures that conflicts between them are resolved amicably.

Power to issue writs is to protect the political democracy in India by protecting fundamental rights, not federalism.

40. Ans-C

Only six cabinet ministers are a part of the Inter-state council. They are nominated by the PM.

The members of the council are

(i) Prime minister as the Chairman

(ii) Chief ministers of all the states

(iii) Chief ministers of union territories having legislative assemblies

(iv) Administrators of union territories not having legislative assemblies

(v) Governors of States under President 's rule(vi) Six Central cabinet ministers, including the home minister , to be nominated by the Prime Minister.

41. (b) Aadhaar is a 12-digit number issued by the UIDAI to the residents of India, however, it does not confer any right of citizenship or domicile in respect of an Aadhaar number holder. Any resident, irrespective of age and gender may voluntarily enrol free of cost to obtain Aadhaar. Aadhaar is proof of identity, proof of residence and now also financial address for its residents.

Data collected includes:

Demographic information required: Name, Date of Birth, Gender, Address, Parent/Guardian details (required for children, optional for adults),Contact details phone and email (optional) Biometric Information required: Photo, 10 finger prints, Iris

42. (d) refer map
43. (a) One of the major reasons complicating the issue is of Katchatheevu Island. India ceded the uninhabited island to its southern neighbour in 1974 under a conditional accord.In 2009, the Sri Lankan government declared Katchatheevu Island as sacred land owing to a Catholic shrine's presence on the piece of land.
44. (b) Nomadic Elephant 2017: The twelfth edition Indo-Mongolian Joint Military Exercise Nomadic Elephant 2017 has begun at Vairengte in Mizoram.
45. (c) It is an intergovernmental organization, principal platform for international co-operation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. Promotes the widespread adoption of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy. India is a member country of IRENA.
46. (b) She was a member and later the head of Theosophical Society which later shifted its headquarters to Adyar, Chennai. Her propaganda in England for a self-government to Indians made way for formation of Home Rule League in London. As a crusader of education, she established Central Hindu College at Banares in 1897. She also opened schools and colleges for girls like Central Hindu Girls School at Banares, Madanapalli High school and College and Adayar National College Her weekly newspapers were Commonweal (focusing on people's problems) and New India. In 1917, she started Indian Boys Scout Association for her movement. In 1917 only she became the first woman president of the Indian National Congress and also introduced the tri-colour flag for the Congress party
47. (c) Once every two years, Sidi is part of the annual Udusalamma temple festival held every March in honour of the devi, an incarnation of Durga in Hassan district, Karnataka. The ritual involves men being tied to a wooden pole with hooks inserted in their bodies and women walking with their mouths locked with iron hooks Those playing Sidi have to be on fast for at least five days before the festival as it believed to help in piercing the iron hook into their skin.
48. (b) First Human Development report was published in 1990. This approach was developed by economist MahbubUlHaq and Nobel Laureate Amartya Sen. It introduced a new approach called Human Development Approach which is about expanding the richness of human life (focus on their health, education, etc) rather than simply the richness of the economy (GDP) in which human beings live. Three dimensions of Human Development First is Decent Standard of Living which is calculated though the Gross National Income Per Capita. Second is Long and healthy life which is calculated through Life Expectancy at Birth. Third is Access to Knowledge which is calculated through mean years of education among the adult population and expected years of schooling for children
49. (b) It is NASA's upcoming interplanetary mission to explore the habitability of Jupiter's icy moon Europa The term "clipper" refers to the clipper ships that sailed across the oceans of Earth in the 19th century. In the grand tradition of these classic ships, the Europa Clipper spacecraft would fly by Europa, as frequently as every 2 weeks
50. (d) It is a wholly owned Government of India Company that has been given 'Miniratna' status. It is under the administrative control of the Department of Space.
51. (a) GRAPES-3 (Gamma Ray Astronomy PeV Energies Phase-3) is a muon telescope observation unit, located in Ooty (Nilgiri ,Tamilnadu). The first cosmic ray experiment was started in 1955 as GRAPES-1 by Tata Institute of Fundamental Research (TIFR), which was upgraded in various stages to GRAPES-2, before the new experiment GRAPES-3 was established. GRAPES-3 has been established with the collaboration of the Tata Institute of Fundamental Research, Mumbai, India and the Osaka City University, Osaka, Japan.
52. (b) The new vaccine is based on BCG vaccine. However it is more powerful and efficacious as it contains a gene better recognised by the immune system. The safety of the vaccine has been previously tested and it has been found to be safe, well-tolerated, and immunogenic vaccine in newborn infants. The vaccine will be tested in 2000 adults who have been successfully treated and cured for TB.

LIFI

S. No.	Parameter	Li-fi	Wi-fi
1	SPEED	> 1 GB/S	around 150 Mb/s
2	Medium of data transfer	Use light as carrier	Use radio spectrum
3	Spectrum range	Visible light has 10000 times more	Having less spectrum range than VLC
4	Cost	Cheaper	Expensive
5	Network topology	Point to point	Point to point
6	Operating frequency	Hundreds of Tera Hz	2.4 GHz

