

UPSC 2011

1. The "dharma" and "rita" depict a central idea of ancient Vedic civilization of India. In this context, consider the following statements:

- 1) Dharma was a conception of obligations and of the discharge of one's duties to oneself and to others.
- 2) Rita was the fundamental moral law governing the functioning of the universe and all it contained.

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

Answer: C

Solution: Rita points to regulation order by nature which cannot be agreed or limited by any legislation or any man made law and belongs to behavior of Vedic Gods and Humans in terms of moral and physical law. Rita later on changed by Dharma which appears as sophisticated form of principles of law. Dharma is imagined as fundamental moral norm grounded on fundamental nature of humans which prescribes duties and obligation for maintaining justice, order and righteousness in universe, so we see that both statements 1 and 2 are correct, hence correct option is c.

2. What is "Virtual Private Network"?

- A. It is a private computer network of an organization where the remote users can transmit encrypted information through the server of the organization
- B. It is a computer network across a public internet that provides users access to their organization's network while maintaining the security of the information transmitted
- C. It is a computer network in which users can access a shared pool of computing resources through a service provider
- D. None of the statements (A), (B) and (C) given above is a correct description of Virtual Private Network

Answer: B

Solution: VPN is a virtual private network which is an extension of private network that includes links among shared or public networks, so

option a is correct. For data flow in point-to-point link, data is wrapped with header having routing information which allows traversing of shared or public transit internet network to reach its endpoint. It allows users to work at home or on road in a secured manner to remote corporate server with the help of routing infrastructure given by public internet network. VPNs allow employees to securely access their company's intranet while traveling outside the office, so both statements 1 and 2 are correct.

3. A state in India has the following characteristics:

- 1) Its northern part is arid and semi-arid.
- 2) Its central part produces cotton.
- 3) Cultivation of cash crops is predominant over food crops.

Which one of the following states has all of the above characteristics?

- A. Andhra Pradesh
- B. Gujarat
- C. Karnataka
- D. Tamil Nadu

Answer: B

Solution: Among the following states, Gujarat's northern part is arid and semi-arid which produces cotton apart from Maharashtra and Andhra Pradesh.

4. The Brahmaputra, Irrawady and Mekong rivers originate in Tibet and flow through narrow and parallel mountain ranges in their upper reaches. Of these rivers, Brahmaputra makes a "U" turn in its course to flow into India. This "U" turn is due to

- A. Uplift of folded Himalayan series
- B. Syntaxial bending of geologically young Himalayas
- C. Geo-tectonic disturbance in the tertiary folded mountain chains
- D. Both (A) and (B) above

Answer: D

Solution: During early years, Tethys sea flows that further moves away during early Eocene that was noticed by closeness of Indian and Asian plates. Such marine deterioration continued till final appearance of Himalaya around Tethys sea came into picture. Both plates after colliding slow down the speed of northerly drift of Indian Plate and changes drift

direction. With this, Indian Plate rotate and forms syntaxial bends at northeastern and northwestern extremities of Himalayas.

5. Consider the following statements:

- 1) Biodiversity is normally greater in the lower latitudes as compared to the higher latitudes.
- 2) Along the mountain gradients, biodiversity is normally greater in the lower altitudes as compared to the higher altitudes.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 and 2

Answer: C

Solution: We see that Bio Diversity will flourish where there will be favourable climatic conditions such as high temperature and humidity. Mostly biodiversity will be more at poles than at the tropics so places at low latitudes will have many species as compared to places located at high latitudes. On the other hand, there will be decrease in species diversity from lower to higher altitudes on mountain due to variance in temperature and seasonal variability. This explanation makes both statements 1 and 2 correct, so best option is c.

6. The jet aircrafts fly very easily and smoothly in the lower stratosphere. What could be the appropriate explanation?

- 1) There are no clouds or water vapour in the lower stratosphere.
- 2) There are no vertical winds in the lower stratosphere.

Which of the statements given above is/are correct in this context?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. neither 1 nor 2

Answer: B

Solution: We see that from the surface of the earth upto altitude of 10 - 20 Km, temperature decreases with increase in altitude which is known as troposphere. This happens because the Sun rays will able to penetrate

from the atmosphere rather than heating the surface from below. Now above this belt is stratosphere, where temperature increases with increase in height which extends upto 45Km. In this belt, the airflow is less turbulent as there will be no up/down movement of air, so there will be no interruption for Jet planes, hence option b is correct.

7. What could be the main reasons for the formation of African and Eurasian desert belt?

- 1) It is located in the sub-tropical high pressure cells.
- 2) It is under the influence of warm ocean currents.

Which of the statements given above is/are correct in this context?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. neither 1 nor 2

Answer: A

Solution: African and Eurasian desert belt lies in vicinity of cold currents having desiccating effect on air, so with this we see that statement 2 is incorrect. Normally it is seen that deserts are mostly located around 20-30° north and south of Equator along Tropics of Cancer and Capricorn. The hot air at equator rises and spreads north and south before cooling which further gets condensed and tends to release moisture over tropical zones creating equatorial zone of low atmospheric pressure. Two tropical zones are at high pressure close to the poles which are 2 low cooler pressure belts. When denser air sinks to 2 subtropical high pressure belts, it creates a wind which is hot without moisture that normally appears from Sahara, hence statement 1 is correct, so the best option is a.

8. The lower Gangetic plain is characterised by humid climate with high temperature throughout the year. Which one among the following pairs of crops is most suitable for this region?

- A. Paddy and cotton
- B. Wheat and Jute
- C. Paddy and Jute
- D. Wheat and cotton

Answer: C

Solution: It is known that the lower deltaic plains of Ganges and Brahmaputra are characterised by swamps and sundarbans where people can easily grow Paddy and Jute crops as both these crops are water intensive and both needs the temperature above 25°C, so with this explanation option c is correct.

9. Regarding the Indus Valley Civilization, consider the following statements:

- 1) It was predominantly a secular civilization and the religious element, though present, did not dominate the scene.
- 2) During this period, cotton was used for manufacturing textiles in India.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. neither 1 nor 2

Answer: C

Solution: During the period of Indus Valley Civilization, people worshipped trees and other sacred animals which were completely material without any differentiation as per their birth, hence statement 1 is correct. In such period, Mehrgarh cotton which was the earliest cotton used as form for production of textiles cloth, hence statement 2 is also correct, so the best option is c.

10. Regular intake of fresh fruits and vegetables is recommended in the diet since they are a good source of antioxidants. How do antioxidants help a person maintain health and promote longevity?

- A. They activate the enzymes necessary for vitamin synthesis in the body and help prevent vitamin deficiency
- B. They prevent excessive oxidation of carbohydrates, fats and proteins in the body and help avoid unnecessary wastage of energy
- C. They neutralize the free radicals produced in the body during metabolism
- D. They activate certain genes in the cells of the body and help delay the ageing process

Answer: C

Solution: Antioxidants are important disease fighting compounds which cleanse our system from harmful free reactive ions by way of chemical reaction.

11. Between India and East Asia, the navigation time and distance can be greatly reduced by which of the following?

- 1) Deepening the Malacca straits between Malaysia and Indonesia.
- 2) Opening a new canal across the Kra isthmus between the Gulf of Siam and Andaman Sea.

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

Answer: C

Solution: It is seen that Malacca Strait appears as mainly and singly navigation channel which covers more than 1/3 of cargo movement, hence by deepening its channel will lower the repair and waiting period of heavy liners, hence statement 1 is correct. By opening new canal in Kra Insthums will also lower the navigation time and distance, hence statement 2 is also correct.

12. Westerlies in southern hemisphere are stronger and persistent than in northern hemisphere. Why?

- 1) Southern hemisphere has less landmass as compared to northern hemisphere.
- 2) Coriolis force is higher in southern hemisphere as compared to northern hemisphere.

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

Answer: A

Solution: Westerlies are normally stronger in areas where there is no land as land amplifies flow pattern by making the wind current to move more north south.

It plays an important role in bringing warm, equatorial waters and winds to western coasts particularly in southern hemisphere due to its huge oceanic stretch. It is strongest in Southern Hemisphere because of the absence of varied heating rates which results because of no land masses, so only statement 1 is correct which makes option a correct.

13. The lowering of Bank Rate by the Reserve Bank of India leads to

- A. More liquidity in the market
- B. Less liquidity in the market
- C. No change in the liquidity in the market
- D. Mobilization of more deposits by commercial - banks

Answer: A

Solution: The Bank rate in India is determined by the Reserve Bank of India (RBI). It is the rate at which RBI makes loans to commercial banks with no collateral. The RBI also provides short term loans to its clients (keeping collateral) at what is called the repo rate.

