GENERAL STUDIES
2011-A

1/A2011

- 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
Bioasphalt

- Bioasphalt is an asphalt alternative made from non-petroleum based renewal resources
- These sources include 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, dried sewerage effluent and so on.

2/A2011

- 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 combustion at thermal power plant

- Coal thermal power plants are one of the primary sources of air emissions

  Sulphur Dioxide
  Oxides of Nitrogen
  Particulate matter
  Mercury emissions
  Fly ash

- 2016 data: world power generation by Coal- 38.4% Hydro-16.3%, Nuclear Fission- 10.4%

- A thermal power station burns a fossil fuel such as coal or natural gas to produce electricity. Heat energy of combustion is converted into mechanical energy, which then operates an electrical generator

3/A2011

- 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
Geostationary orbit

- A geostationary orbit is also called geosynchronous equatorial orbit (GEO)
- It is a circular geosynchronous orbit
- It is at 35,768 km (22,236 Miles) above Earth's equator
- It follows the direction of Earth's rotation
- This position is a valuable spot for monitoring weather, communications and surveillance.
- At this higher altitude it takes the satellite a full 24 hours to **orbit** the Earth.

Orbits

There are mainly three types of Orbits-
- POLAR
- SUN SYNCHRONOUS
- GEOSYNCHRONOUS

- POLAR ORBIT: is one in which a satellite passes above or nearly above both poles of the body being orbited as Earth, Moon or Sun.
- It has an inclination of very close to 90 degrees to the body's equator.
- A satellite in a polar orbit will pass over the equator at a different longitude on each of its orbits.
- Polar orbits are used for earth-mapping, earth observation, capturing the earth as time passes from one point, reconnaissance satellites and weather satellites

4/A2011

- 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 food grains has steadily decreased in the last five years by about 30%

2. As a consequence of increasing incomes, the consumption patterns of the people have undergone a significant change

3. The food supply chain has structural constraints

Which of the statements given above are correct?

A) 1 and 2 only
B) 2 and 3 only
C) 1 and 3 only
D)1,2 and 3

Ans.: B

High Food Inflation In India

- Rising per capita income and diversification of diet towards **high**-value **food** products like milk, eggs, meat, fish, pulses, vegetables and fruits, have been often cited as the **reason for increased** demand for these commodities.
- In May 2019, food inflation soared to a 33-month high of 7.4% led by a surge in prices of vegetables, cereals, wheat and pulses.
- Economists said the sharp spike in food inflation is not alarming as it is good news for farmers.
- The wholesale food prices have accelerated much more than CPI
- There had been contraction in 2018

5/A2011

- 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

Benefits of knowing gene sequence

- To get information for future care, enabling early identification of risk factors for various health conditions
- Gene sequencing helps to understand how the protein functions in a system
- DNA sequencing is used for gene selection in crops and cloning
- By knowing the gene sequencing medical can be specific in treatment to save time and cost of treatment
- Genomic information has the potential to impact relationships with other family members
- There is fear of discrimination based on genetic information

6/A2011

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

  A) Export

  B) Import

  C) Production

  D) Consumption

Ans.: A
Benefit of foreign tourist coming to India

- We are selling India to Foreigners so it is export
- **Tourism** in **India** is important for the country's economy and is growing rapidly. The World Travel and **Tourism** Council calculated that **tourism** generated ₹16.91 lakh crore (US$240 billion) or 9.2% of **India**'s GDP in 2018 and supported 42.673 million jobs, 8.1% of its total employment.
- In 2017, impact of Travel & **Tourism**, the sector is shown to account for 10.4% of global **GDP** and 313 million jobs, or 9.9% of total employment
- The Government of **India** is working to achieve 1 per cent **share** in **world's** international **tourist** arrivals by 2020 and 2 per cent **share** by 2025.

