Solved Paper of CS Preliminary 2011 Paper I (General Study) Exam

1. In the Union Budget 2011-12, a full exemption from the basic customs duty was extended to the bio-based 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

Ans: b

Exp: Bioasphalt is an asphalt alternative made from non-petroleum based renewable resources. These sources includes sugar, molasses and rice, corn and potato starches, natural tree and gum resins, natural latex rubber and vegetable oils, lignin, cellulose, palm oil waste, coconut waste, peanut oil waste, canola oil waste, potato starch, dried sewerage effluent and so on. Bitumen can also be made from waste vacuum tower bottoms produced in the process of cleaning used motor oils, which are normally burned or dumped into land fills.
Non-petroleum based bitumen binders can be colored, which can reduce the temperatures of road surfaces and reduce the Urban heat islands.

2. 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

Ans:d

Emissions from coal usage:
The main emissions from coal combustion at thermal power plants are Carbon dioxide (CO2), Nitrogen oxides (NOx), Sulfur oxides (SOx), Chlorofluorocarbons (CFCs), carbonaceous material (soot), and air-borne inorganic particles such as fly ash, also known as suspended particulate matter (SPM) and other trace gas species. Carbon dioxide, nitrous oxide, and chlorofluorocarbons are greenhouse gases. Evidence accumulated by the Inter-governmental Panel on Climate Change (IPCC) suggests that emissions of these greenhouse gases might be responsible for climate change, a global concern. Possible consequences projected by IPCC include:
- a rise in sea levels
- a more vigorous hydrological cycle that may increase the severity of floods and droughts and may cause more extreme climatic events; and
- ecological change that could threaten agricultural productivity

3. 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
Ans: a

Exp: A geostationary orbit (or Geostationary Earth Orbit - GEO) is a geosynchronous orbit directly above the Earth's equator (0° latitude), with a period equal to the Earth's rotational period and an orbital eccentricity of approximately zero. An object in a geostationary orbit appears motionless, at a fixed position in the sky, to ground observers. Communications satellites and weather satellites are often given geostationary orbits, so that the satellite antennas that communicate with them do not have to move to track them, but can be pointed

permanently at the position in the sky where they stay. Due to the constant 0° latitude and circularity of geostationary orbits, satellites in GEO differ in location by longitude only.
A geostationary orbit can only be achieved at an altitude very close to 35,786 km (22,236 mi), and directly above the equator.

4. 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 consequnce 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

Ans: b

Exp: Agriculture Sector – Decadal Performance The growth rates in the production of key food-grains in India have declined with each passing decade. Average growth in foodgrain production was highest in 1950s and declined in subsequent decades. It briefly improved in the 1990s and reached its lowest in the subsequent decade, (Figure 1), when the growth rate in incomes was at its highest pace. Within foodgrains, rice and wheat both recorded average growth rates lower than 1%. Growth rate in pulses was higher in the 2000s decade but has not been enough to keep pace with the changing demand pattern of the Indian population. Another significant feature is the volatility in growth rates which has increased in 1990s and 2000s.

The trend is no different when we look at growth rates in key commercial crops (Figure 2) with sugarcane and coffee hardly registering any growth in the last decade. However the growth rate of oilseeds and cotton was higher in the 2000s which is a positive sign.
As average growth rates may not provide the right picture given the volatility, we also need to look at overall production levels (Figure 3). If we see the production numbers from 1990 onwards, we can see the sharp volatility as explained above. Barring a rise in last few years, overall production has stagnated and remains at production levels seen in 1990s. Consequently, with a growing economy and population, supply of foodgrains emerged as a constraint.

5. 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

Ans: c

Exp: Gene Targeting: Gene targeting strategies have been expanded to all kinds of modifications, including point mutations, isoform deletions, mutant allele correction, large pieces of chromosomal DNA insertion and deletion, tissue specific disruption combined with spatial and temporal regulation and so on. It is predicted that the ability to generate mouse models with predictable phenotypes will have a major impact on studies of all phases of development, immunology, neurobiology, oncology, physiology, metabolism, and human diseases. Gene targeting is also in theory applicable to species from which totipotent embryonic stem cells can be established, and therefore may offer a potential to the improvement of domestic animals and plants.

6. In terms of economy, the visit by foreign nationals to witness the XIX Common Wealth Games in India amounted to

(a) Exports
(b) Imports
(c) Production
(d) Consumption

Ans: a

Exp: The itmes purchased or consumed by the foreign nationals can be related to sale/export of such materials out of the country.

7. 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

Ans: c

Exp: Microbial Fuel Cells (MFCs) - a novel source of energy for new millennium:
Continued use of petroleum fuels is now widely recognized as unsustainable because of their depleting supplies and the contribution of these fuels to the accumulation of carbon dioxide in the environment. Renewable, carbon neutral, transport fuels are necessary for environmental and economic sustainability. A microbial fuel cell (MFC), a novel form of microbial respiration has recently been discovered, it is a bioreactor that converts chemical energy present in the organic compounds (in the form of chemical bonds) to electrical energy through catalytic reactions of microorganisms under anaerobic conditions. These organisms, termed electricigens, Microbial fuel cells (MFCs) provide new opportunities for the sustainable production of energy from biodegradable compounds. MFCs function on different carbohydrates and also on complex substrates present in wastewaters and renewable biomass. Biomass, especially organic waste, is being considered as a valuable candidate. The use of biomass, in the case of waste organics, is environment friendly and regarded as a renewable energy source.

8. 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 affirmati ve 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

Ans: b

Fiscal stimulus:
Government measures, normally involving increased public spending and lower taxation, aimed at giving a positive jolt to economic activity.

9. 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 tropo-spheric 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 golbal warming
Ans: b

Exp: As mid-May brings on the onset of winter, the Antarctic stratosphere cools and descends closer to the surface. The Coriolis effect (caused by the earths rotation) sets up a strong westerly circulation around the south pole, forming an oblong vortex which varies in size from year to year.

As temperatures in the lower stratosphere cools below -80'C, Polar Stratospheric Clouds (PSC's) start to form.

In the area over Antarctica, there are stratospheric cloud ice particles that are not present at warmer latitudes. Reactions occur on the surface of the ice particles that accelerate the ozone destruction caused by stratospheric chlorine.

10. Consider the following actions which the Governnient 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

Ans: b

Exp: In economics, the current account is one of the two primary components of the balance of payments, the other being the capital account. The current account is the sum of the balance of trade (exports minus imports of goods and services), net factor income (such as interest and dividends) and net transfer payments (such as foreign aid).

The current account balance is one of two major measures of the nature of a country's foreign trade (the other being the net capital outflow). A current account surplus increases a country's net foreign assets by the corresponding amount, and a current account deficit does the reverse. Both government and private payments are included in the calculation. It is called the current account because goods and services are generally consumed in the current period.

The balance of trade is the difference between a nation's exports of goods and services and its imports of goods and services, if all financial transfers, investments and other components are ignored. A Nation is said to have a trade deficit if it is importing more than it exports.

11. The Constitution (Seventy-Third Amend-ment) 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 ans 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

Ans: c

Exp: THE CONSTITUTION (SEVENTY-THIRD AMENDMENT) ACT, 1992

STATEMENT OF OBJECTS AND REASONS Though the Panchayati Raj Institutions have been in existence for a long time, it has been observed that these institutions have not been able to acquire the status and dignity of viable and responsive people's bodies due to a number of reasons including absence of regular elections, prolonged supersessions, insufficient representation of weaker sections like Scheduled Castes, Scheduled Tribes and women, inadequate devolution of powers and lack of financial resources.

2. Article 40 of the Constitution which enshrines one of the Directive Principles of State Policy lays down that the State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-

government. In the light of the experience in the last forty years and in view of the short-comings which have been observed, it is considered that there is an imperative need to enshrine in the Constitution certain basic and essential features of Panchayati Raj Institutions to impart certainty, continuity and strength to them.

3. Accordingly, it is proposed to add a new Part relating to Panchayats in the Constitution to provide for among other things, Gram Sabha in a village or group of villages; constitution of Panchayats at village and other level or levels; direct elections to all seats in Panchayats at the village and intermediate level, if any, and to the offices of Chairpersons of Panchayats at such levels; reservation of seats for the Scheduled Castes and Scheduled Tribes in proportion to their population for membership of Panchayats and office of Chairpersons in Panchayats at each level; reservation of not less than one-third of the seats for women; fixing tenure of 5 years for Panchayats and holding elections within a period of 6 months in the event of supersession of any Panchayat; disqualifications for membership of Panchayats; devolution by the State Legislature of powers and responsibilities upon the Panchayats with respect to the preparation of plans for economic developments and social justice and for the implementation of development schemes; sound finance of the Panchayats by securing authorisation from State Legislatures for grants-in-aid to the Panchayats from the Consolidated Fund of the State, as also assignment to, or appropriation by, the Panchayats of the revenues of designated taxes, duties, tolls and fees; setting up of a Finance Commission within one year of the proposed amendment and thereafter every 5 years to review the financial position of Panchayats; auditing of accounts of the Panchayats; powers of State Legislatures to make provisions with respect to elections to Panchayats under the superintendence, direction and control of the chief electoral officer of the State; application of the provisions of the said Part to Union territories; excluding certain States and areas from the application of the provisions of the said Part; continuance of existing laws and Panchayats until one year from the commencement of the proposed amendment and barring interference by courts in electoral matters relating to Panchayats.

12. 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
Ans: a

Exp: The Bhitarkanika Mangroves are a mangrove wetland in India's Orissa state. The Bhitarkanika Mangroves cover an area of 650 km² in the river delta of the Brahmani and Baitarani rivers.

The Brahmani is formed by the confluence of the rivers South Koel and Sankh near the major industrial town of Raurkela at 22 15'N and 84 47' E. The Sankh has its origins near the Jharkhand-Chhatisgarh border, not far from the Netarhat Plateau. Together with the rivers Mahanadi and Baitarani, it forms a large delta before entering into the Bay of Bengal at Dhamra.

The Baitarani River or River Vaitarani is one of six major rivers of Orissa.

13. 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

Ans: c

Exp: The base effect relates to inflation in the corresponding period of the previous year: if the inflation rate was two low in the corresponding period of the previous year, even a smaller rise in the Price Index will arithmatically give a high rate of inflation now; On the other hand if the price index had risen at a high rate in the corresponding period of the previous year and recorded high inflation rate, a similar absolute increase in the Price index now will show a lower inflation rate now.

14. 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

Ans: b

Exp: The demographic dividend is a rise in the rate of economic growth due to a rising share of working age people in a population. This usually occurs late in the demographic transition when the fertility rate falls and the youth dependency rate declines. During this demographic window

of opportunity, output per capita rises. It has been argued that the demographic dividend played a role in the "economic miracles" of the East Asian Tigers

Much has been said recently about India's demographic dividend: that its working-age (15-59 years) population, as of now, largely consists of youth (15-34 years), and as a result its economy has the potential to grow more quickly than that of many other countries, including China.