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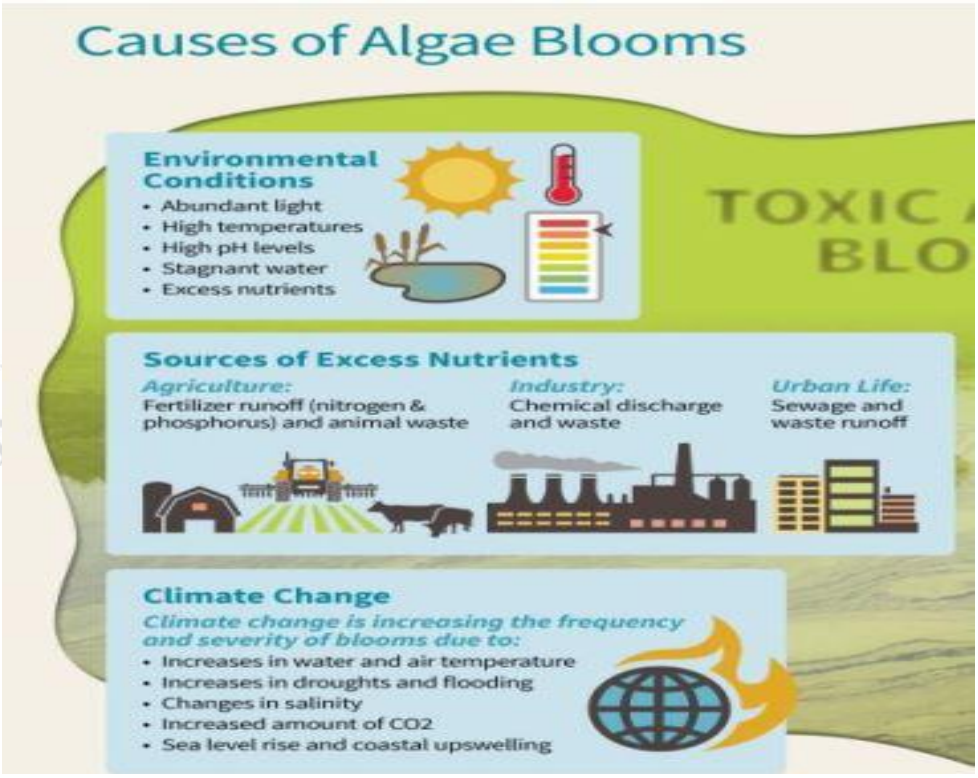
53. (c)
54. (a) It is a symbolic event organised by World Wide Fund for Nature (WWF) at Sydney (Australia) in 2007. Across the globe, various organisations, households and individuals switch off their lights for one hour to show that they care about the future of the planet earth. Through this, people also come to know about the contemporary environmental issues such as global warming and depletion of natural resources.
55. (d) t is an International Union created in 1948, comprises of both government and civil society organisations. It is only environmental organisation with official United Nations Observer Status It engage in data gathering and analysis, environmental research, advocacy, lobbying conservation, spreading education about equitable and ecologically sustainability. It publishes the Red Data Book under Global Species Programme, working with the Species Survival Commission. Red Data Book assessing the conservation status of species, subspecies, varieties, and even selected subpopulations of both flora and fauna.
56. (c) It is the national aquatic animal of India. Other common names: Ganges river dolphin, blind dolphin, Ganges dolphin, Ganges susu, Gangetic dolphin, Hihu, Side-swimming dolphin, South Asian River Dolphin, Indus River Dolphin. It is a fresh water dolphin found in the river system of Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh. Categorised under IUCN (International Union for Conservation of Nature) status : Endangered. Lowest estimate for the total population is 1,200–1,800 dolphins.

- Threats to the Ganges River dolphin
  Water development projects
  Pollution loads/ Toxic element
  Deliberate Killing (Meat and oil)
  Mortality in Fishing net

57. (d) An algal bloom is a rapid increase in the population of algae in an aquatic system.



58. (a) Don Juan Pond situated in figid McMurdo valley in Antarctica. Its unique feature is it remains in liquid form and does not freeze. Saltiest water body on earth, 8th times brinier than The Dead Sea. Don Juan Pond was discovered in 1961, named after two helicopter pilots, Lt. Don Roe and Lt. John Hickey.
59. (c) India-based Neutrino Observatory (INO) is a particle physics research project under construction to primarily study atmospheric neutrinos in a 1,300 meters deep cave near Bodhi west hills reserved forest near pottipuram village in Theni district, Tamil Nadu.
60. (b) The Hydrocarbon Exploration Licensing Policy has the following provisions:

- Revenue-sharing contract: Sharing revenue with the government as soon as commercial production begins.
- Unified licensing policy: Exploration of all possible hydrocarbons in a block
- Open acreage licensing: Bidders can select the exploration blocks on its own without waiting for the formal bid round.
- Pricing and marketing freedom for new gas production from difficult terrains.

61. Ans**: a**

More than 71% of the earth is covered with water.

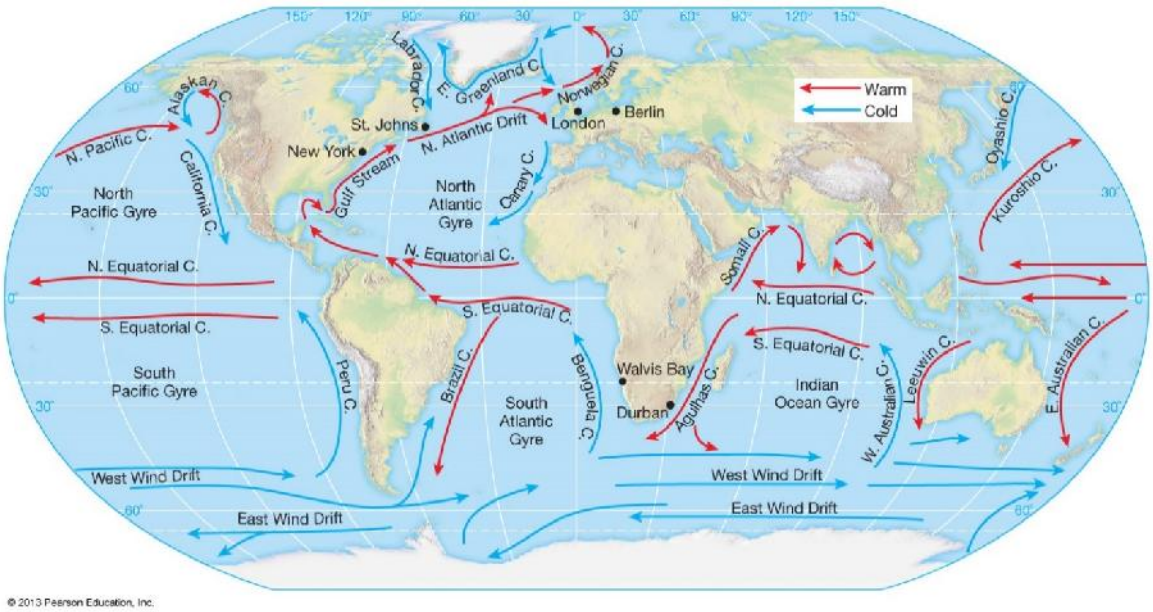
- Oceans : 97.3%,
- Ice caps & glaciers : 2%
- Ground Water : 0.68%
- Lakes : 0.009%
- Salt Lakes : 0.009%
- Atmosphere : 0.0019%
- Rivers : 0.0001%