Country visits India most

- Canada
- Japan
- China
- Malaysia
- Sri Lanka
- United Kingdom
- United States of America
- Bangladesh. Bangladesh accounted for the highest proportion of overseas arrivals to India with 16.6 per cent of 670,000 tourists.

Ans.:
Foreign Tourists

- **India** ranks 38th country in the world for **foreign** tourists and Chennai, Delhi, Mumbai and Agra **are** the **most visited** cities of **India** by **foreign** travellers and tourists.

- Best destinations in India
  Goa, Agra, Delhi, Hampi, Manali, Ladakh
  Pushkar, Madurai, Udaipur, Alleppey, Srinagar
  Rishikesh, Jaisalmer, Ahmedabad, Khajuraho,
  Aurangabad

- **Tourism** has become an **important** sector that has an impact on development of country **economy**. The main benefits of **tourism** are income creation and generation of jobs. For many regions and countries it is the most **important** source of welfare.

7/A2011

- 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
Microbial Fuel Cells

- A microbial fuel cell (MFC), or biological fuel cell, is a bio-electrochemical system that drives an electric current by using bacteria and mimicking bacterial interactions found in nature.
- Microbial fuel cells work by allowing bacteria to do what they do best, oxidize and reduce organic molecules. Microbes at the anode oxidize the organic fuel generating protons which pass through the membrane to the cathode, and electrons which pass through the anode to an external circuit to generate a current.
- Bacteria can extract electrons from their food sources such as organic materials and feed them into an electrical circuit to generate power.
- Microbial fuel cells may help reduce environmental contaminants such as wastewater, reduce atmospheric carbon dioxide by using it to rebuild fuels, and may potentially provide a renewable energy source
- The Bacteria in our Gut Produce Electricity. Some bacteria, like Listeria monocytogenes, can generate electricity. These bacteria transport electrons through the cell wall into the surrounding environments, with help from flavin molecules.
- Bacteria can obtain energy and nutrients by performing photosynthesis, decomposing dead organisms and wastes, or breaking down chemical compounds. Bacteria can obtain energy and nutrients by establishing close relationships with other organisms, including mutualistic and parasitic relationships

Ans.: C
Electricity in our cells

- Electricity is everywhere, even in the human body. Our cells are specialized to conduct electrical currents. ... The elements in our bodies, like sodium, potassium, calcium, and magnesium, have a specific electrical charge. Almost all of our cells can use these charged elements, called ions, to generate electricity.

- The average human, at rest, produces around 100 watts of power. This equates to around 2000 kcal of food energy, which is why your recommended daily intake of calories is around 2000 kcal.

- Respiration occurs within the cells of plants and animals, normally generating 38 ATP molecules (as energy) from the oxidation of 1 molecule of glucose.

8/A2011

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

A) It is a massive investment by the Government in manufacturing sector to ensure the supply of goods to meet the demand surge caused by rapid economic growth

B) It is an intense affirmative action of the Government to boost economic activity in the country

C) It is Government's intensive action on financial institutions to ensure disbursement of loans to agriculture and allied sectors to promote greater food production and contain food inflation
D) It is extreme affirmative action by the Government to pursue its policy of financial inclusion

Ans.: B
Fiscal stimulus

- **Fiscal stimulus** refers to increasing government consumption or transfers or lowering taxes.

- An economic **stimulus** is the use of monetary or **fiscal** policy changes to kickstart growth during a recession. Governments can accomplish this by using tactics such as lowering interest rates, increasing government spending and quantitative easing, to name a few.

- Over the course of a normal business cycle, governments may try to influence the pace and composition of economic growth using various tools at their disposal.