15. 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

Ans: d

Exp: Carbon credits are a tradable permit scheme. It is a simple, non-compulsory way to counteract the greenhouse gasses that contribute to climate change and global warming. Carbon credits create a market for reducing greenhouse emissions by giving a monetary value to the cost of polluting the air. The Carbon Credit is this new currency and each carbon credit represents one tonne of carbon dioxide either removed from the atmosphere or saved from being emitted. Carbon credits are also called emission permit. Carbon credit is in the Environment and Pollution Control subject. Carbon credits are certificates awarded to countries that are successful in reducing emissions of greenhouse gases. Carbon credits are generated as the result of an additional carbon project. Carbon credits can be created in many ways but there are two broad types:
1. Sequestration (capturing or retaining carbon dioxide from the atmosphere) such as afforestation and reforestation activities.
2. Carbon Dioxide Saving Projects such as use of renewable energies These credits need to be authentic, scientifically based and Verification is essential. Carbon credit trading is an innovative method of controlling emissions using the free market. Existence of carbon credits:
The concept of carbon credits came into existence as a result of increasing awareness of the need for pollution control.
Carbon credits were one of the outcomes of the Kyoto Protocol, an international agreement between 169 countries. The Kyoto Protocol created legally binding emission targets for developing nations. To meet these targets, nations must limit C02 emissions. It was enforced from Feb'05.

16. 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 Cental Government and the State Governments are only a facilitator for its successful implementation

Ans: d

Exp: Value Added Tax (VAT) is a multistage sales tax with credit for taxes paid on business purchases. As the economy grew, business complexities led to the taxation structure towards its own peril. This warranted a revision of the existing taxation. For achieving this, the government introduced a single rate of excise (CENVAT) as a major step and bought in a fundamental rationalization in the tax structure and levy. Features of VAT are:
1. Uniform schedule rates of VAT for all states. This would make the tax system simple and uniform and prevent unhealthy tax competition among states.
2. The provisions of input tax credit would help in prevent cascading effect tax.
3. The provisions of self assessment by dealers would reduce harassment small traders with turn over upto Rs 5 lakh would be exempt from the provisions of VAT.
4. The zero – rating of exports would increase the competitiveness of Indian exports.

Sales tax / VAT is basically a state subject, the central government is playing the role of facilitator for successful implementation of this significant reform measures.

Whether it be Sales Tax of Value Added Tax it increases the cost of the product bought by the consumers and as such it is ultimately be borne by the consumer .

17. 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

Ans: d

Exp: What Does Closed Economy Mean?
An economy in which no activity is conducted with outside economies. A closed economy is self-sufficient, meaning that no imports are brought in and no exports are sent out. The goal is to provide consumers with everything that they need from within the economy's borders.

A closed economy is the opposite of an open economy, in which a country will conduct trade with outside regions.

18. 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

Ans: b

Exp: Girdling, also called ring barking or ring-barking, is the complete removal of a strip of bark (consisting of secondary phloem tissue, cork cambium, and cork) from around the entire outer circumference of either a branch or the trunk of a woody plant. Girdling results in the death of wood tissues beyond the damage. A branch completely girdled will fail and when the main trunk of a woody plant is girdled, the entire plant will likely die, if it cannot regenerate itself from below.

After removing bark the phloem also removed. and then the glucose cant reach to roots. water move through xylem which is confined to middle of stem remain unaffected.

19. 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

Ans: a

Exp: New START (for Strategic Arms Reduction Treaty) is a nuclear arms reduction treaty between the United States of America and the Russian Federation with the formal name of Measures for the Further Reduction and Limitation of Strategic Offensive Arms. It was signed on 8 April 2010 in Prague, and, after ratification, entered into force on 5 February 2011. It is expected to last at least until 2021.

20. 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

Ans: c

Exp: The concept of biodiversity hotspots was first put forward by Myers4 and the Western Ghats of India and Sri Lanka were included among the first 18 global biodiversity hotspots due to high levels of species endemism.

The wet evergreen forests of the Western Ghats and Sri Lanka have distinctive faunas and numerous species form endemic clades whereas the fauna and flora of lowland dry forests seem more similar. This is probably because contiguities between the wet zones over the ice ages might have been lower than between the dry zones.

The Indo-Burma Hotspot, with its unique assemblages of plant and animal communities and threatened and endemic species, and high levels of threat, is a global priority for conservation.

21. 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 strato-sphere
2. The photosynthesis by phyto-plankton 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

Ans: b

Exp: The most important greenhouse gas, apart from water vapour, is carbon dioxide (CO2). Levels have changed over time both naturally and because of humans. Much of the carbon dioxide produced by humans does not stay in the atmosphere but is stored in the oceans or on land in plants and soils. By far the largest carbon store on Earth is in sediments, both on land and in the oceans, and it is held mainly as calcium carbonate (CaCO3). The second biggest store is the deep ocean where carbon occurs mostly as dissolved carbonate (CO32-) and hydrogen carbonate ions (HCO3-). We think that about a third of the carbon dioxide from fossil fuel burning is stored in the oceans and it enters by both physical and biological processes.

As the carbon is heavier than air, not much of carbon dioxide escapes to stratosphere.

22. 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

Ans: b

Exp: Upwelling is an oceanographic phenomenon that involves wind-driven motion of dense, cooler, and usually nutrient-rich water towards the ocean surface, replacing the warmer, usually nutrient-depleted surface water. The increased availability in upwelling regions results in high levels of primary productivity and thus fishery production. Approximately 25% of the total global marine fish catches come from five upwellings that occupy only 5% of the total ocean area.

23. 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

Ans: a

Exp: EROSION AND ITS EFFECTS - "The loss of trees, which anchor the soil with their roots, causes widespread erosion throughout the tropics. Only a minority of areas have good soils, which after clearing are quickly washed away by the heavy rains. Thus crops yields decline and the people must spend income to import foreign fertilizers or clear additional forest."

24. 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

Ans: a

Exp: The Himalayan region, which is rich in vegetative life, possesses varieties that can be found practically from the tropical to tundra regions. Only the altitude influences the distribution of vegetation. In the rest of the country, the type of vegetation is largely determined by the amount of rainfall. Outside the Himalayan region, the country can be divided into three major vegetation regions: the tropical wet evergreen and semi-evergreen forests, the tropical deciduous forests, and the thorn forests and shrubs. Vegetation of the Assam region in the east is luxuriant with evergreen forests, occasional thick clumps of bamboo and tall grasses. The Gangetic plain is largely under cultivation. The Deccan tableland supports vegetation from scrub to mixed deciduous forests. The Malabar region is rich in forest vegetation. The Andaman and Nicobar Islands have evergreen, mangrove, beach and diluvial forests. Much of the country's flora originated three million years ago and are unique to the sub-continent.

25. 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 conser-vation 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

Ans: c

Exp: The options 2 and 4 directly affect the biodiversity. However, no option is for 2 and 4. As such the best option is all of the options as Import and Export (Control) Act, 1947 and the Customs Act, 1962 may also have indirect relevance to biodiversity conservation.

26. 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

Ans: d

Exp: The notion of class, as it is used by Marxists, differs radically from the notion of class as used in bourgeois social theory. According to modern capitalist thinking, class is an abstract universal defined by the common attributes of its members (i.e., all who make less than $20,000 a year constitute a "lower" class); categories and conceptions that have an existence prior to and independent of the people who make up the class.

For dialectical materialism however, the notion of class includes the development of collective consciousness in a class – arising from the material basis of having in common relations to the labour process and the means of production.

Dialectical Materialism
Dialectical Materialism is a way of understanding reality; whether thoughts, emotions, or the material world. Simply stated, this methodology is the combination of Dialectics and Materialism. The materialist dialectic is the theoretical foundation of Marxism (while being communist is the practice of Marxism).

27. 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

Ans: b

Exp: In a region extending from a height of about 50 km to over 500 km, most of the molecules of the atmosphere are ionised by radiation from the Sun. This region is called the ionosphere. Ionisation is the process in which electrons, which are negatively charged, are removed from neutral atoms or molecules to leave positively charged ions and free electrons. It is the ions that give their name to the ionosphere, but it is the much lighter and more freely moving electrons which are important in terms of HF (high frequency) radio propagation. The free electrons in the ionosphere cause HF radio waves to be refracted (bent) and eventually reflected back to earth. The greater the density of electrons, the higher the frequencies that can be reflected.
Ozone does not cause reflection of radio waves to Earth it is the negatively charged ions which cause the reflection.

28. 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

Ans: b

Exp: Does India need more foreign direct investment?
India doesn't need FDI. To get FDI, you have to install infrastructure first. China is getting 10 times more FDI than India because they have invested in roads and bridges and airports.
Why do you say India doesn't need FDI?
You need infrastructure to manage incoming FDI. You need clear policy.
FDI is not needed in India because we are getting more money from the FIIs. We are getting around $12 billion from them. They are buying in secondary markets and that money gets into

the Indian economy. While India gets around FDI worth $5 billion, China gets around $50 billion. They don't have our types of stockmarkets. So FIIs are absent there. In India, when FIIs pump in $12 billion, it means a few Indians have sold their shares to them (the FIIs), so that free cash gets invested somewhere within India by Indians. That money goes into land, buying of new stocks and into banks.

29. 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

Ans: a

Exp: What is Bt Brinjal?
Bt Brinjal is a transgenic brinjal created by inserting a gene cry1Ac from the soil bacterium Bacillus thuringiensis into Brinjal. This is said to give the Brinjal plant resistance against lepidopteran insects like the Brinjal Fruit and Shoot Borer Leucinodes orbonalis and Fruit Borer Helicoverpa armigera.

30. 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 house- hold
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

Ans: a

Exp: AAM ADMI BIMA YOJANA, a prestigious scheme of the Central and State / Union Territory Governments and administered by LIC brings a ray of hope and smile to these households.
ELIGIBILITY
The member should be aged between I 8 and 59 years

The member should be the head of the family or one earning member in the family of rural landless household.

31. 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 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

Ans: b

Exp: Brent Crude is the biggest of the many major classifications of crude oil consisting of Brent Crude, Brent Sweet Light Crude, Oseberg, Ekofisk, and Forties (BFOE). Brent Crude is sourced from the North Sea. The Brent Crude oil marker is also known as Brent Blend, London Brent and Brent petroleum. It is used to price two thirds of the world's internationally traded crude oil supplies.
Brent blend is a light crude oil, though not as light as WTI. It contains approximately 0.37% of sulphur, classifying it as sweet crude, yet again not as sweet as WTI. Brent is suitable for production of petrol and middle distillates. It is typically refined in Northwest Europe.