62. Ans: b

Ocean currents are like river flow in oceans. They represent a regular volume of water in a definite path and direction. Ocean currents are influenced by two types of forces namely : (i) primary forces that initiate the movement of water; (ii) secondary forces that influence the currents to flow. Primary forces are heating by sun, wind, gravity and Coriolis force. Heating causes water to expand and reduce its density while cool water will have more density, to get more affected by gravity. Density is affected by salinity as well. Increase in salinity increases the density of water and vice-versa. Coriolis force is the result of earth's rotation

63. **Ans: b**

Currents move clockwise in northern hemisphere and anti-clockwise in the southern hemisphere. A **Drift** is narrow, shallow and fast while a **Stream** is wide, deep and slow. **Current** is the intermediary between drift and stream. North Atlantic drift, Gulf Stream and Humboldt Current respectively are examples. Surface currents are the ones we see to a depth of 400 meter from sea surface. They can be either cold current or warm current. Rest of the oceans, beyond 400 meter depth has density currents, driven by density and resultant gravity. All these oceanic circulations are together called as **Thermohalinecirculations.**



64. Ans: d

Due to the effect of Coriolis force, the combination of cold and warm currents move in clockwise and anticlockwise direction in the northern and southern hemispheres respectively. As a result, a large accumulation of water flows

around a relatively calm and still water. Such systems are called as Gyres. As the waters are not subjected to flow or mixing, it captures and accumulates substances in the centre. Sargasso Sea in North Atlantic is the result of North Atlantic Gyre, where it has trapped a weed which gave it the name. These gyres also accumulate oceanic solid pollutants and often causes menace

65. Ans: d

The release of sulphur and nitrogen by power plants, industrial effluents and agricultural activities are increasing ocean acidity. The carbon dioxide in the atmosphere in the atmosphere too interacts with ocean water to cause acidification.

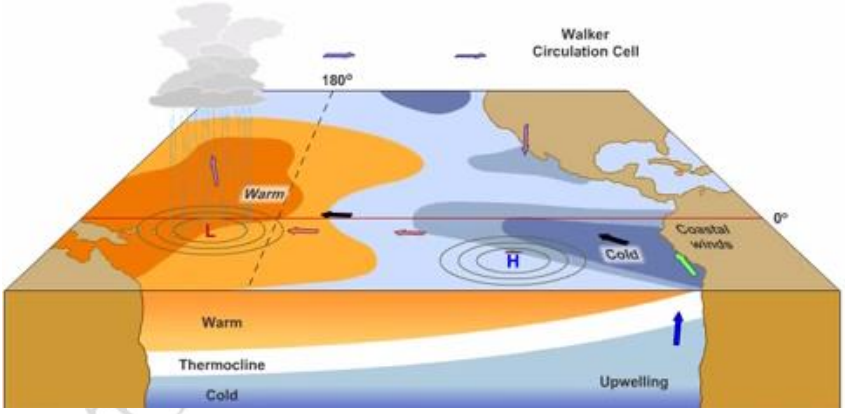
The increase in acidity affects the living organisms of oceans in general and the one with calcareous metabolism like sea urchins, shell fish and corals which harness calcium carbonate from ocean water for making exoskeletons will be seriously affected. It affects the larvae forms with soft body.

Ocean acidification may cause decreased cloud formation. Sulphuric acid seeds cloud formation, Majority of sulphur in the atmosphere is emitted by ocean, in the form of dimethylsulphide(DMS). Increase in acidity of oceans reduces the capacity of phytoplanktons to produce DMS, thereby reducing the rate of cloud formation

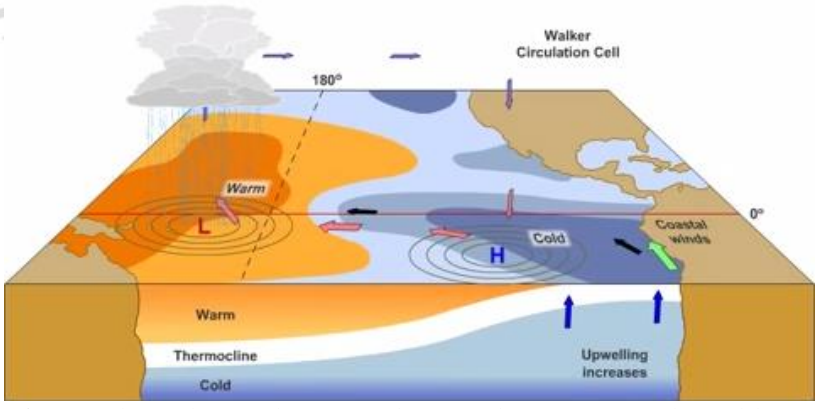
66. Ans: b

El-Nino is the replacement of cold Humboldt Current (Peruvian Current) in the south eastern Pacific Ocean, while La Nina is the intensification of cold current.