14. Economic growth is usually coupled with

- A. Deflation
- B. Inflation
- C. Stagflation
- D. Hyperinflation

Answer: B

Solution: Economic growth is coupled with liquidity which results as mainly in inflation, hence option b is correct.

15. What is the difference between asteroids and comets?

- 1) Asteroids are small rocky planetoids, while comets are formed of frozen gases held together by rocky and metallic material.
 - 2) Asteroids are found mostly between the orbits of Jupiter and Mars, while comets are found mostly between Venus and Mercury.
 - 3) Comets show a perceptible glowing tail, while asteroids do not.
- Which of the statements given above is/ are correct?

- A. 1 and 2 only
- B. 1 and 3 only
- C. 3 only
- D. 1, 2 and 3

Answer: B

Solution: Asteroids are hot gases which are closer to Sun where ices remain as solid. Comets are extra planetary elements which appears from outside of solar system and remained farther from the Sun where ices will not melt. Basically asteroids and comets differs due to their composition as Asteroids are made from metals and rocky material, while comets are made of ice, dust and rocky material, so only statement 1 and 3 are correct.

16. Why is the Government of India disinvesting its equity in the Central Public Sector Enterprises (CPSEs)?

- 1) The Government intends to use the revenue earned from the disinvestment mainly to pay back the external debt.
- 2) The Government no longer intends to retain the management control of the CPSEs.

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

Answer: D

Solution: With regards to Disinvestment Policy of the Government, it is clearly stated in the statement that during disinvestment, the Government will keep major shareholding which will be around 51% while 75% of annual income of National Investment Fund will be used for financing particular social sector schemes for the purpose of education, health and employment. This explain leads to conclusion that both statements 1 and 2 are incorrect, hence correct answer is d.

17. Which of the following can aid in furthering the Government's objective of inclusive growth?

- 1) Promoting Self-Help Groups
- 2) Promoting Micro, Small and Medium Enterprises

3) Implementing the Right to Education Act

Select the correct answer using the codes given below:

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: D

Solution: Government objective behind the inclusive growth is to promote Self-Help Groups, Micro, Small and Medium Enterprises and will implement Right to Education Act, so this makes option d correct.

18. In India, which of the following have the highest share in the disbursement of credit to agriculture and allied activities?

- A. Commercial Banks
- B. Cooperative Banks
- C. Regional Rural Banks
- D. Microfinance Institutions

Answer: A

Solution: In India, among organized credit disbursement to agriculture, it is noticed that the commercial banks contributes to share of around 75% in comparison with cooperative sector and RRBs who contribute 15% and 10 % share in agriculture.

19. In the context of Indian economy, consider the following statements:

- 1) The growth rate of GDP has steadily increased in the last five years.
- 2) The growth rate in per capita income has steadily increased in the last five years.

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

Answer: D

Solution: It is noticed that the growth rate in GDP in India fluctuates many times which is also same in case of growth rate of per capita income. From the data issued by Planning Commission, the growth rate in GDP and growth rate of per capita income did not changed steadily, hence both statements 1 and 2 are incorrect, so correct option is d.

20. An artificial satellite orbiting around the Earth does not fall down. This is so because the attraction of Earth

- A. does not exist at such distance
- B. is neutralized by the attraction of the moon
- C. provides the necessary speed for its steady motion
- D. provides the necessary acceleration for its motion

Answer: D

Solution: Artificial satellite revolves round the earth with centripetal acceleration that happens due to gravitational attraction of earth due to which the satellite keeps on moving in a curved path, hence option d is correct.

21. Why is the offering of "teaser loans" by commercial banks a cause of economic concern?

- 1) The teaser loans are considered to be an aspect of sub-prime lending and banks may be exposed to the risk of defaulters in future.
- 2) In India, the teaser loans are mostly given to inexperienced entrepreneurs to set up manufacturing or export units.

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

Answer: A

Solution: Teaser loans are adjustable-rate mortgage loans having less rate of interest which can be issued to low-income home buyers by paying small down payments where principal amount along with minimum rate gets equally divided in number of months of loan. In this, when the payment years matures, then the rate of interest on loan also increases,

so because of such flexible criteria such loan attract customers, hence correct answer is (a).

22. The "Red Data Books" published by the International Union for Conservation of Nature and Natural Resources (IUCN) contain lists of

- 1) Endemic plant and animal species present in the biodiversity hotspots.
- 2) Threatened plant and animal species.
- 3) Protected sites for conservation of nature and natural resources in various countries.

Select the correct answer using the codes given below:

- A. 1 and 3
- B. 2 only
- C. 2 and 3
- D. 3 only

Answer: B

Solution: International Union for Conservation of Nature and Natural Resources Red List of Threatened Species is a complete record of global conservation category of biological species. In this the species are classified as per IUCN Red List into various groups as per decline rate, population size, area of geographic distribution, degree of population and distribution fragmentation.

23. Salinization occurs when the irrigation water accumulated in the soil evaporates, leaving behind salts and minerals. What are the effects of salinization on the irrigated land?

- A. It greatly increases the crop production
- B. It makes some soils impermeable
- C. It raises the water table
- D. It fills the air spaces in the soil with water

Answer: B

Solution: Salinisation is a process by which an increase the concentration of water soluble salts in the soil. Salinity affect plant growth where high salts concentration results in high osmotic potential which makes plant to use excess energy to absorb water.

24. The Jain philosophy holds that the world is created and maintained by

- A. Universal Law
- B. Universal Truth
- C. Universal Faith
- D. Universal Soul

Answer: A

Solution: Jainism has no faith on originator idol, so as per their policies, soul, matter, space, time and principles of motion always exist which constitutes universal natural laws, so option a is correct.

25. The 2004 Tsunami made people realize that mangroves can serve as a reliable safety hedge against coastal calamities. How do mangroves function as a safety hedge?

- A. The mangrove swamps separate the human settlements from the sea by a wide zone in which people neither live nor venture out
- B. The mangroves provide both food and medicines which people are in need of after any natural disaster
- C. The mangrove trees are tall with dense canopies and serve as an excellent shelter during a cyclone or tsunami
- D. The mangrove trees do not get uprooted by storms and tides because of their extensive roots.

Answer: D

Solution: Mangroves has dense root systems which helps in trapping of sediments to flow in rivers and off the land. Because of this, the stabilization appears among coastline which further helps in soil erosion from waves and storms. Apart from filtering sediments, such forests will save coral reefs and sea grass meadows from being smothered in sediment. Since these forests are place for fishes, crabs, shrimps and mollusk species, they formed an essential source of food for many coastal people. Another this is that, mangrove tree wood is resistant to rot and insects which can be used for construction and for medicines.

26. Regarding the International Monetary Fund, which one of the following statements is correct?

- A. It can grant loans to any country
- B. It can grant loans to only developed countries
- C. It grants loans to only member countries
- D. It can grant loans to the central bank of a country

Answer: C

Solution: The main responsibility of International Monetary Fund is to provide loans to member countries experiencing real or potential balance of payments problems, so option c is correct.

27. What is the difference between "vote- on-account" and "interim budget”?

- 1) The provision of a "vote-on- account" is used by a regular Government, while an "interim budget" is a provision used by a caretaker Government.
 - 2) A "vote-an-account" only deals with the expenditure in Government's budget, while an "interim budget" includes both expenditure and receipts.
- Which of the statements given above is/ are correct?

- A. 1 only
- B. 2 only
- C. Both land 2
- D. Neither 1 or 2

Answer: B

Solution: Vote-on account is a statement where government shows estimate of money required to complete particular expense which occur at first 3-4 months on election financial year till new government takes place in order to carried out the working. Interim Budget is government budget that goes through transition period which is very popular in democracies where single political party is voted out and another political party is voted in office. This Budget is a temporary budget which helps spanning of transition time among two governments in order to continue functioning. Both vote-on-account and the interim budget are taken by caretaker government since these are improper for outgoing government to impose on successor changes which may or may not be acceptable to new government.

28. Consider the following statements:
In India, a Metropolitan Planning Committee

- 1) is constituted under the provisions of the Constitution of India.
- 2) prepares the draft development plans for metropolitan area.
- 3) has the sole responsibility for implementing Government sponsored schemes in the metropolitan area.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

Solution: In 74th Amendment Act of 1992 there results provision for constitution of Metropolitan Planning Committee in metropolitan areas whose purpose is to prepare Development Plan covering visualization and approach for incorporated and synchronized development of metropolitan area. As per Article 243ZE, Committee for Metropolitan Planning be constituted in all Metropolitan area to draft the development plan for Metropolitan area where the State Legislature makes provision for composition of Metropolitan Planning Committees and way in which seats in Committees gets filled along with the representation of Government and State for carrying out functions related to planning and coordination. In such committee, the Chairperson will forward the development plan to Government of State, so this makes both statement 1 and 2 correct.