32. 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

Ans: a

Exp: The heavy water is used as a moderator in a nuclear reactor. It is used to slow the neutrons being directed at the fissionable material, by means of the molecules of the moderator physicaly impacting the incoming neutrons and absorbing some of the kenetic energy they posses, thus slowing them down, in the same way that two billiard balls impacting each other would slow down the incoming one (or both if they were both moving). The reason that the

neutrons have to be slowed is that most fissionable materials are more likely to absorb thermal neutrons (2.2km/s) than fast neutrons (14,000km/s).

33. 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

Ans: c

Exp: Article 29(1) provides for protection of interests of minorities and states that : "Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same". Article 30(1) provides for the right of minorities to establish and administer educational institutions and states: “All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice”. Article 30(2) states: “The State shall not, in granting aid to educational institutions, discriminate against any educational institution on the ground that it is under the management of a minority, whether based on religion or language”. Thus in India, minorities are classified on the basis of religion or on the basis of the language spoken.

The Hon’ble President, in his address to the Joint Session of Parliament on February 25, 2005, had announced that the Government would recast the 15 Point Programme for the Welfare of Minorities with a view to incorporate programme specific interventions. Prime Minister, in his address on the occasion of Independence Day, 2005, announced inter-alia that “We will also revise and revamp the 15 Point Programme for Minorities. The new 15 Point Programme will have definite goals which are to be achieved in a specific time frame”. In pursuance of these commitments, the earlier programme has been revised as the Prime Minister’s New 15 Point Programme for the Welfare of Minorities.

34. 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

Ans: d

Exp: Education for Persons with Disabilities 1.Education is the most effective vehicle of social and economic empowerment. In keeping with the spirit of the Article 21A of the Constitution guaranteeing education as a fundamental right and Section 26 of the Persons with Disabilities Act, 1995, free and compulsory education has to be provided to all children with disabilities up to the minimum age of 18 years.

Persons with Disabilities are entitled to a Barrier-Free Environment. (i) In transport :
* By arranging easy access.
* By adapting toilets in transport in such a way as to permit the wheelchair users to use the them conveniently.
(ii) on the road :
* By installation of auditory signals of red lights in the public roads.
* By causing curve cuts and slopes for the easy access of wheel-chair users.
* By engraving on the surface of the Zebra-crossing.
* By installing warning signals at appropriate places.
(iii) In built-up environment :
* By construction of ramps with hand-rails.
* By adaptation of toilets for wheel-chair users.
* By installation of Braille symbols/auditory signals in elevators or lifts.

43.Schemes for preferential allotment of land for certain purposes.- The appropriate Governments and local authorities shall by notification frame schemes in favour of persons with disabilities, for the preferential allotment of land at concessional rates for-
(a) house;
(b) setting up business;
(c) setting up of special recreation centres;
(d) establishment of special schools;

(e) establishment of research centres;
(f) establishment of factories by entrepreneurs with disabilities.

35. 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 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

Ans: b

Exp: MFPS is expected to facilitate the achievement of the Vision 2015 of Ministry of Food Processing Industries to raise the processing of perishables in the country from the existing 6% to 20%, value addition from 20% to 35% and the share in global food trade from 1.5% to 3% by the year 2015.

The primary objective of the MFPS is to provide adequate / excellent infrastructure facilities for food processing along the value chain from the farm to market. It will include creation of infrastructure near the farm, transportation, logistics and centralized processing centers. The main feature of the scheme is a cluster based approach. The scheme will be demand driven, pre marketed and would facilitate food processing units to meet environmental, safety and social standards.

36. 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

Ans: b

Exp: Article 283. (1) "The custody of the Consolidated Fund of India and the Contingency Fund of India, the payment of moneys into such Funds, the withdrawal of moneys therefrom, the

custody of public money other than those credited to such Funds received by or on behalf of the Government of India, their payment into the public account of India and the withdrawal of moneys from such account and all other matters connected with or ancillary to matters aforesaid shall be regulated by law made by Parliament, and until provision in that behalf is so made, shall be regulated by rules made by the President.

Article 266:
All revenues and receipts of government are to a “Consolidated Fund” and moneys can be withdrawn from the ‘Fund’ only in accordance with laws passed by Parliament

No moneys shall be appropriated out of the Consolidated Fund of India except in accordance with law.

Art 266(3):
Art 114:
No money can be issued out of Consolidated Fund of India unless the expenditure is authorised by an Appropriation Act.

37. 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

Ans: c

Exp: Article 266. (1):
Subject to the provisions of article 267 and to the provisions of this Chapter (i.e. Chapter I of Part XII of the Constitution) with respect to the assignment of the whole or part of the net proceeds of certain taxes and duties to States, all revenues received by the Government of India, all loans raised by that Government by the issue of treasury bills, loans or ways and means advances and all moneys received by the Government in repayment of loans shall form one consolidated fund to be entitled "the Consolidated Fund of India", and all revenues received by the Government of a State, all loans raised by that Government by the issue of treasury bills, loans or ways and means advances and all moneys received by that Government in repayment of loans shall form one consolidated fund to be entitled "the Consolidated Fund of the State".

38. 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

Ans: d

Exp: Micro finance is the provision of a wide range of financial services, such as deposits, loans, and insurance. The basic principle of micro finance is a provision of a package of financial services to low-income households. Microcredit (which is a component of micro finance) is a provision of credit facilities to low income household. The basic principle of micro credit is to give poor people access to capital and exploit their capacities and potentialities for economic development. The fundamental difference between these two terms are understanding of poor people economy and livelihood conditions. Thus, microfinance covers the acute need of poor people's financial services and protect from being further vulnerable but micro credit seems to be more technical and standalone approach to provide only credit services.

39. 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

Ans: d

Exp: Today the term Southeast Asia refers to that mass of land and archipelagos that are covered by the states of Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

Apart from its obvious economic importance and the fabulous mineral wealth that its marine territories are supposed to hold, Southeast Asia is also of global strategic importance. It is the bridge between the Indian and Pacific Oceans and controls vital sea-lanes that give China, Japan and the US Pacific Coast access to the Middle East and the eastern coasts of Africa. The oil tankers and freighters that pass daily without fail through these sea-lanes, to a significant extent, buttress Japan's status as an industrial power.

ASEAN's geostrategic importance stems from many factors, including: the strategic location of member countries, the large shares of global trade that pass through regional waters, and the alliances and partnerships which the United States shares with ASEAN member states.

40. A company marketing food products advertises that its items do not contain transfats. 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

Ans: c

Exp: What is Trans fats?
Trans fats are also known as hydrogenated fats. They are made by adding hydrogen to liquid vegetable oil under pressure. This results in a stiffer fat, a fat which is hard at room temperature. For example, vanaspati is a trans fat. They are artificial, they are man-made. All the trans fats are essentially artificial, only, very minute quantities of trans fats are found in animal meat and some dairy products. How do trans fats harm?
They harm by increasing the cholesterol levels in the blood. They also increase other harmful fats in the blood. They also bring down the "good cholesterol" the helpful cholesterol, or HDL cholesterol, in the blood. That means that trans fats work both ways, in spoiling your blood fat levels, by raising the harmful lipids and bringing down the good lipids. They block the arteries and prevent blood from flowing through them.
In women, trans fats actually doubles your risk of heart disease! Trans Fats also leads to decreased cognitive function of the brain, in people more than 65 years of age.
Trans fats are also very harmful to the children. It has been shown that children as young as 8, and 9 years have high cholesterol and early stages of clogged arteries.

Trans fats are found in biscuits, breads, confectionaries, fast-foods, fried food items, including namkeens, fried sweets, many cakes and pastries, ready to eat meals, fast foods, junk foods, microwave meals and snacks and much of the street, restaurant and hotel food, etc; Many halwais, street vendors also use vanaspati instead of ghee.

41. 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

Ans: d

Exp: The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is an Indian job guarantee scheme, enacted by legislation on August 25, 2005. The scheme provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage of 120 (US$2.68) per day in 2009 prices. The Central government outlay for scheme is 40,000 crore (US$8.92 billion) in FY 2010-11.

This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or un-skilled work to people living in rural India, whether or not they are below the poverty line. Around one-third of the stipulated work force is women. The law was initially called the National Rural Employment Guarantee Act (NREGA) but was renamed on 2 October 2009.

42. 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

Ans: b

Exp: India's "Look East" policy was developed and enacted during the governments of Prime Ministers P.V. Narasimha Rao and Atal Bihari Vajpayee. Along with economic liberalisation and moving away from Cold War-era policies and activities, India's strategy has focused on forging close economic and commercial ties, increasing strategic and security cooperation and the emphasis of historic cultural and ideological links. India sought to create and expand regional markets for trade, investments and industrial development. It also began strategic and military cooperation with nations concerned by the expansion of China's economic and strategic influence.

43. 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

Ans: d

Exp: The respective pm of country submit his or her resignation as he/she unable to prove his /her majority in the house.

44. 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

Ans: a Exp: The following are the Fundamental Duties prescribed by the Constitution of the nation under PART [IV-A] to its every citizen :

(a) To abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.
(b) To cherish and follow the noble ideals which inspired our national struggle for freedom.
(c) To uphold and protect the sovereignty, unity and integrity of India.
(d) To defend the country and render national service when called upon to do so.
(e) To promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women.
(f) To value and preserve the rich heritage of our composite culture.
(g) To protect and improve the natural environment including forests, lakes, rivers and wild life,

and to have compassion for living creatures.
(h) To develop the scientific temper, humanism and the spirit of inquiry and reform.
(i) To safeguard public property and to abjure violence.
(j) To strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavor and achievement.

45. 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

Ans: d

Exp: The Commission shall make recommendations as to the following matters, namely :-

(i) the distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them under Chapter I Part XII of the Constitution and the allocation between the States of the respective shares of such proceeds;
(ii) the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India and the sums to be paid to the States which are in need of assistance by way of grants-in-aid of their revenues under article 275 of the Constitution for purposes other than those specified in the provisos to clause (1) of that article; and
(iii) the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State.

46. 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/Human Rights under "Universal Declaration of Human Rights"?

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

Ans: d

Exp: The Universal Declaration of Human Rights has 30 Articles. The relevant articles are being reproduced below:

Article 26.
(1) Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.

Article 21.
(1) Everyone has the right to take part in the government of his country, directly or through freely chosen representatives.
(2) Everyone has the right of equal access to public service in his country.
(3) The will of the people shall be the basis of the authority of government; this will shall be expressed in periodic and genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or by equivalent free voting procedures.

Article 25.
(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.
(2) Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.

47. 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

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

Ans:b

Exp: Marine pollution occurs when harmful effects, or potentially harmful effects, can result from the entry into the ocean of chemicals, particles, industrial, agricultural and residential waste, noise, or the spread of invasive organisms. Most sources of marine pollution are land based. The pollution often comes from nonpoint sources such as agricultural runoff and wind blown debris.