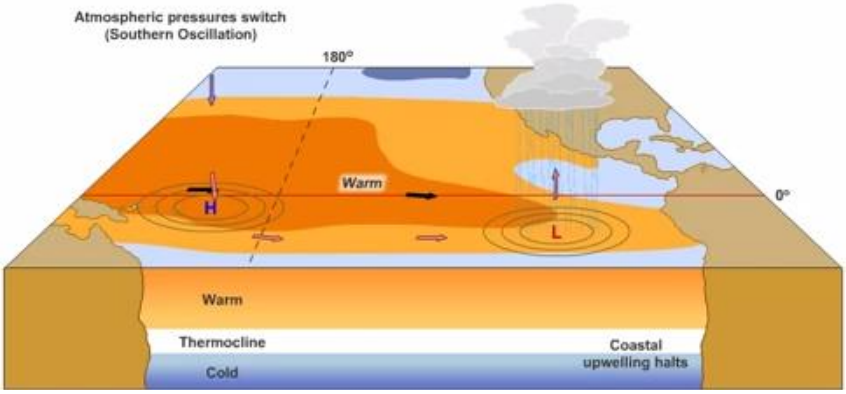
Normal situation: Cold Peruvian current moves along the south eastern shore of pacific. Along with the South East trade winds from the high pressure of the region, the warm surface water from the region will get accumulated in the south western Pacific. The removal of surface water results in the upwelling of cold water from below. The lower atmospheric wind is supported by the upper air movement from west to east, establishing the Walker Cell. This cause rain in the western pacific coast while dry situation in the eastern pacific coast. This has resulted in the formation of Atacama Desert in Peru.



La-Nina: It is the intensification of normal situation, where the Walker Cell intensifies resulting in the intense rain along western pacific coast. Upwelling will be also strong the eastern pacific coast



El-Nino: The reversal of normal conditions happens during El-Nino. Here the cold Peruvian current will get replaced with a hot current. This happens in conjunction with the weakening of South East trade winds and break down. As a result warm water accumulates in the Eastern coast of Pacific along with the west to east winds. The accumulation happens along Peruvian and Californian coasts. Upwelling will be absent unlike the normal situation. Warm water fuels rain in the Eastern Pacific coasts, causing floods in the region Eastern Pacific Coasts. The Eastern coast faces a reduced rainfall pattern due to El Nino condition



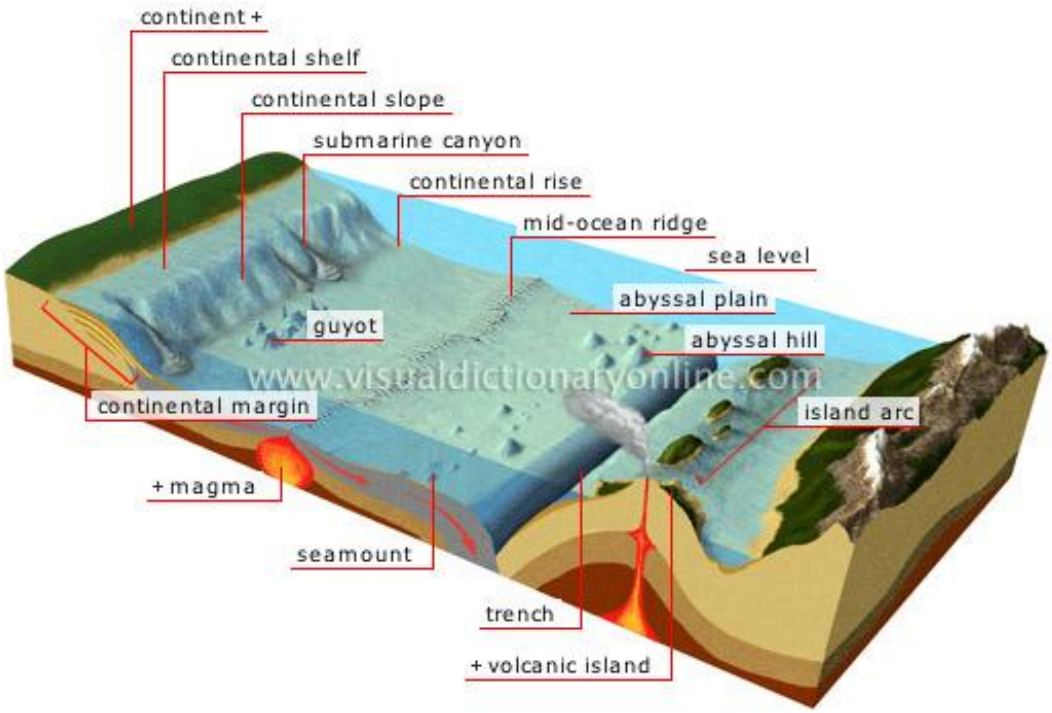
67. Ans: c

Continental Shelf: It is the extended margin of each continent occupied by shallow seas and gulfs. It is the shallowest part of the oceans with an average gradient of 1° or even less. Its width varies from ocean to ocean and its average width is 80kms. This region has major fishing grounds as the region has rich phytoplankton and zooplankton which supports fish growth. The continental shelves are covered with variable thicknesses of sediments brought down by rivers, glaciers, wind, from the land and distributed by waves and currents. It has very little oceanic deposits as well. Massive sedimentary deposits received over a long time become the source of fossil fuel.