9/A2011

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

A) Presence of prominent tropospheric turbulence and inflow of chlorofluorocarbons

B) Presence of prominent polar front and stratospheric clouds and inflow of chlorofluorocarbons

C) Absence of polar front and stratospheric clouds, and inflow of methane and chlorofluorocarbons

D) Increased temperature at polar region due to global warming

Ans.: B
Ozone hole in the Antarctic region

- The severe depletion of the Antarctic ozone layer known as the “ozone hole” occurs because of the special atmospheric and chemical conditions that exist there and nowhere else on the globe.
- The very low winter temperatures in the Antarctic stratosphere cause polar stratospheric clouds (PSCs) to form.
- There are more ice crystals when it is most cold. Antarctica is colder than the Arctic circle because the ratio of land to water is higher. Therefore ozone depletion over the South Pole is greater than ozone depletion over the North Pole.

10/A2011

- Consider the following actions which the Government can take:

  1. Devaluing the domestic currency
  2. Reduction in 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.: D
How to reduce current account deficit

- The **current account deficit** is a measurement of a country's trade where the value of the goods and services it imports exceeds the value of the products it exports.
- The **current account** represents a country's foreign transactions and, like the capital **account**, is a component of a country's balance of payments (BOP).
- Devaluing currency will improve exports as the exports will become cheaper
- FDI will bring in funds to the country so it will fill the gap between value in exports and imports.

11/A2011

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

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

Select the correct answer using the codes given below:

A) 1 only
B) 1 and 2 only
C) 2 and 3 only
D) 1,2 and 3

Ans.: D
Seventy-third Amendment Act, 1992

- 73rd Amendment Act, 1992 came into force on 22.4.1993
- It created a uniform three-tier structure of Panchayati Raj at the district, block/mandal and village levels, provides transfer of responsibilities and tax powers from the state government to the gram panchayats.
- This amendment implements the article 40 of the Directive Principles of State Policy which says that "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"
- The 73rd Amendment 1992 added a new Part IX to the constitution titled "The Panchayats" covering provisions from Article 243 to 243(O); and a new Eleventh Schedule covering 29 subjects within the functions of the Panchayats

12/A2011

- 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
Bhitarkanika National Park

- The Bhitarkanika Wildlife Sanctuary is one of India's biggest estuarine crocodile habitats and a major coastal eco-system. It was declared as a National Park because of its ecological, faunal, floral, geomorphological and zoological association and importance and for the purpose of protection in 1998. In August 2002, it was designated as the second Ramsar site (i.e. Wetland of International importance).
- It is a unique area with huge biodiversity as it covers different ecosystems such as the landmass, tidal waterbodies of the deltaic region, estuaries and territorial waters of the Bay of Bengal along with their associated flora and fauna.
- The deltaic region formed by the alluvial deposits of river Brahmani, Baitarani and Dhamara (Bhitarkanika) and the Mahanadi deltaic area, comprising of about 3000 Sq. Km. forms the proposed Bhitarkanika Biosphere Reserve. This deltaic region is a unique bioclimatic zone in a typical geographic situation in the coastal region of Bay of Bengal. It is located in the Kendrapara District of the State of Odisha.
- The Bhitarkanika Wildlife Sanctuary is one of India's biggest estuarine crocodile habitats and a major coastal eco-system.
- Bhitarkanika's famous Gahirmatha Coast finds a prominent place in the turtle map of the world because of the distinction of having one of world's largest nesting and breeding congregation of Olive Ridley Sea turtles.

Rivers of Odisha

- The "Gift of Six Rivers" or the "Hexadeltaic region", major part of the region is formed by deltas of the six major rivers i.e. the Mahanadi, the Brahmani, the Budhabalanga, the Subarnarekha, the Baitarani, and the Rushikulya.

- RIVER MAHANADI is the major river of ODISHA and the sixth largest river in India.

- The Mahanadi rises in a pool, 6 km from Pharsiya village near Nagri Town in Raipur district of Chhattisgarh state at an elevation of 457 m. The total length of the river form origin to its outfall into Bay of Bengal is 851 km of which 357 km lies in Chhattisgarh and 494 km in Odisha.