Effect of eutrophication on marine benthic life:
Eutrophication is an increase in chemical nutrients, typically compounds containing nitrogen or phosphorus, in an ecosystem. It can result in an increase in the ecosystem's primary productivity (excessive plant growth and decay), and further effects including lack of oxygen and severe reductions in water quality, fish, and other animal populations.
The biggest culprit are rivers that empty into the ocean, and with it the many chemicals used as fertilizers in agriculture as well as waste from livestock and humans. An excess of oxygen depleting chemicals in the water can lead to hypoxia and the creation of a dead zone. Estuaries tend to be naturally eutrophic because land-derived nutrients are concentrated where runoff enters the marine environment in a confined channel.

Upwelling is an oceanographic phenomenon that involves wind-driven motion of dense, cooler, and usually nutrient-rich water towards the ocean surface, replacing the warmer, usually nutrient-depleted surface water.

The foremost cause attributed to the triggering and spread of blooms is increasing pollution. Though pollution is not always an obvious factor, it cannot be ignored. The nutrients that reach coastal waters by natural processes and due to increased anthropogenic activities stimulate the growth of 'background' population of blooming species6. Another possible cause for the increasing bloom is transport of exotic species through ballast water from ships. The invasion can cause profound changes in biodiversity.

48. Consider the foliowing:

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

Ans: c

Exp:: In Photosynthesis the carbon dioxide is absorbed by the plants and the oxygen is released. In all other activities carbon dioxide is released.
Animals inhale oxygen and exhale carbon dioxide. Green plants are the only plants that produce oxygen and make food, which is called photosynthesis. Photosynthesis means ''putting together with light.'' This takes place in chloroplasts, which have chlorophyll in them. Chlorophyll absorbs the sunlight. From sunlight, green plants combine carbon dioxide and water to make sugar and oxygen. Green plants use sugar to make starch, fats, and proteins. There are tiny pores called stomota. Carbon dioxide and oxygen enter and leave through the stomata respectively.

Decomposition drastically reduces the volume of organic matter:
Respiration:
the sum total of the physical and chemical processes in an organism by which oxygen is conveyed to tissues and cells, and the oxidation products, carbon dioxide and water, are given off.

The most abundant gas typically released into the atmosphere from volcanic systems is water vapor (H_2O), followed by carbon dioxide (CO_2) and sulfur dioxide (SO_2). Volcanoes also release smaller amounts of others gases, including hydrogen sulfide (H_2S), hydrogen (H_2), carbon monoxide (CO), hydrogen chloride (HCL), hydrogen fluoride (HF), and helium (He). A composting process that operates at optimum performance will convert organic matter into stable compost that is odor and pathogen free, and a poor breeding substrate for flies and other insects. In addition, it will significantly reduce the volume and weight of organic waste as the composting process converts much of the biodegradable component to gaseous carbon dioxide.

49. Recently, the OSA 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

Ans: a

Exp: The Australia Group (AG) is an informal forum of countries which, through the harmonisation of export controls, seeks to ensure that exports do not contribute to the development of chemical or biological weapons. Coordination of national export control measures assists Australia Group participants to fulfil their obligations under the Chemical Weapons Convention and the Biological and Toxin Weapons Convention to the fullest extent possible.

The Wassenaar Arrangement (full name: "The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies") is a multilateral export control regime (MECR) with 40 participating states including many former COMECON (Warsaw Pact) countries.
The Arrangement is open on a global and non-discriminatory basis to prospective adherents that comply with the agreed criteria. Admission of new members requires the consensus of all members.
All but two OECD Member countries are members of the Wassenaar Arrangement.

50. 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

Ans: c

Exp: The anomalous expansion of water as it cools from 4°C to 0°C means that the density of water is greatest at 4°C . So the ice that forms in cold weather forms at the top of the water (where the less dense coldest water gathers) and then acts as an insulating barrier, preventing the water underneath from getting much colder (because heat cannot escape).

51. 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

Ans: b

Exp: In the last century, the Indian wild ass lived all over the dry regions of northwestern India and western Pakistan including Jaisalmer, Bikaner, Sind and Baluchistan. Today, it survives only in the Little Rann, and a few stray towards the Great Rann of Kutch with some reaching bordering villages in the Jalore district of the Indian State of Rajasthan. First census of the wild ass was done in 1940, when there were an estimated 3,500 wild asses. But, by the year 1960, this figure fell to just 362, it was then classified as a highly endangered species. In the years 1973 & 1976, Rann of Kutch and adjoining districts were taken up as the area for conservation for this sub-species also known as Khur. From 1976, the forest department began conducting the Wild Ass census. Water holes were increased in the area, the forest department has also started a project for having fodder plots though the forest department is yet to get desired success. In 1998, Wild Ass population was estimated at 2,940, by the year 2004 it has increased to an estimated 3,863. A recent census conducted by forest department in 2009 has revealed that the population of wild ass in the state was now estimated to about 4,038, an increase of 4.53% as compared to 2004.

52. La Nina is suspected to have caused recent floods in Australia. How Is La Nina different from EI Nino?

1. La Nina is characterised by un-usually cold ocean' temperature in equatorial indian Ocean whereas EI Nino-is -Characterised "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 I nor 2

Ans: c

Exp: La Niña is a coupled ocean-atmosphere phenomenon that is the counterpart of El Niño as part of the broader El Niño-Southern Oscillation climate pattern. During a period of La Niña, the

sea surface temperature across the equatorial Eastern Central Pacific Ocean will be lower than normal by 3–5 °C. In the United States, an episode of La Niña is defined as a period of at least 5 months of La Niña conditions. The name La Niña originates from Spanish, meaning "the girl," analogous to El Niño meaning "the boy."

La Niña, sometimes informally called "anti-El Niño", is the opposite of El Niño, where the latter corresponds instead to a higher sea surface temperature by a deviation of at least 0.5 °C, and its effects are often the reverse of those of El Niño. El Niño is famous due to its potentially catastrophic impact on the weather along both the Chilean, Peruvian and Australian coasts, among others. La Niña is often preceded by a strong El Niño.

For India, an El Niño is often a cause for concern because of its adverse impact on the south-west monsoon; this happened in 2009. A La Niña, on the other hand, is often beneficial for the monsoon, especially in the latter half. The La Niña that appeared in the Pacific in 2010 probably helped 2010's south-west monsoon end on a favourable note.

53. 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 Zarnindar '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

Ans: b

Exp: The immediate consequence of the Permanent Settlement was both very sudden and dramatic, and one which nobody had apparently foreseen. By ensuring that zamindars' lands were held in perpetuity and with a fixed tax burden, they became desirable commodities. In addition, the government tax demand was inflexible and the British East India Company's collectors refused to make allowances for times of drought, flood or other natural disaster. The tax demand was higher than that in England at the time. As a result, many zamindars immediately fell into arrears.
The Company's policy of auction of any zamindari lands deemed to be in arrears created a market for land which previously did not exist. Many of the new purchasers of this land were Indian officials within the East India Company's government. These bureaucrats were ideally placed to purchase lands which they knew to be underassessed, and therefore profitable. In addition, their position as officials gave them opportunity to quickly acquire the wealth necessary to purchase land through bribery and corruption.

54. 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 spontanous movement
(d) It did not attract the labour class in general

Ans: b

Exp: On August 8, 1942 the Quit India Resolution was passed at the Bombay session of the All India Congress Committee (AICC). In a speech at Gowalia Tank, Bombay, Gandhi told Indians to follow non-violent civil disobedience. He told the masses to act as an independent nation. His call found support among a large number of Indians
In early hours of 9th August, all the top leaders - Gandhi, Nehru, Patel, Azad were arrested and Congress was declared an unlawful organization. With the arrest of all the national leaders, there was nobody to guide the popular agitation.
Due to the arrest of major leaders, a young and till then relatively unknown Aruna Asaf Ali presided over the AICC session on August 9 and hoisted the flag; later the Congress party was banned. These actions only created sympathy for the cause among the population.

A good deal of controversy exists about the nature of the movement-whether it was a 'spontaneous revolution' or an 'organised rebellion'. The famous 'Quit India' resolution passed by the Bombay session of the AICC on 8 August 42 followed up its call for 'mass struggle on non violent lines on the widest possible scale', 'inevitably' under Gandhi, with the significant rider that if the Congress leadership was removed by arrest, every Indian who desires freedom and strives for it must be his own guide...'.
The movement was, in reality 'elemental and largely spontaneous'. It was sparked off by a variety of factors and of an expectation that British rule was coming to an end. Bureaucratic high-handedness and provocation worsened the situation. Financial losses incurred in Malay and Burma induced sections of Indian business community to give some covert support to a movement (even if violent) for a short while.

55. 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

Ans: c

Exp: The rebellion continued till the beginning of the 19th century and was marked by daring attacks on the East India Company's offices in different parts of Bihar and Bengal, killing of notorious Indian landlords and money-lenders as well as of oppressive British traders and army officers, and both guerilla and positional warfare against the British army.
In 1820, the Ho tribal peasants of Chhotanagpur in Bihar, rose against the British rulers and the local money-lenders and zamindars. The establishment of British authority in the area, had led to dislocation in the socio-economic living pattern of the Ho people. A large number of Hindu, Muslim and Sikh traders and money-lenders had come and settled among them. Their lands were being occupied by these outsiders through contracts enforced by courts of law. Widespread discontent ensued among the Hos.

56. 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 strip-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 facilitaied seayo Yagages
(d) Both (a) and (b) are convincing explanations in this context

Ans: d

Exp: The world's first dock at Lothal (2400 BCE) was located away from the main current to avoid deposition of silt.Modern oceanographers have observed that the Harappans must have possessed great knowledge relating to tides in order to build such a dock on the ever-shifting course of the Sabarmati, as well as exemplary hydrography and maritime engineering. This was the earliest known dock found in the world, equipped to berth and service ships. It is speculated that Lothal engineers studied tidal movements, and their effects on brick-built structures, since the walls are of kiln-burnt bricks. This knowledge also enabled them to select Lothal's location in the first place, as the Gulf of Khambhat has the highest tidal amplitude and ships can be sluiced through flow tides in the river estuary. The engineers built a trapezoidal structure, with north-south arms of average 21.8 metres (71.5 ft), and east-west arms of 37 metres (121 ft).

It should be mentioned here that Tamil Pandya embassies were received by Augustus Caesar and Roman historians mention a total of four embassies from the Tamil country. Pliny famously

mentions the expenditure of one million sestertii every year on goods such pepper, fine cloth and gems from the southern coasts of India.

57. 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 5GHz 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 Blue- tooth 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

Ans: a

Exp: Bluetooth and Wi-Fi are both wireless networking standards that provide connectivity via radio waves. The main difference: Bluetooth's primary use is to replace cables, while Wi-Fi is largely used to provide wireless, high-speed access to the Internet or a local area network.