Continental Slope: Continental slope connects the continental shelf and the ocean basins. Shelf break is the point from where continental slope begins after shelf. It begins where the bottom of the continental shelf sharply drops off into a steep slope. The gradient of the slope region varies between 2-5°. The depth of the slope region varies between 200 and 3,000 m. The slope boundary indicates the end of the continents. Canyons and trenches are observed in this region. Major portion of it is terrigenous deposits

Continental Rise: It is formed by the accumulation of sediments falling from slope, at the foot of the slope. It has less gradient than slope.

Abyssal Plain: It is the deep sea plain covered with fine grained sediments like clay and silt. Major part of it is composed of oceanic deposits. These are the flattest and smoothest regions of the world. This plain comprises other features of the ocean floor, namely deeps, mounts, mid oceanic ridges, guyots, islands etc



68. Ans: a

Coral reefs are diverse underwater ecosystems held together by calcium carbonate structures secreted by corals. These corals are the Polyp forms of Cnidaria. Coral reefs are called the rainforests of the sea due to the high levels of diversity they possess. They rely on Zooxanthelae symbiotically for the production of food. Zooxanthallae

produces upto 90% of the food needed for corals while corals provide a platform for the Zooxanthallae to stay. They get nutrients carbon dioxide and an elevated position with access to sunshine in return from corals. They are the ones that provide colour for corals. Due to unfavourable conditions like rise in water level, increase in temperature, increase in ocean acidity, invasive species attacks, the Zooxanthallae dies out causing the whitening of reefs. This phenomena is called Coral Bleaching. The corals starve and continue living after the bleaching and dies if the bleaching persists for long, as they cannot sustain for long with insufficient food they produce by themselves.

Although corals exist both in temperate and tropical waters, shallow-water reefs form only in a zone extending from approximately 30° N to 30° S of the equator. Tropical corals do not grow at depths of over 50 meters. The optimum temperature for most coral reefs is 26–27 °C, and few reefs exist in waters below 18 °C. However, reefs in the Persian Gulf have adapted to temperatures of 13 °C in winter and 38 °C in summer.

69. Ans: b

Informative and self-explanatory

70. Ans: c

Informative and self-explanatory

71. Ans: a

Indian Ocean experiences a reversal of ocean currents with respect seasons. During summer, in tune with the South West Monsoon winds, the current will be in the clockwise direction. During winter, the wind flowing in North Easterly direction and the current will be flowing in the anti-clockwise direction.

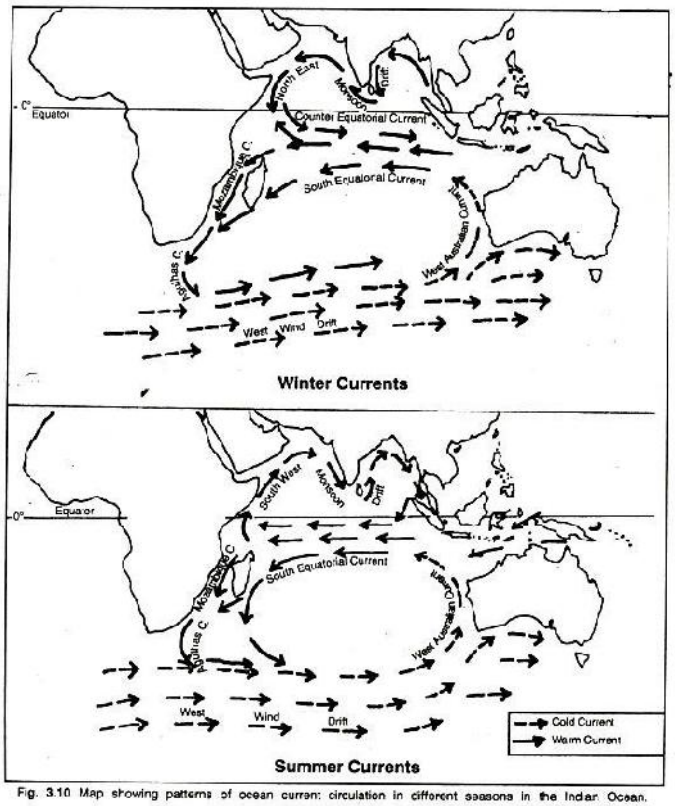


Fig. 3.10 Map showing patterns of ocean curren: circulation in different seasons in the Indian Ocean.

72. Ans: b

Tides are the rise and fall of sea levels caused by the combined effects of the gravitational forces exerted by the Moon and the Sun and the rotation of Earth. The attraction results in the rise in the level of water, eventually storing potential energy due to gravity.

73. Ans: a

When the tide is channelled between islands or into bays and estuaries they are called tidal currents

74. Ans: d

The United Nations Convention on the Law of the Sea (UNCLOS), also called the Law of the Sea Convention or the Law of the Sea treaty, is the international agreement that resulted from the third United Nations Conference on the Law of the Sea (UNCLOS III), which took place between 1973 and 1982. The Law of the Sea Convention defines the rights and responsibilities of nations with respect to their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. The Convention, concluded in 1982, replaced four 1958 treaties. UNCLOS came into force in 1994. 167 countries and the European Union have joined in the Convention.