29. Which one of the following is not a site for in-situ method of conservation of flora?

- A. Biosphere Reserve
- B. Botanical Garden
- C. National Park
- D. Wildlife Sanctuary

Answer: B

Solution: In-situ conservation of species is an advanced way of conserving biodiversity which covers National Parks, Biosphere Reserves and Wildlife Sanctuary. The Ex-situ conservation is preservation of components of biological diversity which are outside natural habitats involving conservation of genetic resources along with wild and cultivated or species which includes Gene banks, vitro plant tissue and microbial culture collections, captive breeding of animals and artificial propagation

of plants, collection of living organisms for zoos, aquaria and botanical gardens.

30. Among the following States, which one has the most suitable climatic conditions for the cultivation of a large variety of orchids with minimum cost of production, and can develop an export oriented industry in this field?

- A. Andhra Pradesh
- B. Arunachal Pradesh
- C. Madhya Pradesh
- D. Uttar Pradesh

Answer: B

Solution: As seen, the cool climatic Orchids appears from colder mountain ranges where average temperature is colder in summer with day temperature of around 14 °C and 21 °C and the night temperature at 7 °C and 11 °C. It is seen that the medium climate Orchids results from similar conditions from lower altitude as compared to colder climate orchids. The warm climate Orchids appears in tropical and subtropical areas without much fluctuation in temperatures. From the above discussion we see that Arunachal Pradesh where 1250 varieties of orchids are available which will be the best suited place.

31. With reference to the period of Indian freedom struggle, which of the following was/were recommended by the Nehru report?

- 1) Complete Independence for India.
- 2) Joint electorates for reservation of seats for minorities.
- 3) Provision of fundamental rights for the people of India in the Constitution.

Select the correct answer using the codes given below:

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: B

Solution: With reference to the report of Indian freedom struggle, the recommendations made by Nehru was sougning for dominion status for India instead of complete independence.

32.A new optical disc format known as the Blu-ray Disc (BD) is becoming popular. In what way is it different from the traditional DVD?

- 1) DVD supports Standard Definition video while BD supports High Definition video.
 - 2) Compared to a DVD, the BD format has several times more storage capacity.
 - 3) Thickness of BD is 2.4 mm while that of DVD is 1.2 mm.
- Which of the statements given above is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: B

Solution: Blu-ray Disc which is 1.2 mm thick is much advanced next- generation optical disc format which can store high-definition video and high-density data and has huge capacity. Normal Digital Video Disk supports Standard Definition video. Blu-ray Disc has capacity to store information or data 5 times as compared to normal DVDs and can keep data upto 25GB on single layer disc while 50GB information on dual layer disc.

33. With reference to Indian freedom struggle, Usha Mehta is well-known for

- A. Running the secret Congress Radio in the wake of Quit India Movement
- B. Participating in the Second Round Table Conference
- C. Leading a contingent of Indian National Army
- D. Assisting in the formation of Interim Government under Pandit Jawaharlal Nehru

Answer: A

Solution: Usha Mehta was a renowned Gandhian and freedom fighter of India who works as Secret Congress Radio at the time of Quit India Movement of 1942.

34. Mahatma Gandhi said that some of his deepest convictions were reflected in a book titled, "Unto this Last" and the book transformed his life. What was the message from the book that transformed Mahatma Gandhi?

- A. Uplifting the oppressed and poor is the moral responsibility of an educated man
- B. The good of individual is contained in the good of all
- C. The life of celibacy and spiritual pursuit are essential for a noble life
- D. all the statements A., B. and C. are correct in this context

Answer: B

Solution: The book "Unto this Last", written by Mahatma Gandhi relates to some of his deepest convictions which narrates that good of individual is present in good of all and the work of the lawyer results similar as barber's as everybody has similar right of earning their livelihood from their work. Further his conviction is that the labourer is similar as tiller of soil and handicraftsman.

35. A married couple adopted a male child. A few years later, twin boys were born to them. The blood group of the couple is AB positive and O negative. The blood group of the three sons is A positive, B positive, and O positive. The blood group of the adopted son is

- A. O positive
- B. A positive
- C. B positive
- D. Cannot be determined on the basis of the given data

Answer: A

Solution: We see that in case of parents having blood groups AB and O irrespective of gender, then their natural children will mostly have blood group which can be A or B. From the question statement, out of three children, natural children will have blood groups A and B and their adopted child will carry blood group of O, so correct option is a.

36. Recently, "oilzapper" was in the news. What is it?

- A. It is an eco-friendly technology for the remediation of oily sludge and oil spills
- B. It is the latest technology developed for under-sea oil exploration
- C. It is a genetically engineered high biofuel-yielding maize variety
- D. It is the latest technology to control the accidentally caused flames from oil wells

Answer: A

Solution: TERI had developed a technology that feeds on hydrocarbon compounds which is there in crude oil and oily sludge which converts in harmless CO₂ and water, so such technology is known as Oilzapper.

37. What is the difference between a CFL and an LED lamp?

- 1) To produce light, a CFL uses mercury vapour and phosphor while an LED lamp uses semi-conductor material.
- 2) The average life span of a CFL is much longer than that of an LED lamp.
- 3) A CFL is less energy-efficient as compared to an LED lamp.

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

Answer: C

Solution: CFL works with mercury vapour that is not good for health and environment and has less working life of around 9,000 hours and uses 75% less energy as compared to normal bulbs whereas LED lamps works for 50,000 hours which are more energy efficient as they use 85% less energy as compared to normal bulb.

38. What was the purpose with which Sir William Wedderburn and W. S. Caine had set up the Indian Parliamentary Committee in 1893?

- A. To agitate for Indian political reforms in the House of Commons
- B. To campaign for the entry of Indians into the Imperial Judiciary
- C. To facilitate a discussion on India's Independence in the British Parliament
- D. To agitate for the entry of eminent Indians into the British Parliament

Answer: A

Solution: Option d is incorrect as there was no question of agitating for entry of eminent Indians in British Parliament. Option c is not relevant as even Indian leaders were demanding independence at that time. Option a is correct as Indian political reform deemed in favour where Congress demands same thing in British parliament/ house of commons

39. Aspartame is an artificial sweetener sold in the market. It consists of amino acids and provides calories like other amino acids. Yet, it is used as a low-calorie sweetening agent in food items. What is the basis of this use?

- A. Aspartame is as sweet as table sugar, but unlike table sugar, it is not readily oxidized in human body due to lack of requisite enzymes
- B. When aspartame is used in food processing, the sweet taste remains, but it becomes resistant to oxidation
- C. Aspartame is as sweet as sugar, but after ingestion into the body, it is converted into metabolites that yield no calories
- D. Aspartame is several times sweeter than table sugar, hence food items made with small quantities of aspartame yield fewer calories on oxidation

Answer: D

Solution: Aspartame which is a type of artificial sweetener that is 250 times sweeter as compared to sucrose which produces 4 Kcal of energy in a gram which on metabolized, needs to produce sweet taste where caloric contribution is least.

40. Biodiversity forms the basis for human existence in the following ways:

- 1) Soil formation
- 2) Prevention of soil erosion
- 3) Recycling of waste
- 4) Pollination of crops

Select the correct answer using the codes given below:

- A. 1, 2 and 3 only
- B. 2, 3 and 4 only
- C. 1 and 4 only
- D. 1, 2, 3 and 4

Answer: D

Solution: Biodiversity is important as it helps in formation of soil and prevent soil erosion. It helps in recycling the waste materials and results in pollination of crops, so option d is correct.

41. What was the reason for Mahatma Gandhi to organize a satyagraha on behalf of the peasants of Kheda?

- 1) The Administration did not suspend the land revenue collection in spite of a drought.
- 2) The Administration proposed to introduce Permanent Settlement in Gujarat.

Which of the statements given above is/ are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 or 2

Answer: A

Solution: Kheda peasant struggle in Gujarat was a satyagraha started in March 1919 under leadership of Gandhiji, Sardar Vallabhbhai Patel, Indulal Yajnik, N.M. Joshi, Shankerlal Pareekh etc where British government insisted farmers to pay full taxes along with 23% hike every year which results in cause of dissention among peasants who finally lead the Satyagraha.