Bluetooth, WiFi and WiMAX are wireless technologies which allow devices to inter-connect and communicate with each other. Radio waves are electomagnetic waves and have different frequencies. These technologies are radio frequencies. Similar to the analogue radio, or FM radio. Bluetooth works on 2.45GHz frequency. WiFi works in two frequency bands 2.4GHz and 5GHz. WiMAX works in two frequency bands, 2 - 11GHz and 10 - 66GHz

58. 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

Ans: a

Exp: Advantages of Microirrigation Water saving Enhanced plant growth and yield
Uniform and better quality of produce

Efficient and economic use of fertilizers
Less weed growth
Also suitable to waste lands
Possibility of using saline water
No soil erosion
Flexibility in operation
Easy installation
Labour saving
Suitable to all types of land terrain
Saves land as no bunds etc. are required
Minimum diseases and pest infestation

What is dryland farming?
A: Dryland farming systems do not use irrigation but depend on precipitation to meet crop requirements. For this reason, it is essential that the producer first evaluate the effect of conversion from irrigated to dryland farming based on crop yields, crop production costs, and farm profits from neighbors in similar geographical and climatic contexts in order to assess associated risks. This assessment will help the producer determine how much of their land to transfer and its feasibility in relation to type of crop, crop yield, production costs, and total potential profit. The most common dryland crops are pasture and small grains, however, row crops such as sorghum, corn, or cotton may also withstand dryland farming depending on geographical location. Record keeping will help the producer monitor changes over time in order to assess long term risk and economic feasibility.

59. 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) I and 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

Ans: a

Exp: During the period of direct British rule from 1858 to 1947, official transfers of funds to the UK by the colonial government were called the “Home Charges”. They mainly represented debt service, pensions, India Office expenses in the UK, purchases of military items and railway equipment.

60. 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

Ans: a

Exp: The Kheda district of Gujarat was on the verge of famine owing to failure of the crops. The yield had been so low that the cultivators, especially the poorer section, were unable to pay the revenue. But the government insisted that the yield had not been so bad and that the cultivators should pay the tax. Gandhi saw the justice of the cause of the cultivators and advised them to offer Satyagraha by not paying their taxes.

Many leaders, like Vallabhbhai Patel, Shankarlal Banker, Mahadev Desai and others, took an active part in this struggle. The campaign came to an unexpected end. There had been signs that it might fizzle out, but after four months’ struggle there came an honourable settlement. The Government said that if well-to-do cultivators paid up the poorer section would be granted suspension. This was agreed to and the campaign ended.

61. 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

Ans: d

Exp: Biodiversity is the basis of human existence, our life support system. Ecosystems regulate climatic processes, breakdown wastes and recycle nutrients, filter and purify water, buffer against flooding, maintain soil fertility, purify air, and provide natural resources such as wood, textiles, and of course food. All agriculture depends fundamentally on Biodiversity, as do marine and freshwater food resources. To allow continued biodiversity loss means loosing the essential services that biodiversity provides, and prevents handing down an invaluable gift to future generations. The below table, adapted from the Millennium Ecosystem Assessment outlines the concept of ecosystem services and illustrates the importance of maintaining rich biodiversity and a healthy environment.

Ecosystem Services

Supporting	Provisioning	Regulating	Cultural
Nutrient Cycling	Food	Climate Regulation	Aesthetic
Primary Production	Freshwater	Flood Regulation	Spiritual
Soil Formation	Wood and Fiber	Disease Regulation	Educational
	Fuel...	Water Purification	Recreational

62. 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 'beccmes 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 calorieson oxidation

Ans: d

Exp: Aspartame, an artificial sweetener, is approximately 200 times sweeter than sucrose, or table sugar. Due to this property, even though aspartame produces four kilocalories of energy per gram when metabolized, the quantity of aspartame needed to produce a sweet taste is so small that its caloric contribution is negligible.

No matter how much aspartame a person consumes, after it is eaten, aspartame absorbs into the body, where it breaks down into methanol, aspartic acid, and phenylalanine. Although all three of these metabolites naturally occur in the body, each can cause harm when consumed separately in high doses. Because it is these metabolites that can be harmful and not aspartame itself, studies into the safety of aspartame examine how consuming the sweetener affects the levels of methanol, aspartic acid, and phenylalanine in the body.

63. 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

Ans: a

Exp: He entered Parliament in 1893 as a Liberal member and sought to voice India's grievances in the House. He formed the Indian Parliamentary Committee with which he was associated as Chairman from 1893 to 1900. In 1895, William Wedderburn represented India on the Welby Commission (i.e. Royal Commission) on Indian Expenditure. He also began participating in the activities of the Indian Famine Union, set up in June 1901, for investigation into famines and proposing preventive measures. He came to India in 1904 to attend the 20th session of the Indian National Congress in Bombay, which was presided over by Sir Henry Cotton. He was again invited in 1910 to preside over the 25th session. He remained the Chairman of the British Committee of the Congress from July 1889 until his death.

64. 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

Ans: c

Exp: Until recently, most homes used incandescent light bulbs. Incandescent bulbs emit light by generating heat. Unfortunately 90% of the power required to provide the desired brightness is emitted in heat rather than visible light. For this reason, incandescent bulbs are gradually being phased out, and in the United States will be banned entirely by 2014. CFLs have been touted enthusiastically in the past decade, but LEDs are beginning to surpass them because they require as little as half the power and last 10 times longer than a CFL. The table below contrasts the three technologies.

	Incandescent	CFL	LED
Life Span	1,000 hours	6,000	**50,000 hours**
Watts	40W	9W	**6W**
Lumens	**400**	320	300
Heat Emitted	56.6 BTUs per hour	20.3 BTUs per hour	**2.3 BTUs per hour**
CO2 Emissions	3000 pounds per year	701 pounds per year	**301 pounds per year**
Contains Mercury	**No**	Yes	**No**
RoHS Compliant	**Yes**	No	**Yes**
Kilowatts of Electricity Used*	2190 KWh per year	531 KWh per year	**228 KWh per year**
Annual Operating Cost*	$219.06 per year	$53.06 per year	**$22.76 per year**
Cost of Bulb	**$0.84**	$2.49 (average)	$24.99
Months to Recover Initial Expense	N/A	Vs. Incandescent: <1 month	Vs. Incandescent: 1.5 months Vs. CFL: 9 months

*30 Incandescent Bulbs per Year Equivalent

65. 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

Ans: a

Exp: Oilzapper: eliminate crude oil spills, manage oily sludge
Results
In the year 1997, TERI initiated the research on crude oil and oil sludge degrading bacterial consortium. After seven years of research work, TERI developed the Oilzapper (crude oil and oily sludge degrading bacterial consortium). Oilzapper was produced in bulk and immobilized on to a carrier material (organic powder material). Carrier based Oilzapper was used for clean up of crude oil spills and treatment of oily sludge.

More than 40,000 tonnes of oily sludge/oil contaminated soil and drill cuttings have been treated at various locations. More than 30,000 tonnes of oily sludge/oil contaminated soil is under treatment at different locations in India and the Middle East countries.

With the application of Oilzapper, crude oil contaminated agricultural lands were cleaned up in the north-eastern and western parts of India.

66. 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 0 negative. The blood group of. the three sons is A positive, B positive, and 0 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

Ans: a

Exp:

There are four blood types... A, B, O, and AB.

Parents' Blood Types	Possible Children	Impossible Children
A & A	A, O	B, AB
A & B	A, B, AB, O	none
A & AB	A, B, AB	O
A & O	A, O	B, AB
B & B	B, O	A, AB
B & AB	A, B, AB	O
B & O	B, O	A, AB
AB &AB	A, B, AB	O
AB & O	A, B	AB, O
O & O	O	A, B, AB

67. 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

Ans: c

Exp: It was 150 years ago that the book Unto This Last was published, a groundbreaking work that turned economic thinking on its head and profoundly influenced the views of many including Mahatma Gandhi, the father of Indian independence.

Gandhi first read the subversive masterwork of political economy by John Ruskin in 1904, during a train trip in South Africa where he was living at the time.

“The book was impossible to lay aside, once I had begun it,” wrote the progenitor of the non-violence resistance movement years later in his autobiography. “It gripped me. Johannesburg to Durban was a twenty-four hours’ journey. The train reached there in the evening. I could not get any sleep that night. I determined to change my life in accordance with the ideals of the book,” Gandhi wrote.

“I believe that I discovered some of my deepest convictions in this great book,” he wrote, adding the work “captured me and made me transform my life.”

Ruskin was a middle-aged writer and art critic who already had two well-received works — The Seven Lamps of Architecture and The Stones of Venice — when he wrote Unto This Last.

The book, a radical critique of capitalism that up-ended Victorian-era England when it was published in December 1860, appeared first as a series in four issues of Cornhill Magazine. It was bound as a single volume 18 months later.

It caused an uproar by rejecting the classical theories of economists like Adam Smith, David Ricardo and John Stuart Mill.

The book redefined humans as complex beings often driven by emotions and motivations that cannot be explained by the laws of supply and demand.

The title Unto This Last is taken from the Gospel of St Matthew, chapter 20.

68. 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

Ans: a

Exp: Usha Mehta (March 25, 1920 – August 11, 2000) was a renowned Gandhian and freedom fighter of India. She is also remembered for organizing the Congress Radio, also called the Secret Congress Radio, an underground radio station, which functioned for few months during the Quit India Movement of 1942. In 1998, the Government of India conferred on her Padma Vibhushan, the second highest civilian award of Republic of India.

69. 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 is1-2 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

Ans: b

Exp: Blu-ray Disc (official abbreviation BD) is an optical disc storage medium designed to supersede the DVD format. The disc diameter is 120 mm and disc thickness 1.2 mm plastic optical disc, the same size as DVDs and CDs. Blu-ray Discs contain 25 GB (23.31 GiB) per layer, with dual layer discs (50 GB) being the norm for feature-length video discs.

Blu-ray (not Blue-ray) also known as Blu-ray Disc (BD), is the name of a new optical disc format jointly developed by the Blu-ray Disc Association (BDA), a group of the world's leading consumer electronics, personal computer and media manufacturers (including Apple, Dell, Hitachi, HP, JVC, LG, Mitsubishi, Panasonic, Pioneer, Philips, Samsung, Sharp, Sony, TDK and Thomson). The format was developed to enable recording, rewriting and playback of high-definition video (HD), as well as storing large amounts of data. The format offers more than five times the storage capacity of traditional DVDs and can hold up to 25GB on a single-layer disc and 50GB on a dual-layer disc. This extra capacity combined with the use of advanced video and audio codecs will offer consumers an unprecedented HD experience. While current optical disc technologies such as DVD, DVD±R, DVD±RW, and DVD-RAM rely on a red laser to read and write data, the new format uses a blue-violet laser instead, hence the name Blu-ray. Despite the different type of lasers used, Blu-ray products can easily be made backwards compatible with CDs and DVDs through the use of a BD/DVD/CD compatible optical pickup unit.