13/A2011

- 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’, ‘C’, given above is correct in this context

Ans.: C
Base-effect Inflation

- The **Base effect** relates to **inflation** in the corresponding period of the previous year, if the **inflation** rate was too low in the corresponding period of the previous year, even a smaller rise in the Price Index will arithmetically give a high rate of **inflation** now.

- The **base effect** is the distortion in a monthly **inflation** figure that results from abnormally high or low levels of **inflation** in the year-ago month. A **base effect** can make it difficult to accurately assess **inflation** levels over time. It diminishes over time if **inflation** levels are relatively constant.

14/A2011

- India is regarded as a country with “Demographic Dividend”. This is due to

  A) Its high population I 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
Demographic Dividend

- **Demographic dividend** refers to the growth in an economy that is the result of a change in the age structure of a country's **population**. The change in age structure is typically brought on by a decline in fertility and mortality rates.

- **Demographic dividend**, as defined by the United Nations Population Fund (UNFPA) means, "the economic growth potential that **can** result from shifts in a population's age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of the population (14 and younger).

- Demographic dividends are occurrences in a country that enjoys accelerated economic growth that stems from the decline in fertility and mortality rates. A country that experiences low birth rates in conjunction with low death rates receives an economic dividend

15/A2011

- 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 gasses 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
Carbon Credits

- A **carbon credit** is a permit or certificate allowing the holder, such as a company, to emit **carbon** dioxide or other greenhouse gases. The **credit** limits the emission to a mass equal to one ton of **carbon** dioxide. The ultimate goal of **carbon credits** is to reduce the emission of greenhouse gases into the atmosphere.

- **Carbon credits** are a highly regulated medium of exchange **used to** 'offset', or neutralize, **carbon** dioxide emissions. A single **carbon** credit generally represents the right to emit one metric ton of **carbon** dioxide or the equivalent mass of another greenhouse gas.

- Each offset **is** equal to one metric ton of **carbon** dioxide and **sells for** approximately $11 to $14 per **credit**, depending on market rates

16/A2011

- Which one of the following is not a feature of “Value Added Tax”?

A) It is multi-point destination-based system of taxation

B) It is a tax levied on value addition at each stage of transaction in the production-distribution chain

C) It is a tax on the final consumption of goods or services and must ultimately be borne by the consumer

D) It is basically a subject of the Central Government and the State Governments are only a facilitator for its successful implementation

Ans.: D
Value added tax

- VAT- a tax on the amount by which the value of an article has been increased at each stage of its production or distribution.
- AVAT is levied on products at every point of sale where value has been added, starting from raw material and at all stages and going all the way to final retail price.
- Ultimately, the consumer pays the VAT
- Buyers at earlier stages of production receive reimbursements for the previous VAT they've paid
- The United States holds the distinction of being the only member of the Organisation for Economic C0-operation and Development (OECD) without a tax.
- VAT is for state and CENVAT is for centre.

17/A2011

- 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
Closed Economy

- The **closed economy** is self-sufficient, which means no imports come into the country and no exports leave the country. The purpose of a **closed economy** is to provide domestic consumers with everything they need from within the country's borders.
- Country doesn’t have any sort of economic relation with the rest of the world
- It doesn’t borrows from foreign countries nor lends to the foreign countries
- An economy is said to be an open economy when there is free flow of factors of production and there is trade among whatever no. Of nations. **For example:** The economy of America

18/A2011

- 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
Bark of a tree

- When a **tree** has been damaged by **removing a ring of bark**, the **tree** may die depending on how completely it was girdled. ... The reason for damage due to girdling is that the phloem layer of tissue just below the **bark** is responsible for carrying food produced in the leaves by photosynthesis to the roots.

- The sap, or food, produced by the leaves cannot reach other parts of the **tree**. The **tree slowly dies** due to lack of nutrients and moisture. It may take up to one year for the **tree** to **die**.

19/A2011

- 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 for the promotion of trade.