42. With reference to the period of colonial rule in India, "Home Charges" formed an important part of drain of wealth from India. Which of the following funds constituted "Home Charges"?

- 1) Funds used to support the India Office in London.
- 2) Funds used to pay salaries and pensions of British personnel engaged in India.
- 3) Funds used for waging wars outside India by the British.

Select the correct answer using the codes given below:

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: D

Solution: Indian Tribute found to be at variance with humanity which results in true wisdom for future payment like Home Charges from tribute of Indian Exchequer. Such charges results as dividends on East India Stock where salaries of officers and setting of pay to retired members of Indian Military and Civil Services be paid along with British troops serving in India. Further it covers:

- Costs of Secretary of State's India Office,
- East India Company's military adventures,
- Cost of suppressing Mutiny of 1857
- Compensation to company's share holders

43. With reference to micro-irrigation, which of the following statements is/are correct?

- 1) Fertilizer/nutrient loss can be reduced.
- 2) It is the only means of irrigation in dry land farming.
- 3) In some areas of farming, receding of ground water table can be checked.

Select the correct answer using the codes given below:

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: C

Solution: Micro irrigation is an irrigation method which conserves water and fertilizer by allowing water to drip slowly to roots, either onto soil surface or directly to root zone by network of valves, pipes, tubing and emitters. With Micro irrigation:

- Fertilizer and nutrient loss is minimized with local application.
- Water application efficiency is high
- Field levelling is not required
- Irregular shaped fields are easily accommodated.
- Recycled non-potable water can be safely used.
- Moisture in root zone can be maintained at field capacity.
- Type of Soil plays less important role in frequency of irrigation.

- Soil erosion and Weed growth are lowered.

Statement 1 is correct as Micro irrigation helps in checking loss of nutrients. Statement 2 is incorrect as micro irrigation is not the only means of irrigation in dry land farming. Statement 3 is correct as Micro irrigation will able to check depletion of ground water to some extent.

44. What is the difference between Bluetooth and Wi-Fi devices?

- A. Bluetooth uses 2.4GHz radio frequency band, whereas Wi-Fi can use 2.4 GHz or 5 GHz frequency band
- B. Bluetooth is used for Wireless Local Area Networks (WLAN) only, whereas Wi-Fi is used for Wireless Wide Area Networks (WWAN) only
- C. When information is transmitted between two devices using Bluetooth technology, the devices have to be in the line of sight of each other, but when Wi-Fi technology is used the devices need not be in the line of sight of each other
- D. The statements (a) and B. given above are correct in this context

Answer: A

Solution: Option (a) is correct as Bluetooth uses 2.4GHz radio frequency band while Wi-Fi use 2.4 GHz or 5 GHz frequency band. Option

B. is incorrect as Wi-Fi is used for Wireless Local Area Networks and Wireless Wide Area Networks. Option C. is incorrect as in low power, Bluetooth doesn't require line of sight among communicating devices and won't stop with wall in between the connection.

45. India maintained its early cultural contacts and trade links with Southeast Asia across the Bay of Bengal. For this pre-eminence of early maritime history of Bay of Bengal, which of the following could be the most convincing explanation/explanations?

- A. As compared to other countries, India had a better ship-building technology in ancient and medieval times
- B. The rulers of southern India always patronized traders, brahmin priests and buddhist monks in this context
- C. Monsoon winds across the Bay of Bengal facilitated sea voyages
- D. Both (a) and B. are convincing explanations in this context

Answer : C

Solution: Option (a) is incorrect as India's ship-building technology was not the only in world. The early discovery of monsoon winds by Hippalus in AD 45–47 lead to mariners of east coast of India for maritime trade from India to Southeast Asia because of monsoon wind and currents which favours mariners for onward and return voyages to Southeast Asia, so option C. is more convincing.

46. Which amongst the following provided a common factor for tribal insurrection in India in the 19th century?

- A. Introduction of a new system of land revenue and taxation of tribal products
- B. Influence of foreign religious missionaries in tribal areas
- C. Rise of a large number of money lenders, traders and revenue farmers as middlemen in tribal areas
- D. The complete disruption of the old agrarian order of the tribal communities

Answer: D

Solution: The above options lead to cause of dissention among tribals where Britisher restricted access to forest products that forms basis of livelihood by way of food and fuel along with land for agriculture. Options (a), B. and C. together combined to complete disruption of tribal living order which makes option d more realistic.

47.

Which one of the following observations is **not true** about the Quit India Movement of 1942?

- A. It was a non-violent movement
- B. It was led by Mahatma Gandhi
- C. It was a spontaneous movement
- D. It did not attract the labour class in general

Answer: D

Solution: On August 8, 1942, the Quit India Resolution was passed at the Bombay session of the All India Congress Committee and here Gandhi made a call to participate people in the non-violent way. It's worth note that the communists had opposed this movement and it virtually

damaged the labor movement. Labour Unions under the Communist influence had apparently decided against participation in the movement, there were large-scale strikes in mills at Kanpur, Jamshedpur, and Ahmedabad. **There was an indifference of the Labour Class, so the statement D is correct.**

48. The tendency for increased litigation was visible after the introduction of the land settlement system of Lord Cornwallis in 1793. The reason for this is normally traced to which of the following provisions?

- A. Making Zamindar's position stronger vis-a-vis the ryot
- B. Making East India Company an overlord of Zamindars
- C. Making judicial system more efficient
- D. None of the (a), B. and C. above

Answer: C

Solution: Land settlement system of Lord Cornwallis was carried with great changes in judicial institutions of Presidency where collector of revenue will act as judge and magistrate. He separated financial from judicial functions and restrict collector for fiscal duties under Board of Revenue at Presidency. The reforms of Cornwallis increases litigation because the Court Fee was removed and everybody could drag anybody to courts. Further the extension to right of appeal lead to inhuman punishments which were abolished and the zamindars need to face sunset law where nonpayment of revenue lead to confiscated of land.

49. La Nina is suspected to have caused recent floods in Australia. How is La Nina different from El Nino?

- 1) La Nina is characterized by unusually cold ocean temperature in equatorial Indian Ocean whereas El Nino is characterized by unusually warm ocean temperature in the equatorial Pacific Ocean.
- 2) El Nino has adverse effect on south-west monsoon of India, but La Nina has no effect on monsoon climate.

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

Answer: D

Solution: It is studied that El Niño and La Niña, both occur in equatorial Pacific Ocean where atmosphere above it change from neutral state for many seasons that appears as natural part of global climatic system. It is believed that El Niño events are linked with warming of central and eastern tropical Pacific, while La Niña events sustains cooling of areas. In case of La Niña years, trade winds are strong due to enhanced pressure gradient among eastern and western Pacific which enhanced upwelling along coast of South America. La Niña during summer season, Indian monsoon rainfall tends to appear greater as normal, in northwest India.

50. A sandy and saline area is the natural habitat of an Indian animal species. The animal has no predators in that area but its existence is threatened due to the destruction of its habitat. Which one of the following could be that animal?

- A. Indian wild buffalo
- B. Indian wild ass
- C. Indian wild boar
- D. Indian gazelle.

Answer: B

Solution: Among the following, Indian Wild Ass inhabits in remote parts of Rann of Kutch which is around 259,000 hectare of salt plain along Indian/Pakistan border. In such areas the threats to Indian wild ass's will include habitat degradation, invasion of Prosopis juliflora shrub and grazing by Maldhari. The Ass was never a hunting target of Indian Maharajas and colonial British officials of British Raj. Area in Kutch, is drought prone due to erratic monsoons where wild ass population declines due to massive die-off.

51. The surface of a lake is frozen in severe winter, but the water at its bottom is still liquid. What is the reason?

- A. Ice is a bad conductor of heat
- B. Since the surface of the lake is at the same temperature as the air, no heat is lost
- C. The density of water is maximum at 4 °C
- D. None of the statements (a), B. and C. given above is correct.

Solution : During winters in cold countries, the outside temperature is very low which drops below freezing point where upper layers of water in

lakes start cooling. When temperature of surface layers falls to 4 °C, the water body gets maximum density and sinks which displaces water below with lower water to start rising up which gets cooled to 4 °C and sinks down again. Further we see that ice which forms in cold weather acts as an insulating barrier which prevents water underneath from getting colder

. So Frozen lake surface acts as insulator which prevents heat from water from escaping and keeps heats of water trapped.

52. Recently, the USA decided to support India's membership in multi-lateral export control regimes called the "Australia Group" and the "Wassenaar Arrangement". What is the difference between them?