70. 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) I only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Ans: b

Exp: The Nehru Report

The constitution outlined by the Nehru report was for Indian enjoying dominion status within the British Commonwealth. Some of the important elements of the report–
Unlike the eventual Government of India Act 1935 it contained a Bill of Rights

All power of government and all authority - legislative, executive and judicial - are derived from the people and the same shall be exercised through organizations established by, or under, and in accord with, this Constitution
There shall be no state religion; men and women shall have equal rights as citizens.
There should be federal form of government with residuary powers vested in the center.(Some scholars, such as in in Moore 1988] considered the Nehru Report proposal as essentially unitary rather than federal.);
It included a description of the machinery of government including a proposal for the creation of a Supreme Court and a suggestion that the provinces should be linguistically determined;
It did not provide for separate electorates for any community or weightage for minorities. Both of these were liberally provided in the eventual Government of India Act 1935. However, it did allow for the reservation of minority seats in provinces having a minorities of at least ten percent, but this was to be in strict proportion to the size of the community.
The language of the Commonwealth shall be Indian, which may be written either in Devanagari in Hindi,Telugu, Kannada,Marathi,Gujarati,Bengali, Tamil or in Urdu character. The use of the English language shall be permitted.
The Nehru Report, along with that of the Simon Commission was available to participants in the three Indian Round Table Conferences 1931-1933.

However, the Government of India Act 1935 owes much to the Simon Commission report and little, if anything to the Nehru Report.

71. 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

Ans: b

Exp: Orchids from 9% of our flora and are the largest botanical family of higher plants in India. It is estimated that about 1,300 species (140 genera) of orchids are found in our country with Himalayas as their main home and others scattered in Eastern and western Ghats. The following is the distribution of orchids species in different regions of India.

North-Western Himalayas ca 200 species
North-Eastern India ca 800 species
Western Ghats ca 300 species

North-Eastern India owing to its peculiar gradient and varied climatic conditions contains largest group of temperate, sub-tropical orchids.

72. 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

Ans: b

Exp: "In-situ" means at the same place. Except Botanical Garden all the three are preserved at the places of their exixtence. Botanical Garden is developed by bringing and preserving different plant species from various places.

73. 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

Ans: d

Exp: Under the Constitution Seventy-Fourth Amendment Act, 1992 there is a mandatory provision for constitution of Metropolitan Planning Committee in all the metropolitan areas by the State Governments. As per Constitution Amendment Act, Metropolitan Area means an area having a population of ten lakh or more comprised in one or more districts and consisting of two or more municipalities or Panchayats or other contiguous areas specified and notified by the State Government to be a Metropolitan area for this purpose.

Metropolitan Planning Committee for metropolitan areas will play an important role as an intergovernmental, inter-organizational, politically representative forum.

The MPC is required to prepare a development plan for the entire metropolitan area as notified by the State Government. Development Plan will have to incorporate the plans of Municipalities and Panchayats falling in the metropolitan area.

74. 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 1 and 2
(d) Neither 1 or 2

Ans: d

Exp: During an election year it is not practical for the ruling Government or for the new Government taking charge after the elections to prepare or debate on the full budget and pass it before the new financial year begins. Hence, the outgoing Government would announce an interim budget or vote on account in February which will be followed by a full budget by the new Government in a few months' time after the elections.

The interim budget will include a report card on the income and expenses made last year and the proposed expenses likely to be made in the next few months until the new government takes over. There is no proposal on the income part of the budget through collection of taxes. This procedure called vote on account would seek the approval of the Parliament. Once there is approval the funds for these expenses are then debited to the Consolidated Fund of India.

An interim budget or VOA is also presented just before a few months in the pre-election period during which a code of conduct is put in place. This would gag the central and state governments from announcing any major sops as this could swing the voting pattern in favor of the ruling government.

What is a vote-on-account?

An annual budget is an exercise which the ruling government undertakes whereby it puts forth a report card of its income and expenses in the previous year.

It also puts forth provisions to raise money (from taxes) and spend money (on welfare measures). In doing that, it seeks the parliament's approval to spend the requisite amount of money. The Parliament then votes for or against the proposals and the finance bill gets passed. This whole process begins on February 28 when the Finance Minister makes the budget speech and goes on till 31st March, when the bill is passed in the parliament.
Now there might be times when the parliament cannot or does not have enough time to vote the entire budget before the new financial year begins. For instance, if a new government comes into power a few months before February, it may not have enough time to study the fiscal state and announce a budget. So the new government may announce an interim budget in February and a full budget in a few months' time.
Pre-election is also a time when vote on account kicks in. A few months before the elections, a code of conduct comes into play during which the central and state governments cannot announce any major sops to the electorate to prevent any unfair swings in the voting pattern. Moreover, even if the code of conduct does not come into play, it is regarded improper for an outgoing government to impose on its successor changes that may or may not be acceptable to the incoming government.
When elections are around the corner, like now (elections are likely to be held in April-May), the government can only present a report card of last year's income and expenses. It can also seek the parliament's approval for expenses that it foresees for the next few months until the elections are over and the new government is in place.
This exercise is called vote on account.

So what is the difference between Vote on Account and Budget?

A vote on account only talks about the expenses that the government is likely to make during the next few months. A budget in turn also talks about how it proposes to raise the money to meet these expenses. These are normally in the form of tax sops.

When will the budget be held after the vote on account?
During election year, the budget is held after the new government is formed.
Usually the gap between the vote on account and budget does not exceed six months.
When was the first VOA held in independent India?
1952-53

75. 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

Ans: c

Exp: The International Monetary Fund (IMF) is an intergovernmental organization that promotes international economic cooperation, focusing in particular on policies that have an impact on the exchange rate and the balance of payments. The organization's stated objectives are to promote international economic cooperation, international trade, employment, and exchange rate stability, including by making resources available to member countries to meet balance of payments needs. Its headquarters are in Washington, D.C. The IMF's relatively high influence in world affairs and development has drawn heavy criticism from some sources.

76. 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

Ans: a

Exp: Protection against coastal disasters has been identified as an important service of mangrove ecosystems. Empirical studies on this service have been criticized, however, for using small samples and inadequately controlling for confounding factors. We used data on several hundred villages to test the impact of mangroves on human deaths during a 1999 super cyclone that struck Orissa, India. We found that villages with wider mangroves between them and the coast experienced significantly fewer deaths than ones with narrower or no mangroves.

The ability of mangroves to reduce damage caused by tsunamis and tropical storms is reportedly one of the most undervalued ecosystem services provided by such forests (1), but evidence supporting this claim is controversial. Studies conducted soon after the 2004 Indian Ocean tsunami reported that mangroves acted as bioshields, with villages located behind them suffering less damage than ones directly exposed to the coast (2, 3). In response to these findings and anecdotal evidence, organizations such as the United Nations Environment Program have emphasized rehabilitating ecosystems as a first line of tsunami defense

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

(a) Universal Law
(b) Universal Truth
(c) Universal Faith
(d) Universal Soul

Ans: a

Exp: According to Jainism, this loka or Universe is an uncreated entity, existing since infinity, immutable in nature, beginning less and endless. Jain texts describe the shape of the Universe as similar to a man standing with legs apart and arm resting on his waist. The Universe according to Jainism is narrow at top and broad at middle and once again becomes broad at the bottom. Mahapura of Acarya Jinasena is famous for his quote:
" Some foolish men declare that the creator made the world. The doctrine that the world was created is ill advised and should be rejected. If god created the world, where was he before the creation? If you say he was transcendent then and needed no support, where is he now? How could god have made this world without any raw material? If you say that he made this first, and then the world, you are faced with an endless regression. "

78. 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

Ans: b

Exp: Another concern besides excessive salinity build-up as regards the long-term feasibility of using saline water for irrigation is that of soil permeability and tilth. As discussed in Chapter 4, the likelihood of these problems increase as SAR increases and as electrical conductivity decreases. Therefore, adverse effects are most likely to occur during the periods of rainfall and irrigation using low-salinity water on soils previously irrigated with sodic, saline water. Such problems occurred at an experimental "reuse" site in California following pre-season rains and pre-irrigation with 0.3 dS/m canal water where sodic, saline water [9000 mg/l TDS; SAR = 30 (mmolc/l)½] had been used for irrigation for four consecutive years (Rolston et al. 1988). The consequence was impermeable, crusted soils and poor stand establishment. Whether such a problem will occur, or not, depends upon whether the EC of the high quality water is less than the threshold value, given the SAR of the saline water. Some combinations of the two waters

are not permissible. The methods given in chapter 4 may be used to assess whether such a problem is likely to occur or not. This problem can often be controlled by the use of amendments and appropriate tillage practices as discussed

79. 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

Ans: b

Exp: A Red Data Book contains lists of species whose continued existence is threatened. Species are classified into different categories of perceived risk. Each Red Data Book usually deals with a specific group of animals or plants (e. reptiles, insects, mosses). They are now being published in many different countries and provide useful information on the threat status of the species.

80. 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

Ans: a

Exp: Itis a type of loan whichcarry attractiveinterest rate & discount offers during the initial phase of the loan.After specific time period, they relapse back to the then prevailingrates.
Why have teaser loans received a bad name?

Teaser home loans have received a bad name because of the sup-prime crisis in the US. In America, many lenders encouraged borrowers to take on home loans they could not afford by offering them teaser rates for the initial years. As long as home prices rose, many borrowers were able to take second loans on their property and meet their obligations. But when home prices stabilised, many borrowers were not in a position to repay and banks found it difficult to realise their loans.

81. 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

Ans: c

Exp: Satellites typically move at 5 miles per second forward in their orbits. At the same time they will drop about 8 feet towards the Earth due to its gravity. However, the Earth is not flat, but round. In five miles the Earth drops 8 feet off of the level it would have if flat. (This of course ignores hills and valleys, so imagine an Earth totally covered by an ocean with no waves or tides, if you must) Anyhow, the 8 foot drop of the satellite is exactly matched by the 8 foot drop of ground level.

the altiude and speed of a satellite are carefully calculated, the amount that the satellite falls in one second due to gravity matches the curvature of the earth's surface; if the speed remains constant the satellite will remain in orbit.