Ans.: A
"New START" Treaty

- New START (Strategic Arms Reduction Treaty is a nuclear arms reduction treaty between the US 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.
- New START replaced the Treaty of Moscow (SORT) which was due to expire in December 2012.
- Under terms of the treaty, the number of strategic nuclear missile launches will be reduced to half.

20/A2011

- 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 and 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
Western Ghats

- The **Western Ghats**, also known as Sahyadri (Benevolent Mountains), are a mountain range that covers an area of 140,000 square kilometres
- The range **starts** near the Songadh town of Gujarat, south of the Tapti river, and runs approximately 1,600 km (990 mi) through the states of Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu ending at Marunthuvazh Malai, at Swamithope, near the southern tip of India.
- It spread across six **states** of the **Western Ghats** region namely, Gujarat, Maharashtra, Goa, Karnataka, Kerala
- The **Western Ghats**, receive extremely heavy rainfall from the southwest monsoon,
- The confluence of the Eastern and the Western Ghats is at Biligirirangan Hills in Karnataka. Anamudi 2,695 metres in Kerala the highest peak in Western Ghats. Mullayanagiri is the highest peak in Karnataka 1,950 meters. The smaller ranges of the Western Ghats include the Cardamom Hills and the Nilgiri Hills.
- Queen of western ghats - Periyar Tiger Reserve.
- The Western Ghats perform important hydrological and watershed functions. Approximately 245 million people live in the peninsular Indian states that receive most of their water supply from rivers originating in the Western Ghats. Thus, the soil and water of this region sustain the livelihoods of millions of people.

Western Ghats

The Western Ghats	The Eastern Ghats
The Western Ghats lie on the western margin of the Deccan Plateau.	The Eastern Ghats lie on the eastern margin of the Deccan Plateau.
The Western Ghats are higher in elevation. Their average elevation is from 900 to 1600 metres.	The Eastern Ghats are lower in elevation. Their average elevation is 600 metres.
They have a continuous chain of mountains and can be crossed through passes only.	The mountain chains are not continuous and are denuded by the rivers which flow into the Bay of Bengal.
No major river has cut across them.	They have been cut across by major rivers like the Godavari, Mahanadi, Krishna and Kaveri.

Hotspots of Biodiversity

- Biodiversity hotspots are defined as regions “where exceptional concentrations of endemic species are undergoing an exceptional loss of habitat”. The concept of biodiversity hotspots was developed by the Norman Myers in 1988 when he identified that the tropical forest losing its plants species as well as habitat.

- A biodiversity hotspot is a biogeographic region that is both a significant reservoir of biodiversity and is threatened with destruction. The term biodiversity hotspot specifically refers to 25 biologically rich areas around the world that have lost at least 70 percent of their original habitat.

Hotspots in India

- India has four biodiversity hotspots, i.e., Eastern Himalayas, Western Himalayas, Western Ghats and Andaman and Nicobar Islands.
- Currently, 35 biodiversity hotspots have been identified, most of which occur in tropical forests. They represent just 2.3% of Earth's land surface, but between them they contain around 50% of the world's endemic plant species and 42% of all terrestrial vertebrates.
- The Cape Floristic Region (CFR) has been called the world's 'hottest hot-spot' for plant diversity and endemism. ... The CFR is the most remarkable of the world's five Mediterranean climate regions; regions that cover only 2% of the earth's land area, but harbor 16% of the world's plant species.

First sanctuary in India

- The first sanctuary or national park established in India is Manas National Park or Manas Wildlife Sanctuary which is many in one -a national park, UNESCO Natural World Heritage site, a Project Tiger reserve, an elephant reserve and a biosphere reserve in Assam, India.

- Keoladeo Ghana Bird Sanctuary (Formerly Bharatpur Bird Sanctuary) located in Rajasthan is the first bird sanctuary in India. Keoladeo Ghana Bird Sanctuary (or Bharatpur National Park) was created around 250 years ago and was named after a Shiva (Keoladeo) temple located within the forest by the Rajput King Maharaja Suraj Mal.