1) The Australia Group is an informal arrangement which aims to allow exporting countries to minimize the risk of assisting chemical and biological weapons proliferation, whereas the Wassenaar Arrangement is a formal group under the OECD holding identical objectives.

2) The Australia Group comprises predominantly of Asian, African and North American countries, whereas the member countries of Wassenaar Arrangement are predominantly from the European Union and American continents.

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

Answer: D

Solution: Australian Group having 15 members concerns with Biological and Chemical weapons while Wassenaar Arrangement having 41 members relates to regional and international security and stability, by transparency and responsibility of conventional arms with goods and technologies.

53. Consider the following:

- 1) Photosynthesis
- 2) Respiration
- 3) Decay of organic matter
- 4) Volcanic action

Which of the above add carbon dioxide to the carbon cycle on Earth?

- A. 1 and 4 only
- B. 2 and 3 only

- C. 2, 3 and 4 only
- D. 1, 2, 3 and 4

Answer: C

Solution: Photosynthesis is a process used by plants to convert light energy from Sun into chemical energy which can be used as energy for organisms. Such energy is stored in carbohydrate molecules which are synthesized from carbon dioxide and water. In photosynthesis, carbon dioxide is removed from air to make plant food from carbon, thus statement 1 removes instead of adding carbon dioxide.

54. There is a concern over the increase in harmful algal blooms in the seawaters of India. What could be the causative factors for this phenomenon?

- 1) Discharge of nutrients from the estuaries.
- 2) Run-off from the land during the monsoon.
- 3) Upwelling in the seas.

Select the Correct answer from the codes given below:

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: D

Solution : Algal bloom appears due to increase or accumulation in population of algae in water system which occurs mostly in freshwater and in marine environments. Algal blooms due to excess of nutrients, like phosphates originate from fertilizers and household cleaning products which enters the watersheds through water runoff. With excess carbon and nitrogen, residual sodium carbonate acts as catalyst for algae to bloom by dissolving carbon dioxide for enhanced photo synthesis with nutrients. Due to phosphates in water systems, increase growth of algae and plants causes decay which consumes dissolved oxygen in water, resulting in hypoxic conditions. Further it is noticed that Upwelling, formation of mud banks, nutrient discharges from estuaries and run-off from the land during southwest and northeast monsoons cause some algae blooms in coastal waters.

55. Consider the following:

- 1) Right to education.
- 2) Right to equal access to public service.
- 3) Right to food.

Which of the above is/are Human Right/Rights under “Universal Declaration of Human Rights”?

- A. 1 only
- B. 1 and 2 only
- C. 3 only
- D. 1, 2 and 3

Answer: D

Solution: Universal Declaration of Human Rights adopted by United Nations General Assembly on 10 December 1948 from the outcome of Second World War which shows first global expression of rights which all human beings are inherently entitled. It comprise of 30 articles. In 1966, General Assembly takes two detailed Covenants which complete International Bill of Human Rights, where as in 1976, the Bill took on the force of international law. Among 30 Articles, following 3 Articles suggest that:

Article 21: Suggest right of equal access to public service in his country. Article 25: Right to standard of living adequate for health and well-being of himself and family, including food, clothing, housing and medical care and right to security in event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

Article 26: Right to education with elementary, fundamental technical and professional levels for all on the basis of merit.

56. With reference to the Finance Commission of India, which of the following statements is correct?

- A. It encourages the inflow of foreign capital for infrastructure development
- B. It facilitates the proper distribution of finances among the Public Sector Undertakings
- C. It ensures transparency in financial administration
- D. None of the statements (a),B. and C. given above is correct in this context.

Answer: D

Solution: Finance Commission involves in distribution of total taxes among Centre and States as per respective contributions and determine factors governing Grants-in Aid to states and magnitude. Finance Commission along with State Finance Commissions introduced suggested measures to expand the Consolidated Fund of States for extra resources to Panchayats and Municipalities in respective state.

57. Under the Constitution of India, which one of the following is not a fundamental duty?

- A. To vote in public elections
- B. To develop the scientific temper
- C. To safeguard public property
- D. To abide by the Constitution and respect its ideals

Answer: A

Solution: Under Article 51 A of Constitution of India, following are the fundamental duties of every citizen of India:

- to abide by constitution and respect its ideal and institutions;
- to cherish and follow noble ideals which inspired our national struggle for freedom;
- to uphold and protect the sovereignty, unity and integrity of India;
- to defend country and render national service when required;
- to promote harmony and spirit of brotherhood among people of India with various religious, linguistic and regional diversities;
- to value and preserve heritage of culture;
- to protect and improve natural environment and to have compassion for living creatures;
- to develop scientific temper, humanism and spirit of inquiry and reform;
- to protect public property and to abjure violence;

58. When the annual Union Budget is not passed by the Lok Sabha,

- A. the Budget is modified and presented again
- B. the Budget is referred to the Rajya Sabha for suggestions
- C. the Union Finance Minister is asked to resign
- D. the Prime Minister submits the resignation of Council of Ministers

Answer: D

Solution : We see that Prime Minister and Council of Ministers together account for in Lok Sabha. In case of failure of Annual Budget, it is same as losing of confidence of Parliament for the government and under such scenario, Prime Minister will submit the resignation of Council of Ministers.

59. With reference to "Look East Policy" of India, consider the following statements:

- 1) India wants to establish itself as an important regional player in the East Asian affairs.
- 2) India wants to plug the vacuum created by the termination of Cold War.
- 3) India wants to restore the historical and cultural ties with its neighbours in Southeast and East Asia.

Which of the statements given above is / are correct?

- A. 1 only
- B. 1 and 3 only
- C. 3 only
- D. 1, 2 and 3

Answer: B

Solution: The Look East Policy of India stressed on copying close economic and commercial ties with increasing strategic cooperation within South East Asian countries. As of it, India seeks to create and expand regional markets for purpose of trade, investment and development along with military cooperation with nations concerning by expansion of China's economic and strategic influence.

60. Among the following, who are eligible to benefit from the "Mahatma Gandhi National Rural Employment Guarantee Act"?

- A. Adult members of only the scheduled caste and scheduled tribe households
- B. Adult members of below poverty line (BPL) households
- C. Adult members of households of all backward communities
- D. Adult members of any household

Answer: D

Solution: Mahatma Gandhi National Rural Employment Guarantee Act incorporated on August 25th 2005 which gives legal guarantee for 100 of

employment in an year to adult members of rural household for doing public work at statutory minimum wage.

61. A company marketing food products advertises that its items do not contain trans-fats. What does this campaign signify to the customers?

- 1) The food products are not made out of hydrogenated oils.
- 2) The food products are not made out of animal fats/ oils.
- 3) The oils used are not likely to damage the cardiovascular health of the consumers.

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

Answer: C

Solution: Trans-fats are un-natural compounds which are obtained when oil gets hydrogenated which affects cardiovascular health. But on the other hand, animal fats are good for health, so with this, only statements 1 and 3 are correct.

62. Southeast Asia has captivated the attention of global community' over space and time as a geostrategically significant region. Which among the following is the most convincing explanation for this global perspective?

- A. It was the hot theatre during the Second World War
- B. Its location between the Asian powers of China and India
- C. It was the arena of superpower confrontation during the Cold War period
- D. Its location between the Pacific and Indian oceans and its pre-eminent maritime character

Answer: D

Solution: Southeast Asia has fascinated attention of global community with space and time as geostrategically important region because of the fact that the location of Southeast Asia is between Pacific and Indian Ocean with good maritime possibilities.

63. Microfinance is the provision of financial services to people of low- income groups. This includes both the consumers and the self-employed. The service/ services rendered under micro-finance is/are:

- 1) Credit facilities
- 2) Savings facilities
- 3) Insurance facilities
- 4) Fund Transfer facilities

Select the correct answer using the codes given below the lists:

- A. 1 only
- B. 1 and 4 only
- C. 2 and 3 only
- D. 1, 2, 3 and 4

Answer: D

Solution: Microfinance results in financial services which take care about loans, savings accounts, fund transfers and insurance for nominal amounts. In case of non-financial services, microfinance helps people living in poverty which are not eligible for procuring banking services because of not having form of collateral or formal identification.

64. All revenues received by the Union Government by way of taxes and other receipts for the conduct of Government business are credited to the

- A. Contingency Fund of India
- B. Public Account
- C. Consolidated Fund of India
- D. Deposits and Advances Fund

Answer: C

Solution: Under Article 266, the revenues received by Union Government through taxes and receipts for doing Government business are credited to Consolidated Fund of India

65. The authorization for the withdrawal of funds from the Consolidated Fund of India must come from

- A. The President of India
- B. The Parliament of India
- C. The Prime Minister of India

D. The Union Finance Minister

Answer: B

Solution: Under Article 283 of Custody of Consolidated Fund, Contingency Funds is regulated by Parliament of India.