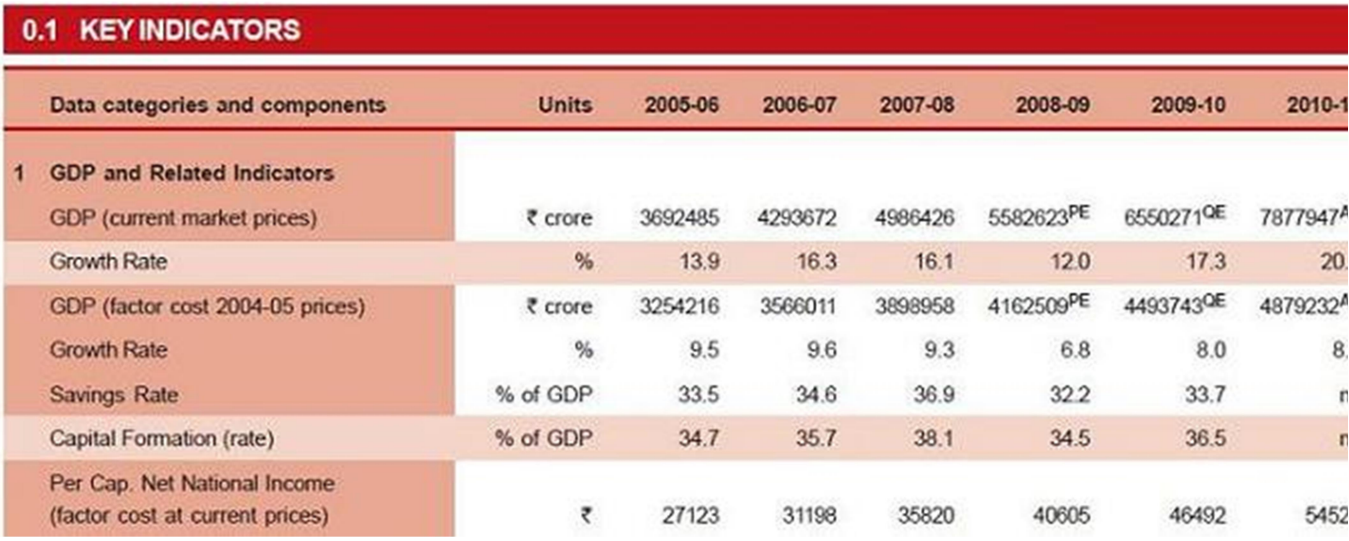
82. In the context of Indian economy, consider the following statements :

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

Ans:

Exp:



0.1 KEY INDICATORS

Data categories and components	Units	2005-06	2006-07	2007-08	2008-09	2009-10	2010-1
1 GDP and Related Indicators							
GDP (current market prices)	₹ crore	3692485	4293672	4986426	5582623PE	6550271QE	7877947A
Growth Rate	%	13.9	16.3	16.1	12.0	17.3	20.
GDP (factor cost 2004-05 prices)	₹ crore	3254216	3566011	3898958	4162509PE	4493743QE	4879232A
Growth Rate	%	9.5	9.6	9.3	6.8	8.0	8.
Savings Rate	% of GDP	33.5	34.6	36.9	32.2	33.7	n
Capital Formation (rate)	% of GDP	34.7	35.7	38.1	34.5	36.5	n
Per Cap. Net National Income (factor cost at current prices)	₹	27123	31198	35820	40605	46492	5452

83. 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

Ans: a

Agency wise analysis indicates that the share of Cooperative Banks in the ground level credit for agriculture and allied activities has been declining. Details given in Annexure-III. It declined from 45% in 1996-97, the terminal year of VIIIth Plan to an estimate of 41% during 2000-2001. The decline has been uniform under both production credit and investment credit. The compound growth rate of credit has been consistent and increased from 9.5% during 1997-98 to 15% in 1998-99 and to 18.6% in 1999-2000. The share of long term structure was around 22% of credit flow through the cooperative structure but the compound growth rate, though positive has been declining from 15.78% in 1997-98 over 1996-97 to 14.9% in 1998-99 to 11.2% in 1999-2000.

The Commercial Banks have improved their share from 49% in 1996-97 to 52% in 2000-01. Thus the CBs have become the major agency for dispensing credit in agriculture and allied sector. However, they still fall short of their achievement of the priority sector target of 18%. Direct agricultural advances by the CBs was only 11.8% of the total net bank credit in March 2000. The RRBs are stagnating at 7% only.

84. Which of the following can aid in furthering the Govemment'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

Ans: d

Exp: The 11th Plan provides an opportunity to restructure policies to achieve a new vision based on faster, more broad-based and inclusive growth. It is designed to reduce poverty and focus on bridging the various divides that continue to fragment our society. The 11th Plan must aim at putting the economy on a sustainable growth trajectory with a growth rate of approximately 10 per cent by the end of the Plan period. It will create productive employment at a faster pace than before, and target robust agriculture growth at 4% per year. It must seek to reduce disparities across regions and communities by ensuring access to basic physical infrastructure as well as health and education services to all. It must recognize gender as a cross-cutting theme across all sectors and commit to respect and promote the rights of the common person. The first steps in this direction were initiated in the middle of the 10th Plan based on the National Common Minimum Programme adopted by the government. These steps must be further strengthened and consolidated into a strategy for the 11th Plan.

The private sector, including farming, micro, small and medium enterprises (MSMEs), and the corporate sector, has a critical role to play in achieving the objective of faster and more inclusive growth. This sector accounts for 76% of the total investment in the economy and an even larger share in employment and output. MSMEs, in particular, have a vital role in expanding production in a regionally balanced manner and generating widely dispersed off-farm employment. Our policies must aim at creating an environment in which entrepreneurship can flourish at all levels, not just at the top.

Self-Employment Programmes Self-employment is promoted through many schemes by many different departments. Besides an array of programmes for village and small scale enterprises, there are special schemes for scheduled castes and tribes. As far as Rural Development is concerned, the present strategy for promotion of self-employment in rural areas relies mainly on formation of self-help groups to empower rural communities and enable them to take up

economic activities. Many other departments in government also have schemes that provide assistance to selfhelp groups but guidelines vary in scope, content and implementation mechanisms thus creating overlap and inefficiency.

85. 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

Ans: a

Exp: "The main objective of disinvestment is to put national resources and assets to optimal use and in particular to unleash the productive potential inherent in our public sector enterprises. The policy of disinvestment specifically aims at:
· Modernization and upgradation of Public Sector Enterprises;
· Creation of new assets;
· Generation of employment; and
· Retiring of public debt.

Government would continue to ensure that disinvestment does not result in alienation of national assets, which, through the process of disinvestment, remain where they are. It will also ensure that disinvestment does not result in private monopolies. In order to provide complete visibility to the Government's continued commitment of utilisation of disinvestment proceeds for social and infrastructure sectors, the Government would set up a Disinvestment Proceeds Fund. This Fund will be used for financing fresh employment opportunities and investment, and for retirement of public debt. For the disinvestment of natural asset companies, the Ministry of Finance and the Ministry of Disinvestment will work out guidelines.

86. What is the difference between asteroids and comets?

1. Asteroids are small rocky plane- toids, 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

Ans: b

Exp: The main difference between an asteroid and a comet is what they are made of. Asteroids are made up of metals and rocky material, while comets are made up of ice, dust and rocky material. Both of these space objects were formed during the earliest times of the solar system, around 4.5 billion years ago. Asteroids formed much closer to the Sun, where it was too warm for ices to remain solid. Comets formed farther from the sun where ices would not melt. Comets, which approach the Sun, lose material with each orbit because some of their ice melts and vaporizes to form a tail.

A few other important differences between an asteroid and a comet exist. Obviously, comets have tails and asteroids do not. The heat from the Sun causes ice and other materials on a comet's surface to heat up until they vaporize. That vapor is what is seen as the comets tail. Another difference is in their orbital patterns. Comets tend to have very extended and elongated orbits, many times going more than 50,000 AU from the Sun (1 AU, or astronomical unit, equals the distance from the Earth to the Sun).

Asteroids tend to have shorter, more circular orbits and they seem to want to group together in belts.

Another difference between an asteroid and a comet is in the numbers of each. There are only 3,572 known comets, but there are many millions of asteroids. Some as small as dust particles.

Asteroids are generally larger chunks of rock that come from the asteroid belt located between the orbits of Mars and Jupiter.

Comets are asteroid-like objects covered with ice, methane, ammonia, and other compounds that develop a fuzzy, cloud-like shell called a coma and sometimes a visible tail whenever they orbit close to the Sun.

Regions Where Comets Are Found Comets are found in two main regions of the cosmos: the Kuiper belt and the Oort cloud. Short-period comets -- comets that frequently return to the solar system -- probably originate from an area called the Kuiper belt. This belt is located within

the solar system's ecliptic plane, beyond the orbit of Neptune. Astronomers found the first object in the Kuiper belt in 1992. Since that discovery many objects have been discovered within that region. These objects are usually small compared with planets. Their size ranges from 10 to 100 kilometers in diameter. Earth's diameter, for example, is 14,000 kilometers.

87. Economic growth is usually coupled with

(a) Deflation
(b) Inflation
(c) Stagflation
(d) Hyperinflation

Ans: b

Exp: My economics professor keeps saying economic growth causes price inflation. Something about this does not make sense to me. If the economy is more productive, then the supply of goods is greater, so would not prices (assuming the money supply is stable) actually drop?

He would argue that it is aggregate demand, because more production means people have more disposable income, which=more consumer spending. As a result, prices rise in response, and in conclusion because agreggate demand grows faster than long-term aggregate supply, economic growth will be coupled with inflation.

88. 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

Ans: a

Exp: Bank rate, also referred to as the discount rate, is the rate of interest which a central bank charges on the loans and advances that it extends to commercial banks and other financial intermediaries. Changes in the bank rate are often used by central banks to control the money supply.

The interest rate that is charged by a country’s central or federal bank on loans and advances to control money supply in the economy and the banking sector. This is typically done on a quarterly basis to control inflation and stabilize the country’s exchange rates. A fluctuation in bank rates triggers a ripple-effect as it impacts every sphere of a country’s economy. For

instance, the prices in stock markets tend to react to interest rate changes. A change in bank rates affects customers as it influences prime interest rates for personal loans.

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

1. Southern hemisphere landmass as compared hemisphere. has less to northern
2. Coriolis force is higher in southern hemisphere, as compared to northern hemisphere
Which of the statements given above isl are correct?

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

Ans: a

Exp: The Westerlies, anti-trades, or Prevailing Westerlies, are the prevailing winds in the middle latitudes between 30 and 60 degrees latitude, blowing from the high pressure area in the horse latitudes towards the poles. These prevailing winds blow from the west to the east, and steer extratropical cyclones in this general manner.

The Westerlies are strongest in the winter hemisphere and times when the pressure is lower over the poles, while they are weakest in the summer hemisphere and when pressures are higher over the poles. The Westerlies are particularly strong, especially in the southern hemisphere, where there is less land in the middle latitudes to cause the flow pattern to amplify, or become more north-south oriented, which slows the Westerlies down. The strongest westerly winds in the middle latitudes can come in the Roaring Forties, between 40 and 50 degrees latitude.

the Earth were a non-rotating planet, solar heating would cause winds across the mid-latitudes to blow in a poleward direction, away from the subtropical ridge. However, the Coriolis effect caused by the rotation of Earth causes winds to steer to the right of what would otherwise be expected across the Northern Hemisphere, and left of what would be expected in the Southern Hemisphere. This is why winds across the Northern Hemisphere tend to blow from the southwest, but they tend to be from the northwest in the Southern Hemisphere.

The Westerlies can be particularly strong, especially in the Southern Hemisphere, where there is less land in the middle latitudes to cause the progression of west to east winds to slow down. In the Southern hemisphere, because of the stormy and cloudy conditions, it is usual to refer to

the Westerlies as the Roaring Forties, Furious Fifties and Shrieking Sixties according to the varying degrees of latitude.