The convention set the limit of various areas, measured from a carefully defined baseline. (Normally, a sea baseline follows the low-water line, but when the coastline is deeply indented, has fringing islands or is highly unstable, straight baselines may be used.) The areas are as follows

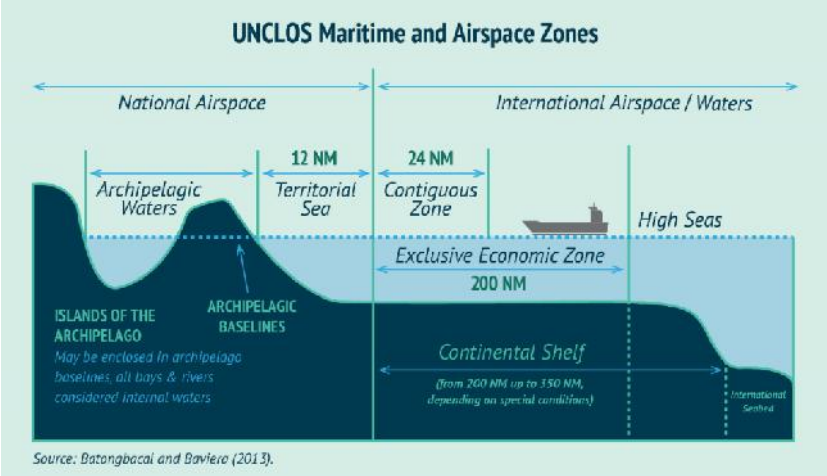
Internal waters: Covers all water and waterways on the landward side of the baseline. The coastal state is free to set laws, regulate use, and use any resource. Foreign vessels have no right of passage within internal waters

Territorial waters: Out to 12 nautical miles (22 kilometres) from the baseline, the coastal state is free to set laws, regulate use, and use any resource. Vessels were given the right of innocent passage through, with strategic straits allowing the passage of military craft as transit passage, in that naval vessels are allowed to maintain postures that would be illegal in territorial waters. Fishing, polluting, weapons practice, and spying are not "innocent", and submarines and other underwater vehicles are required to navigate on the surface and to show their flag. Nations can also temporarily suspend innocent passage in specific areas

Archipelagic waters: A baseline is drawn between the outermost points of the outermost islands, subject to these points being sufficiently close to one another. All waters inside this baseline are designated Archipelagic Waters. The state has sovereignty over these waters (like internal waters), but subject to existing rights including traditional fishing rights of immediately adjacent states. Foreign vessels have right of innocent passage through archipelagic waters (like territorial waters).

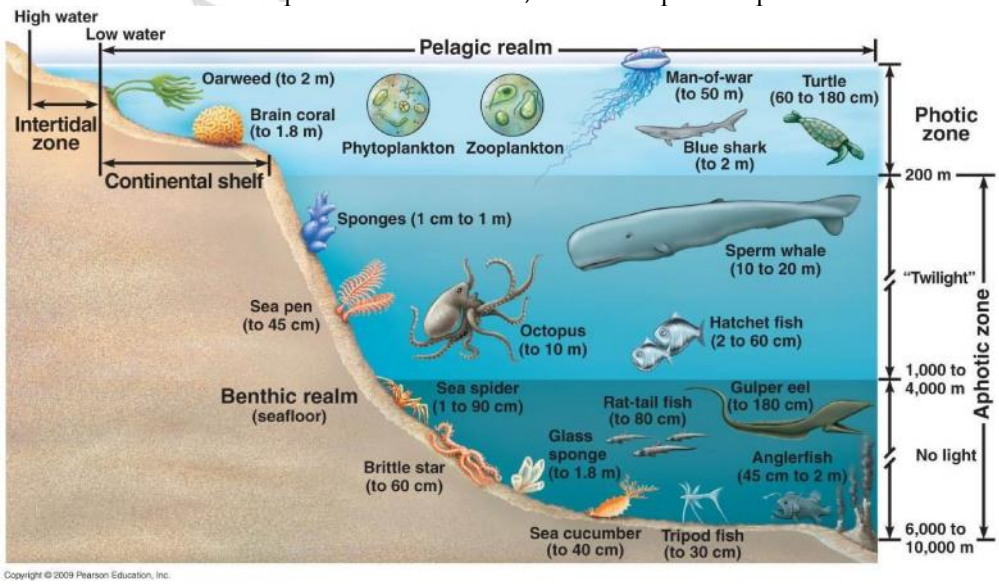
Contiguous zone: Beyond the 12-nautical-mile (22 km) limit, there is a further 12 nautical miles (22 km) from the territorial sea baseline limit, the contiguous zone, in which a state can continue to enforce laws in four specific areas: customs, taxation, immigration and pollution. This makes the contiguous zone a hot pursuit area.

Exclusive economic zones (EEZs): These extend 200 nautical miles (370 kilometres) from the baseline. Within this area, the coastal nation has sole exploitation rights over all natural resources. Foreign nations have the freedom of navigation and overflight, subject to the regulation of the coastal states. Foreign states may also lay submarine pipes and cables.



75. Ans: b

Plants are limited to the photic zone of ocean, which is upto a depth of 200meters from sea surface



76. Ans: a

The Nicaraguan Canal, formally the Nicaraguan Canal and Development Project (also referred to as the Nicaragua Grand Canal, or the Grand Interoceanic Canal) is a planned shipping route through Nicaragua to connect the Caribbean Sea (and therefore the Atlantic Ocean) with the Pacific Ocean. Construction of a canal using the San Juan River as an access route to Lake Nicaragua from Pacific and opening up the lake to Caribbean Sea is the present proposal.

77. Ans: c

Mediterranean Sea touches Europe, Asia and Africa continents

78. **Ans: c**

Large fishing grounds of the world are situated in the temperate regions were cold and warm currents meet, thereby enabling thorough mixing of nutrients. The supply of nutrients will enable the growth of Phytoplanktons and Zooplanktons, which supplies food for fishes. Eg: Japan is a large fishing area where the currents Oyashio and Kuroshio meet. Grand Banks of N. America too have Labrador Current meeting Gulf Stream.