66. With what purpose is the Government of India promoting the concept of "Mega Food Parks"?

- 1) To provide good infrastructure facilities for the food processing industry.
- 2) To increase the processing of perishable items and reduce wastage.
- 3) To provide emerging and eco-friendly food processing technologies to entrepreneurs.

Select the correct answer using the codes given below:

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: D

Solution: Mega food park is flagship program of Ministry of Food Processing Industries that allows infrastructure or facilities and provides required backward linkages for entrepreneurs to set food processing units. With this, processing of perishables in country rises from 6% to 20% with more of value addition from 20% to 35%. It increases share of country in global food trade from 1.5% to 3% by end of fiscal year. This scheme provides infrastructure for farm level primary processing cold chain in identified clusters, processing of intermediate products, collection centre cum cold chains, centralized infrastructure to take care of processing activities etc.

67. India is home to lakhs of persons with disabilities. What are the benefits available to them under the law?

- 1) Free schooling till the age of 18 years in government-run schools.
- 2) Preferential allotment of land for setting up business.
- 3) Ramps in public buildings.

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

Answer: D

Solution: On 1st January, 1996, Government of India passed Persons with Disabilities Act 1995 which covers disability related to blindness, low vision, leprosy-cured, hearing impairment, loco-motor, mental retardation and mental illness among children below 18 yrs which explains that such children should receive free education through regular schooling along with grant and scholarships. The Disabilities Act 1995 also provides certain specific land for such disabilities for setting up business.

Statement 1 is correct as National Policy Statement for Persons with Disabilities ensures free schooling for children till 18 in government schools. Both statements 2 and 3 are correct as preferential allotment of land for setting up business and ramping in public buildings are covered under Disabilities Act 1995.

68. In India, if a religious sect/community is given the status of a national minority, what special advantages it is entitled to?

- 1) It can establish and administer exclusive educational institutions.
- 2) The President of India automatically nominates a representative of the community to Lok Sabha.
- 3) It can derive benefits from the Prime Minister's 15-Point Programme.

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

Answer: C

Solution: Statement 1 "It can establish and administer exclusive educational institutions" is correct as under Article 30(1) national minority can establish and administer exclusive educational institutions.

Statement 2 is incorrect as President appoints only two Anglo-Indians in Lok Sabha. Statement 3 is correct as national minority status allows group to be eligible for benefits under PMs 15 point programme.

69. The function of heavy water in a nuclear reactor is to

- A. Slow down the speed of neutrons
- B. Increase the speed of neutrons
- C. Cool down the reactor
- D. Stop the nuclear reaction

Answer: A

Solution: Heavy water in nuclear reactors will act as neutron moderator which slows down neutrons in order to react with fissile uranium-235 and uranium-238 for capturing neutrons. The neutron moderator reduces speed of fast neutrons and converts it in thermal neutrons which sustains nuclear chain reaction with uranium-235.

70. In the context of global oil prices "Brent crude oil" is frequently referred to in the news. What does this term imply?

- 1) It is a major source classification of crude oil.
- 2) It is sourced from North Sea
- 3) It does not contain sulphur.

Which of the statements given above is/are correct?

- A. 2 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: B

Solution: Brent Crude is a classification of sweet light crude oil serving as benchmark price for buying oil globally. It is extracted from North Sea having 0.37% of sulphur and serving as biggest classifications of crude oil with Brent Crude, Brent Sweet Light Crude, Oseberg, Ekofisk and Forties.

71. With reference to "Aam Admi Bima Yojana", consider the following statements:

- 1) the member insured under the scheme must be the head of the family or an earning member of the family in a rural landless household.
- 2) The Member insured must be in the age group of 30 to 65 years.
- 3) There is a provision for free scholarship for up to two children of the insured who are studying between classes 9 and 12.

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

Answer: C

Solution: AAM ADMI BIMA YOJANA, is a Premium Social Security Fund for rural landless household or head of family where single earning member is covered under such scheme for a premium amount of Rs.200/- annually shared by Central and State Government. The member for such scheme should be aged between 18 and 59 years. Under this fund scheme, an insurance for head of family is provided which covers benefit against natural and accidental death or with partial/permanent disability. In this, two children of beneficiaries studying in 9th to 12th class will get support of Rs.300/- for three months for single child.

72. A genetically engineered form of brinjal, known as the Bt-brinjal, has been developed. The objective of this is

- A. To make it pest-resistant
- B. To improve its taste and nutritive qualities
- C. To make it drought-resistant
- D. To make its shelf-life longer

Answer: A

Solution: Bt brinjal is a suite of transgenic brinjals formed by inserting crystal protein gene from soil bacterium *Bacillus thuringiensis* in genome of many brinjal cultivars like promoters, terminators and antibiotic resistance marker genes by *Agrobacterium*-mediated genetic transformation. It results in modification in genes of Brinjal with genetic engineering. Bt brinjal used to give resistance against lepidopteron insects, in particular the Brinjal Fruit and Shoot Borer.

73. Both Foreign Direct Investment (FDI) and Foreign Institutional Investor (FII) are related to investment in a country. Which one of the following statements best represents an important difference between the two?

- A. FII helps bring better management skills and technology, while FDI only brings in capital

- B. FII helps in increasing capital availability in general, while FDI only targets specific sectors.
- C. FDI flows only into the secondary market, while FII targets primary market
- D. FII is considered to be more stable than FDI

Answer: B

Solution: Foreign Direct Investment is investment which a parent company makes in foreign country while Foreign Institutional Investor is an investment made by investor in markets of foreign nation. Foreign Institutional Investor have liberty to sell and take money back, while Foreign Direct Investment will not. Foreign Institutional Investor can enter stock market easily while Foreign Direct Investment cannot enter and exit in stock market easily. It is noted that Foreign Direct Investment targets for particular enterprise for increasing enterprises capacity or productivity while Foreign Direct Investment translates capital inflow into extra production. Option A is incorrect as it changes the roles of FII with FDI. Option C is also incorrect as while FDI flows in primary market while FII flows in secondary market. Option D is incorrect as FDI is not considered as stable in comparison with FII, so only option B is correct since FII increases capital availability while FDI targets particular sectors.

74. A layer in the Earth's atmosphere called Ionosphere facilitates radio communication. Why?

- 1) The presence of ozone causes the reflection of radio waves to Earth.
- 2) Radio waves have a very long wavelength.

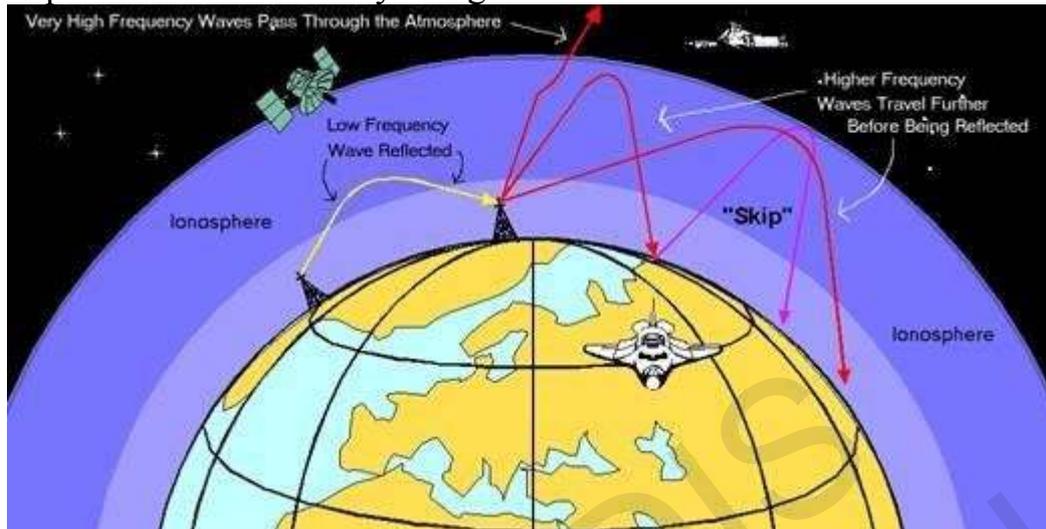
Which of the statements given above is/are correct?