90. 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 Kraisthmus between the Gulf of Siam and Andaman Sea
Which of the statements given above isl are correct?

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

Ans: c

Exp: The Strait of Malacca is a narrow, 805 km (500 mi) stretch of water between the Malay Peninsula (Peninsular Malaysia) and the Indonesian island of Sumatra. It is named after the Malacca Sultanate that ruled over the archipelago between 1414 to 1511.

The maximum size of a vessel that can make passage through the Strait is referred to as Malaccamax. The strait is not deep enough (at 25 metres or 82 feet) to permit some of the largest ships (mostly oil tankers) to use it. A ship that exceeds Malaccamax will typically use the Lombok Strait, Makassar Strait, Sibutu Passage and Mindoro Strait instead.

The Kra Isthmus is the narrow land bridge which connects the Malay Peninsula with the mainland of Asia, and popularly named "The Devil's Neck".

The Thai Canal (formerly known as Kra Canal) is a proposed canal from the Indian Ocean to the South China Sea via southern Thailand.

91. 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

Ans: c

Exp: Benefits of antioxidants:
Destroy the free radicals that damage cells.
Promote the growth of healthy cells.
Protect cells against premature, abnormal aging.
Help fight age-related macular degeneration.
Provide excellent support for the body's immune system, making it an effective disease preventative.

92. 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

Ans: c

Exp: The earliest production in the Indus Valley Civilization was characterised by well planned cities and houses where religion did not seem to play an active role. The presence of drainage systems and public baths showed advanced standards of hygiene and sanitation and ingenious planning.

Some Indus valley seals show swastikas, which are found in other religions (worldwide) , especially in Indian religions such as Hinduism, Buddhism, Jainism. The earliest evidence for elements of Hinduism are alleged to have been present before and during the early Harappan period. Phallic symbols interpreted as the much later Hindu Shiva lingam have been found in the Harappan remains.

Swastika Seals from the Indus Valley Civilization preserved at the British Museum.Many Indus valley seals show animals. One motive shows a horned figure seated in a posture reminiscent of the Lotus position and surrounded by animals was named by early excavators Pashupati (lord of cattle), an epithet of the later Hindu gods Shiva and Rudra.

In view of the large number of figurines found in the Indus valley, some scholars believe that the Harappan people worshipped a Mother goddess symbolizing fertility, a common practice

among rural hinduists even today. However, this view has been disputed by S. Clark who sees it as an inadequate explanation of the function and construction of many of the figurines.

There are no religious buildings or evidence of elaborate burials. If there were temples, they have not been identified.

The people of Indus prospered on the foundations of an agriculture based system of irrigation and fertility, maintained by silt-bearing floods . Wheat and six-row barley were grown, as were melon seeds, oil crops like sesame and mustard, and dates (petrified dates have been found in the excavation of the Valley). As for vegetables, the only apparent source was the field pea. The earliest traces of cotton known anywhere in the world have been found in the Valley. The people of Indus may have cultivated rice on the west coast, though this is not exactly certain (there is not enough evidence to prove this statement entirely true). They domesticated a number of animals from local wild species, including dogs and cats, zebu or the humped cattle, short-horns and buffaloes, and possibly pigs, camels, horses and asses (the later three used as transport). They may have domesticated the elephant too, but the evidence for this is also vague; the elephant was represented on several of the excavated Indus seals and its ivory was used for crafts .

93. 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

Ans: c

Exp: Rice-wheat cropping system (RWCS) is the major cropping system in the Indo-Gangetic Plain (IGP) of India. Major rice-wheat growing states are Punjab, Haryana, Uttar Pradesh, Himachal Pradesh, Bihar, and West Bengal. However, majority of the 10.5 m ha rice-wheat cropping system are concentrated in Punjab, Haryana and western Uttar Pradesh

The four major agroclimatic regions (ACR) of the IGP in India are : (i) Lower Gangetic Plain, (ii) Middle Gangetic Plain, (iii) Upper Gangetic Plain, and (iv) Trans-Gangetic Plain.

The Lower Gangetic plains moist deciduous forests is a tropical moist broadleaf forest ecoregion of Bangladesh and eastern India. The ecoregion covers an area of 254,100 square kilometers (98,100 sq mi), covering most of Bangladesh and the Indian states of West Bengal,

Bihar, and Tripura, and extending into adjacent portions of Assam, Uttar Pradesh, and Orissa states.

The major crops of West Bengal and Bangladesh is Rice and Jute. Almost all the Jute production is in West Benagl and Bangladesh.

94. What could be the main reasonlreasons 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

Ans: a

Exp: The Mediterranean climate (Köppen climate classification: Csa) is a particular variety of the subtropical climate found around the Mediterranean Sea, the largest area where this climate type is found, but it also prevails in much of California, in parts of Western and South Australia, in southwestern South Africa, in isolated regions of Central Asia, and in parts of central Chile. The climate is characterized by warm to hot, dry summers and mild to cool, wet winters. Mediterranean climate zones are associated with the five large subtropical high pressure cells of the oceans, the Azores High, South Atlantic High, North Pacific High, South Pacific High, and the Indian Ocean High which cause the dry summers.

Examples of Subtropical semi-desert/desert climate around the world include

North Africa: Algiers, Algeria; Alexandria, Egypt; Casablanca, Morocco; Tripoli, Libya; Tunis, Tunisia;
Mainland China: Nanjing, Shanghai, Hangzhou, Hefei, Nanchang, Fuzhou, Xiamen, Shenzhen, Guangzhou, Nanning, Changsha, Wuhan, Chongqing, Chengdu

95. 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

Ans: a

Exp: Closest to the ground is the troposphere. It contains the largest mass of air of the total atmosphere. This is where all weather phenomena occurs, with some turbulence extending into the lower stratosphere. Also, 99% of the water vapor in the atmosphere is contained in the troposphere.

The stratosphere extends from approximately 10,000 m (10 km) to 50,000 m (50 km). The lower part of the stratosphere is where jet aircraft fly to avoid the weather turbulence of the troposphere. The temperature remains fairly constant in the lower stratosphere, but increases to a maximum of approximately -1°C at the stratopause.

large power of vertical wind disturbances (VWD) below critical level of 20 km - from comparison of vertical wind activity and horizontal wind close to surface: gravity waves are main source for VWD

96. 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 I and 2
(d) Neither 1 and 2

Ans: c

Exp: Latitudinal gradient
Rapoport's rule and Latitudinal gradients in species diversity

Species richness increases from high latitudes to low latitudes.
The peak of the species richness is not at Equator. It is deduced that the peak is between 20-30°N. The tropics fall within this range which is about 24.3 degrees north and south and this attests to the fact that species richness and biodiversity is highest here. The gradient of species

richness is asymmetrical about the equator. The level of species richness increase rapidly from the north region but decrease slowly from the equator to southern region.

Factors affecting species richness

There is a strong inverse correlation in many groups between species richness and latitude: the farther from the equator, the fewer species can be found, even when compensating for the reduced surface area in higher latitudes due to the spherical geometry of the earth. Equally, as altitude increases, species richness decreases, indicating an effect of area, available energy, isolation and/or zonation (intermediate elevations can receive species from higher and lower).

97. The Brahmaputra, Irrawady and Mekong rivers originate in Tibet and flow it 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

Ans: d

Exp: “It is the largest river on the Tibetan plateau, originating from a glacier near Mt. Kailash. It is considered to be the highest river on earth with an average altitude of 4,000 meters. It runs 2,057 kilometers in Tibet before flowing into India, where it becomes the Brahmaputra. One of its interesting characteristics is the ‘SHARP U-TURN’ it takes at the proximity of Mt. Namcha Barwa (7,782 meters) near the Indian border.

The Yarlung Zangbo Grand Canyon or simply the Tsangpo Canyon or Tsangpo Gorge, along the Yarlung Tsangpo River in Tibet, China, is regarded by some as the deepest canyon in the world, and is slightly longer than the Grand Canyon, making it one of the world's largest. The Yarlung Tsangpo River, usually just called "Zangbo" (also spelled "Tsangpo", meaning "purifier"), originates from Mount Kailash and running east for about 1700 km drains a northern section of the Himalayas before its enters the gorge near Pe, Tibet. The canyon has a length of about 150 miles as the gorge bends around Mount Namcha Barwa (7782 m) and cuts its way through the eastern Himalayan range. The whole canyon has length 313.7 miles or 504.9 km. Its waters drop from 3,000 m near Pe to about 300 m at the end of the gorge. After this passage the river enters Arunachal Pradesh, India, and eventually becomes the Brahmaputra

98. A state in India has the following characteristics:

1. Its northern part is arid and semiarid
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

Ans: b

Exp: West India

The region consists of the predominantly arid to semi-arid region of Saurashtra and Kutch in the North. The region South of that of Cambay and Southern Gujarat makes the northern semi arid region and the southern humid region submerge, though this region itself being the humid to sub humid.

Gujarat is the main producer of tobacco, cotton, and groundnuts in India. Other major food crops produced are rice, wheat, jowar, bajra, maize, Tur, and gram. Gujarat has an agricultural economy; the total crop area amounts to more than one-half of the total land area.

99. 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

Ans: b

Exp: A virtual private network (VPN) is a network that uses primarily public telecommunication infrastructure, such as the Internet, to provide remote offices or traveling users access to a central organizational network.

VPNs typically require remote users of the network to be authenticated, and often secure data with encryption technologies to prevent disclosure of private information to unauthorized parties.

100. 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

Ans: c

Exp: Dharma

The key to the individual and social ethics of Hinduism is the conception of Dharma, whose full implications cannot be conveyed by such English words as religion, duty, or righteousness. Derived from a root, which means to support, the word signifies the law of inner growth by which a person is supported in his present state of evolution and is shown the way to future development. A person's Dharma is not imposed by society or decreed by an arbitrary god, but is something with which he is born as a result of his actions in previous lives. Dharma determines a man's proper attitude toward the outer world and governs his mental and physical reactions in a given situation. It is his code of honour.

Rita, Sanskrit ("truth" or "order"), in Indian religion and philosophy, the cosmic order mentioned in the Vedas, the ancient sacred scriptures of India. As Hinduism developed from the ancient Vedic religion, the concept of rita led to the doctrines of dharma (duty) and karma (accumulated effects of good and bad actions). Rita is the physical order of the universe, the order of the sacrifice, and the moral law of the world. Because of rita, the sun and moon pursue their daily journeys across the sky, and the seasons proceed in regular movement. Vedic religion features the belief that rita was guarded by Varuna, the god-sovereign, who was assisted by Mitra, the god of honour, and that the proper performance of sacrifices to the gods was necessary to guarantee its continuance. Violation (anrita) of the established order by

incorrect or improper behaviour, even if unintentional, constituted sin and required careful expiation.