Extensive continental shelf is a prerequisite for the development of fishing grounds as they provide sufficient photic zone, supporting planktons

Zone of upwelling, like Peruvian coast too has rich fish resource, owing to the supply of nutrients from below. Only 0.1 percent of the earth's oceans consist of upwelling systems, yet they contribute roughly 50 percent of the world's fish catch

Temperature should be preferably of temperate range for extensive commercial fishing operation as fishes in the tropical regions are diverse, there by makes commercial production of singe species fishes tough

79. **Ans; d**

Self-explanatory

80. **Ans: b**

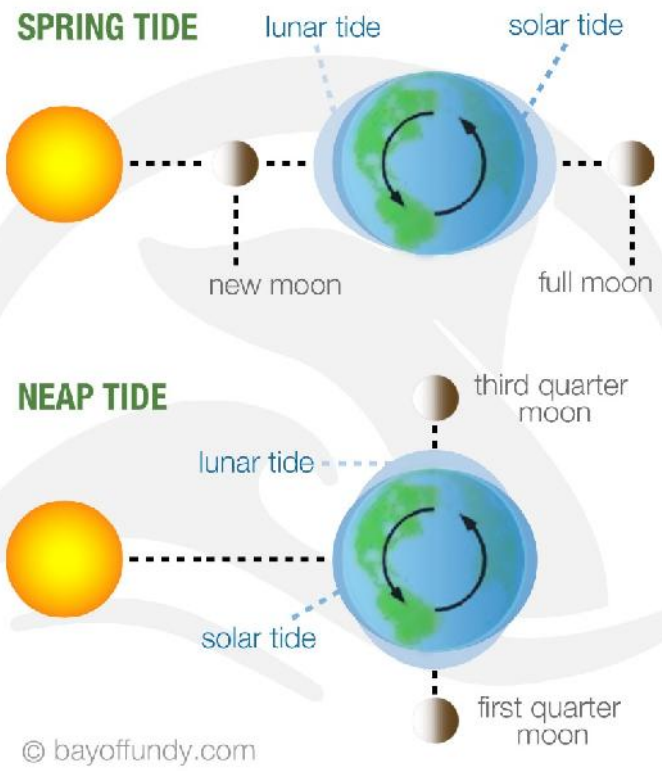
The height of rising water (high tide) varies appreciably depending upon the position of sun and moon with respect to the earth. Spring tides and neap tides come under this category.

Spring tides: The position of both the sun and the moon in relation to the earth has direct bearing on tide height. When the sun, the moon and the earth are in a straight line, the height of the tide will be higher. These are called spring tides and they occur twice a month, one on full moon period and another during new moon period.

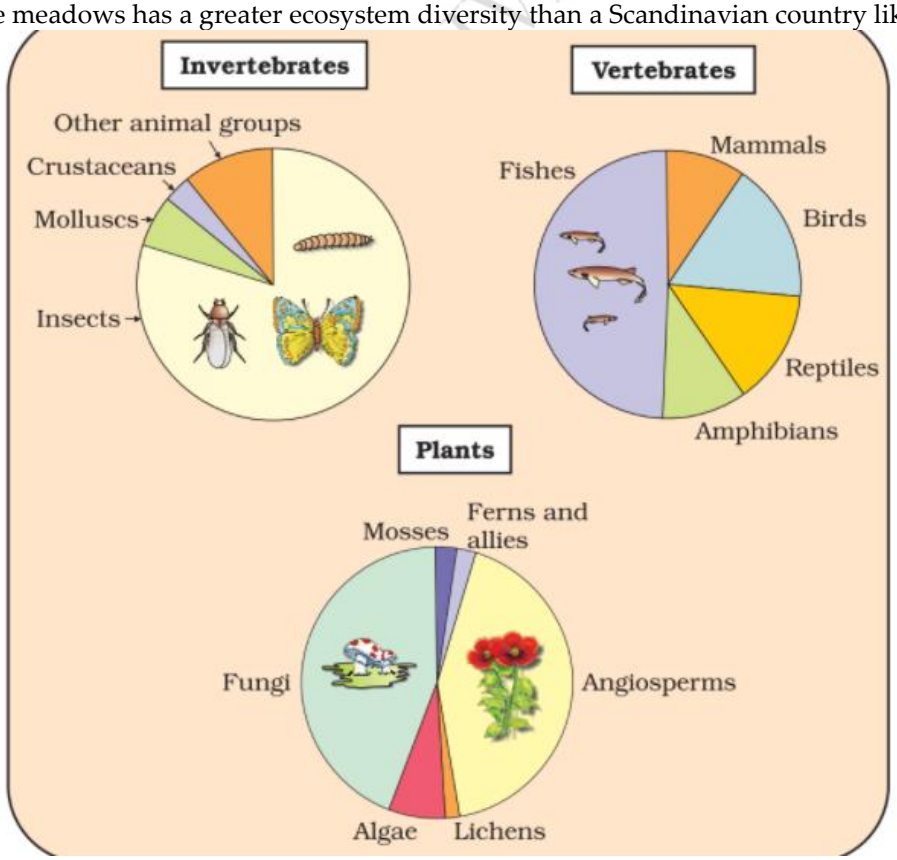
Neap tides: Normally, there is a seven day interval between the spring tides and neap tides. At this time the sun and moon are at right angles to each other and the forces of the sun and moon tend to counteract one another. The Moon's attraction, though more than twice as strong as the sun's, is diminished by the counteracting force of the sun's gravitational pull.