- A. 1 Only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Answer: B

Solution: Ionosphere is a region of Earth's upper atmosphere which is 60 km to 600 km in altitude which is ionized by solar radiation. It is filled with high concentration of free electrons and gases. Waves with longer wavelength like Amplitude Modulated waves and Radio waves get reflected by ionosphere. Such region facilitates radio communication due

to presence of electrically charged ions.



75. Karl Marx explained the process of class struggle with the help of which one of the following theories?

- A. Empirical liberalism
- B. Existentialism
- C. Darwin's theory of evolution
- D. Dialectical materialism

Answer: D

Solution: Karl Marx explained process of class struggle using Dialectical materialism philosophy involving science and nature. Dialectical materialism is strand of Marxism synthesizing Hegel's dialectics and Ludwig Andreas Feuerbach's materialism. The basic theme of dialectical materialism relates to concept of evolution of natural world with emergence of new qualities at new stages of evolution.

76. With reference to India, consider the following Central Acts:

- 1) Import and Export (Control) Act, 1947
- 2) Mining and Mineral Development (Regulation) Act, 1957
- 3) Customs Act, 1962
- 4) Indian Forest Act, 1927

Which of the above Acts have relevance to/bearing on the biodiversity conservation in the country)

- A. 1 and 3 only
- B. 2, 3 and 4 only

- C. 1, 2, 3 and 4
- D. None of the above Acts

Answer: C

77. The Himalayan Range is very rich in species diversity. Which one among the following is the most appropriate reason for this Phenomenon?

- A. It has a high rainfall that supports luxuriant vegetative growth
- B. It is a confluence of different bio-geographical zones
- C. Exotic and invasive species have riot been introduced in this region
- D. It has less human interference

Answer: B

Solution: Himalayan Range is rich in species diversity due to presence of species of different biogeographic regions.

78. If a tropical rain forest is removed, it does not regenerate quickly as compared to a tropical deciduous forest. This is because

- A. the soil of rain forest is deficient in nutrients
- B. propagules of the trees in a rain forest have poor viability
- C. the rain forest species are slow- growing
- D. exotic species invade the fertile soil of rain forest

Answer: A

Solution: Due to poor soil quality , the growth of vegetation in tropical rainforest is good where minerals and neutrients gets vanished due to excess rains. Such type of rain forest soil are poor where nutrients are stored inside the plants. We see that the soil of tropical rainforests are leached and devoid of nutrients. When tree cover is removed, its regeneration is difficult which replaces forest by Savanna vegetation.

79. In the context of ecosystem productivity, marine upwelling zones are important as they increase the marine productivity by bringing the

- 1) Decomposer microorganisms to the surface
 - 2) Nutrients to the surface.
 - 3) bottom-dwelling organisms to the surface.
- Which of the statements given above is/are correct?

- A. 1 and 2
- B. 2 only
- C. 2 and 3
- D. 3 only

Answer: B

Solution: Upwelling appears due to blowing of winds along coastline which makes water at ocean surface to move away from coast and allow water from inside of ocean to rise up and take its place. Such rising water is cold and rich in nutrients because of dead sea creatures and such extra nutrients get taken away by plankton. Upwelling appears as part of El Niño events in Pacific Ocean off coast of Ecuador and Peru creating an impact on weather and changes the pattern of precipitation in certain areas.

80. Human activities in the recent past have caused the increased concentration of carbon dioxide in the atmosphere, but a lot of it does not remain in the lower atmosphere because of

- 1) Its escape into the outer stratosphere.
- 2) The photosynthesis by phytoplankton in the oceans.
- 3) The trapping of air in the polar ice caps

Which of the statements given above is/are correct?

- A. 1 and 2
- B. 2 only
- C. 2 and 3 only
- D. 3 only

Answer: B

Solution: Statement 2 is correct as carbon dioxide being heavier than air not much gets escaped to stratosphere. Further trapping of air in ice caps results in insignificant proportions of carbon dioxide.

81. Three of the following criteria have contributed to the recognition of western Ghats-Sri Lanka and Indo-Burma regions as hotspots of

biodiversity:

- 1) Species richness
- 2) Vegetation density
- 3) Endemism.
- 4) Ethno-botanical importance
- 5) Threat perception
- 6) Adaptation of flora and fauna to warm arid humid conditions

Which three of the above are correct criteria in this context?

- A. 1,2 and 6
- B. 2,4 and 6
- C. 1,3 and 5
- D. 3,4 and 6

Answer: C

Solution: For the purpose of hotspot, a region should follow criteria where there should be at least 1500 species of vascular plants serves as endemics and secondly the region have lost around 70% of original habitat, so with this option C is more suitable.

82. The "New START" treaty was in the news. What is this treaty?

- A. It is a bilateral strategic nuclear arms reduction treaty between the USA and the Russian Federation
 - B. It is a multilateral energy security cooperation treaty among the members of the East Asia Summit
 - C. It is a treaty between the Russian Federation and the European Union for the energy security cooperation
 - D. It is a multilateral cooperation treaty among the BRICS countries
- Species richness

Answer: A

Solution: New START refers to Strategic Arms Reduction Treaty which involves reduction of nuclear arms among United States and Russian Federation which can into existence on 5th February 2011.

83. When the bark of a tree is removed in a circular fashion all around near its base, it gradually dries up and dies because

- A. Water from soil cannot rise to aerial parts
- B. Roots are starved of energy
- C. Tree is infected by soil microbes
- D. Roots do not receive oxygen for respiration

Answer: B

Solution: Phloem is the innermost layer of the bark and its job is to do the transport of soluble

organic material made during photosynthesis (photosynthate), the process is called

translocation. So, whatever that is produced in the leaves, if not sent to the parts such

as roots, they will be starved of energy and)

Water will keep rising till we don't cut the tree's xylem parts.

84.A "closed economy" is an economy in which

- A. the money supply is fully controlled
- B. deficit financing takes place
- C. only exports take place
- D. neither exports nor imports take place

Answer: D

Solution: Closed economy is facilitates the consumer with all needs within the economic jurisdiction where there will be no imports and no exports with no business or trading relations with outside unit.

85. Which one of the following is not a feature of "Value Added Tax"?

- A. It is a multi-point destination-based system of taxation
- B. It is a tax levied on value addition at each stage of transaction in the production-distribution chain
- C. It is a tax on the final consumption of goods or services and must ultimately be borne by the consumer
- D. It is basically a subject of the Central Government and the State Governments are only a facilitator for its successful implementation

Answer: D

Solution: Value Added Tax is a multi-point destination system of taxation where tax is levied on value addition at all stages of transaction in production-distribution chain and is imposed on final consumption of goods or services which is paid by the consumer. As we see that Sales Tax and VAT is State subject where Central Government acts as a facilitator for proper implementation of VAT.

86. Regarding "carbon credits", which one of the following statements is not correct?

- A. The carbon credit system was ratified in conjunction with the Kyoto Protocol
- B. Carbon credits are awarded to countries or groups that have reduced greenhouse gases below their emission quota
- C. The goal of the carbon credit system is to limit the increase of carbon dioxide emission
- D. Carbon credits are traded at a price fixed from time to time by the United Nations Environment Programme.

Answer: D

Solution: Carbon credit is a financial instrument showing tonnes of carbon dioxide gas either removed or reduced from atmosphere by emission reduction project for offsetting damaged carbon emissions what are being generated. Carbon credits prices are not fixed by UNEP which originated by emission reduction activities under variety of voluntary and compliance market mechanisms, schemes and standards.

87. India is regarded as a country With "Demographic Dividend" This is due to

- A. Its high population in the age group below 15 years
- B. Its high population in the age group of 15-64 years
- C. Its high population in the age group above 65 years
- D. Its high total population

Answer: B

Solution: With the release of Census data, it is known that Demographic Dividend in Indian results from youth age group from 15-24 where youngest and oldest age groups begins to narrow. From the data it is clear that in India, the working age of population is from 15-64 years

where dependency ratio showing children (0-14) and elders (65-100) gets reduced to 0.55.

88. A rapid increase in the rate of inflation is sometimes attributed to the "base effect". What is "base effect"?

- A. It is the impact of drastic deficiency in supply due to failure of crops
- B. It is the impact of the - surge in demand due to rapid economic growth
- C. It is the impact of the price levels of previous year on the calculation of inflation rate
- D. None of the statements (a), B. and C. given above is correct in this context

Answer: C

Solution: Base effect highlights earlier data which affects current data where comparison among commodity prices can be studied. Monetary authorities like RBI takes into account the base effect while manipulating inflation to formulate optimal Monetary policy for base effect which exaggerate or attenuate effects.

89. Two important rivers - one with its source in Jharkhand (and known by a different name in Odisha), and another, with its source in Odisha - merge at a place only a short distance from the coast of Bay of Bengal before flowing into the sea. This is an important site of wildlife and biodiversity and a protected area. Which one of the following could be this?

- A. Bhitarkanika
- B. Chandipur-on-sea
- C. Gopalpur-on-sea
- D. Simlipal

Answer: A

Solution: Brahmani is a seasonal river in Odisha which is formed by confluence of Sankh and South Koel rivers where Sankh originates near Jharkhand-Chhatisgarh border and South Koel also from Jharkhand, near Lohardaga, which both rivers sourced from Chota Nagpur Plateau.

Bhitarkanika National Park and Mangrove Forest lies at confluence of rivers Brahmani and Baitarni.

90. The Constitution (Seventy-Third Amendment) Act, 1992, which aims at promoting the Panchayati Raj Institutions in the country, provides for which of the following?

- 1) Constitution of District Planning Committees.
- 2) State Election Commissions to conduct all panchayat elections.
- 3) Establishment of State Finance Commissions.

Select the correct answer using the codes given below:

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Answer: C

Solution: In 74th Amendment, the Constitution of District Planning Committees under Article 243ZD has been provided in 243 ZD under Constitution of India, which talked about State Election Commissions for conducting all panchayat elections and establishment of State Finance Commissions.

91. Consider the following actions which the Government can take:

- 1) Devaluing the domestic currency.
- 2) Reduction in the export subsidy.
- 3) Adopting suitable policies which attract greater FDI and more funds from FIIs.

Which of the above action/actions can help in reducing the current account deficit?

- A. 1 and 2
- B. 2 and 3
- C. 3 only
- D. 1 and 3

Answer: D

Solution: Government can reduce substantial current account deficit by increasing exports or by decreasing imports which can be through import restrictions, quotas, or duties or by subsidizing exports. Manipulating of exchange rate for cheaper exports tends to increase balance of payments through devaluing of domestic currency. Further current account deficit can be lowered by promoting investor friendly environment. In capital

account, capital inflows results from instruments and maturity which includes foreign investment, loans and banking capital.

92. The formation of ozone hole in the Antarctic region has been a cause of concern. What could be the reason for the formation of this hole?

- A. Presence of prominent tropospheric turbulence; and inflow of chlorofluorocarbons
- B. Presence of prominent polar front and stratospheric clouds; and inflow of chlorofluorocarbons
- C. Absence of polar front and stratospheric clouds; and inflow of methane and chlorofluorocarbons
- D. Increased temperature at polar region due to global warming.

Answer: B

Solution: Antarctic polar front creates harsh ozone depletion where nitric acid in polar stratospheric clouds reacts with chlorofluorocarbons forming chlorine that catalyzes photochemical destruction of ozone. Since Polar stratospheric clouds are medium on which reservoir chlorine compounds gets converted to ozone by killing chlorine radicals which can be applied for creating hole in ozone layer.

93. Which one of the following statements appropriately describes the "fiscal stimulus"?

- A. It is a massive investment by the Government in manufacturing sector to ensure the supply of goods to meet the demand surge caused by rapid economic growth.
- B. It is an intense affirmative action of the Government to boost economic activity in the country
- C. It is Government's intensive action on financial institutions to ensure disbursement of loans to agriculture and allied sectors to promote greater food production and contain food inflation
- D. It is an extreme affirmative action by the Government to pursue its policy of financial inclusion

Answer: B

Solution: Fiscal stimulus is a plan which involves in borrowing money and spending on economy by the country. With this, the government will

raise overall state of economy by raising output and lowering of unemployment, which makes only option B as correct.

94. Microbial fuel cells are considered a source of sustainable energy. Why?

- 1) They use living organisms as catalysts to generate electricity from certain substrates.
- 2) They use a variety of inorganic materials as substrates.
- 3) They can be installed in waste water treatment plants to cleanse water and produce electricity.

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

Answer: C

Solution: Microbial fuel cell is bio-electrochemical system that drives a current by using bacteria and taking away bacterial interactions from the nature. These devices consist of anode and cathode compartments separated by cation specific membrane which converts chemical energy into electrical energy through catalytic reaction of microorganisms, which makes statement 1 correct. The substrates used in such cells are organic in nature such as glucose, acetate, arabinol, carboxymethyl cellulose, corn stover biomass etc, which makes statement 2 incorrect. Statement 3 is correct as such cells are used in treatment of wastewater.

95. In terms of economy, the visit by foreign nationals to witness the XIX Commonwealth Games in India amounted to

- A. Exports
- B. Imports
- C. Production
- D. Consumption

Answer: A

Solution: Foreign nationals who visited India for XIX Commonwealth Games are the tourists from which India generates income based on tourism. The games are in category of sports tourism or for that matter

any kind of tourism results in export industry since visitors from outside India travelled to country by purchasing touristic experience of that country by paying from their country.

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

- 1) It is possible to know the pedigree of livestock.
- 2) It is possible to understand the causes of all human diseases.
- 3) It is possible to develop disease-resistant animal breeds.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

Solution: Human Genome Project, an international scientific research project involves in finding the sequence of chemical base pairs for human DNA which further mapped genes of human genome from physical and functional point. The project through its sequencing of DNA helps in understanding not only genetic diseases but also studies about many genes and genome sequence for fighting against such diseases.

97. India has experienced persistent and high food inflation in the recent past. What could be the reasons?

- 1) Due to a gradual switchover to the cultivation of commercial crops, the area under the cultivation of food grains has steadily decreased in the last five years by about 30%.
- 2) As a consequence of increasing incomes, the consumption patterns of the people have undergone a significant change.
- 3) The food supply chain has structural constraints

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: B

Solution: As per Reserve Bank of India, due to moderation, food price inflation remains persistently elevated for an year which affects the structural demand supply in many commodities. The causes of food inflation could be from higher food prices across the world, less growth in agricultural in respect to faster GDP growth, increase in demand of better quality food products, higher Inflation, inefficiency in Food Supply Chain.

98. Satellites used for telecommunication relay are kept in a geostationary orbit. A satellite is said to be in such an orbit when:

- 1) The orbit is geosynchronous.
- 2) The orbit is circular.
- 3) The orbit lies in the plane of the Earth's equator.
- 4) The orbit is at an altitude of 22,236 km

Select the correct answer using the codes given below:

- A. 1, 2 and 3 only
- B. 1, 3 and 4 only
- C. 2 and 4 Only
- D. 1, 2, 3 and 4

Answer: A

Solution: Geostationary orbit is geosynchronous orbit with circular and zero inclination which is directly above the equator at an altitude of 22,236 miles Knot which is 35,786 km. This geosynchronous orbit period of satellite is similar time period of sidereal rotation period of Earth. The Geostationary satellites appear to be stationary from earth but their angular velocity is same as that of earth.

99. Consider the following: -

- 1) Carbon dioxide
- 2) Oxides of Nitrogen
- 3) Oxides of Sulphur

Which of the above is/are the emission/emissions from coal combustion at thermal power plants?

- A. 1 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D

Solution: Coal power plants contribute mainly for atmospheric pollution and greenhouse gases which results in gaseous emissions of carbon dioxide, carbon monoxide leading to global warming and acid rain. These plants also result in particulate emissions from stacks of power plants. So with emission from coal combustion at thermal power plants particles such as fly ash, soot and other trace gas species occurs.

100. In the Union Budget 2011-12, a full exemption from the basic customs duty was extended to the biobased asphalt (Bioasphalt). What is the importance of this material?

- 1) Unlike traditional asphalt, bio-asphalt is not based on fossil fuels.
- 2) Bioasphalt can be made from non-renewable resources.
- 3) Bioasphalt can be made from organic waste materials.
- 4) It is eco-friendly to use Bioasphalt for surfacing of the roads. Which of the statements given above are correct?

- A. 1,2 and 3 only
- B. 1,3 and 4 only
- C. 2 and 4 only
- D. 1,2,3 and 4

Answer: B

Solution: Bioasphalt is an asphalt alternative made from renewable sources such as sugar, molasses, rice, corn and potato starch, natural tree and gum resins, natural latex rubber and vegetable oils, lignin, cellulose, palm oil waste, coconut waste, peanut oil waste, canola oil waste, dried sewerage effluent etc, so statement 2 is not valid. With the increase in oil price increases since 2003, so the peak oil, pollution and climate change and non-petroleum alternatives gained popularity which made to beginning of biobitumen alternatives which are environmentally friendly and nontoxic.