Once in a month, when the moon's orbit is closest to the earth (perigee), unusually high and low tides occur. During this time the tidal range is greater than normal. Two weeks later, when the moon is farthest from earth (apogee), the moon's gravitational force is limited and the tidal ranges are less than their average heights. When the earth is closest to the sun (perihelion), around 3rd January each year, tidal ranges are also much greater, with unusually high and unusually low tides. When the earth is farthest from the sun (aphelion), around 4th July each year, tidal ranges are much less than average.

The time between the high tide and low tide, when the water level is falling, is called the **ebb**. The time between the low tide and high tide, when the tide is rising, is called the **flow or flood.**



81. D. statement 1 is genetic diversity and 2 is species diversity. (i) Genetic diversity: A single species might show high diversity at the genetic level over its distributional range. The genetic variation shown by the medicinal plant Rauwolfiavomitoria growing in different Himalayan ranges might be in terms of the potency and concentration of the active chemical (reserpine) that the plant produces. India has more than 50,000 genetically different strains of rice, and 1,000 varieties of mango.(ii) Species diversity: The diversity at the species level. For example,the Western Ghats have a greater amphibian species diversity than the Eastern Ghats. (iii) Ecological diversity: At the ecosystem level, India, for instance, with its deserts, rain forests, mangroves, coral reefs, wetlands, estuaries, and alpine meadows has a greater ecosystem diversity than a Scandinavian country like Norway.



82. A .

83. C . (a) Speciation is generally a function of time, unlike temperate regions subjected to frequent glaciations in the past, tropical latitudes have remained relatively undisturbed for millions of years and thus, had a long

evolutionary time for species diversification, (b) Tropical environments, unlike temperate ones, are less seasonal, relatively more constant and predictable. Such constant environments promote niche specialisation and lead to a greater species diversity and (c) There is more solar energy available in the tropics, which contributes to higher productivity; this in turn might contribute indirectly to greater diversity.\

84. B .all the three leads to biodiversity destruction.
85. A. definition
86. D , all except 3 are responsible; 3 reduces pollution.
87. A. Kawal-Telengana; Sanjay-Dubri in MP- Chattisgarh border; spread over both ;
88. D. All the three have Rhino population; 1 in WB; 2 in UP; 3 in Assam.

> **Populations** [edit]
>
> In 2006, the total population was estimated to be 2,575 individuals, of which 2,200 lived in Indian protected areas:[22]
>
> - in Kaziranga National Park: 1,855 — increased from 366 in 1966; 2,048 rhinos were estimated in 2009.[23]
> - in Jaldapara National Park: 108 — increased from 84 in 2002
> - in Pobitora Wildlife Sanctuary: 81 — increased from 54 in 1987
> - in Orang National Park: 68 — increased from 35 in 1972
> - in Gorumara: 27 — increased from 22 in 2002
> - in Dudhwa National Park: 21
> - in Manas National Park: 19
> - in Katarniaghat Wildlife Sanctuary: 2

89. C , all the three cause ozone depletion; The ozone layer can be depleted by free radical catalysts, including nitric oxide (NO), nitrous oxide (N_2O), hydroxyl (OH), atomic chlorine (Cl), and atomic bromine (Br)
90. B, definition: **Biochemical oxygen demand** (**BOD**, also called **biological oxygen demand**) is the amount of dissolved oxygen needed (i.e., demanded) by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period.
91. A, **Red tide** is a common name for a phenomenon known as an algal bloom (large concentrations of aquatic microorganisms) when it is caused by a few species of dinoflagellates and the bloom takes on a red or brown color. Red tides are events in which estuarine, marine, or fresh water algae accumulate rapidly in the water column, resulting in coloration of the surface water. It is usually found in coastal areas.
92. C, Assam only; Rest have shared areas.
93. D , absence of lichens indicate high pollution level; Ground level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight
94. B, PT-1973; PE-1993; PSL-2009;
95. A, **Bioaccumulation** refers to the build-up of a toxic chemical in the body of a living organism. **biomagnification**, is when a toxic chemical increases in amount each time it moves up a food chain.Eutrophication is the natural aging of a lake by biological enrichment of its water. In a young lake the water is cold and clear, supporting little life. With time, streams draining into the lake introduce nutrients such as nitrogen and phosphorus, which encourage the growth of aquatic organisms. As the lake's fertility increases, plant and animal life burgeons, and organic remains begin to be deposited on the lake bottom. Over the centuries, as silt and organic debris pile up, the lake grows shallower and warmer, with warm-water organisms supplanting those that thrive in a cold environment. Marsh plants take root in the shallows and begin to fill in the original lake basin. Eventually, the lake gives way to large masses of floating plants (bog), finally converting into land.
96. C,

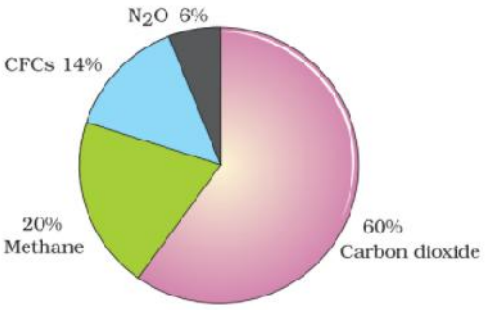


Figure 16.7 Relative contribution of various greenhouse gases to total global warming

97. C, There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. The AQI will consider eight pollutants (PM_{10}, $PM_{2.5}$, NO_2, SO_2, CO, O_3, NH_3, and Pb) for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed.
98. A, similar qn was asked in UPSC 2017
99. C, **Global warming potential** (GWP) is a relative measure of how much heat a greenhouse gas traps in the atmosphere. It compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide.
100. A, passes through 1 only,