- The oldest water bird sanctuary in India is the Vedanthangal Bird Sanctuary located in Tamil Nadu. It was established in 1936. The protected area is the home of above 1000 species of birds.

21/A2011

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

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

  Which of the statements given above is/are correct?

  A) 1 and 2
  B) 2 only
  C) 2 and 3
  D) 3 only

Ans.: B

How Carbon Dioxide affects

- **Carbon dioxide** emissions impact human health by displacing oxygen in the atmosphere. Breathing becomes more difficult as **carbon dioxide** levels rise. In closed areas, high levels of **carbon dioxide** can lead to health complaints such as headaches.

- **Carbon dioxide** is a naturally occurring greenhouse gas. An increase in **the** amount of **carbon dioxide** creates an overabundance of greenhouse gases that trap additional heat. This trapped heat leads to melting ice caps and rising ocean levels, which **cause** flooding.

- Higher concentrations of Carbon Dioxide can affect respiratory function and cause excitation followed by depression of the central nervous system. A high concentration can displace oxygen in the air.

22/A2011

- 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 only
  D) 3 only

Ans.: B

Marine Upwelling Zones

- Upwelling is a process in which deep, cold water rises toward the surface. Upwelling occurs in the open ocean and along coastlines
- The reverse process, called “downwelling” also occurs when wind causes surface water to build up along a coastline and the surface water eventually sinks toward the bottom.
- The deeper water that rises to the surface during upwelling is rich in nutrients. These nutrients “fertilize” surface waters, encouraging the growth of plant life, including phytoplankton. Upwelling can also play an important role in the movement of marine animals.

23/A2011

- 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 visibility

  C) the rain forest species are slow growing

  D) exotic species invade the fertile soil of rain forest

Ans.: A
Tropical Rain Forest

- The soil of rain forest is deficient in nutrients.
- Rainforests are forests characterized by high and continuous rainfall (98-177 inch/year)
- 40-75% of all biotic species are indigenous to rainforest
- There are many millions of species of plants, insects and microorganisms still undiscovered in tropical rain forests
- Rainforests are responsible for 28% of the world's oxygen turnover.
- The undergrowth in rainforest may be restricted by poor penetration of sunlight to the ground level.

24/A2011

- 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 confluence of different bio-geographical zones

  C) Exotic and invasive species have not been introduced in this region

  D) it has less human interference

Ans.: B
Himalayan Range Diversity

- The Himalayan Range is Very Rich in Species Diversity:
- The amount of yearly rainfall increases from west to east along the southern front of the range. This diversity of altitude, rainfall and soil conditions combined with the very high snow line supports a variety of distinct plant and animal communities.
- It is a confluence of different bio-geographical zones
- The flora and fauna of the Himalayas vary with climate, rainfall, altitude, and soils. The climate ranges from tropical at the base of the mountains to permanent ice and snow at the highest elevations.

25/A2011

- 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. Custom's Act, 1962
  4. Indian Forest Act, 1927

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

  A) 1 and 3 only
  B) 2,3 and 4 only
  C) 1,2,3 and 4
  D) None of the above Acts

Ans.: C

Import and Export (Control) Act, 1947

- Under export and import Act, there is a negative list under which restricted items are placed.
- The import and export of restricted items is monitored and controlled
- Some of the items are completely prohibited or allowed under licence.
- The list includes wildlife, exotic birds, wild flora, beef, human skeletons, tallow, fat oils of animal origin, wood and wood products.
- Export and import of these have huge impact on biodiversity

Mining and Mineral Development (Regulation) Act, 1957

- The Mines and Minerals Act is an Act of the Parliament of India enacted to regulate the mining sector in India. It was amended in 2015 and 2016.
- This act forms the basic framework of mining regulation in India.
- This act is applicable to all mineral except coal, minor minerals and atomic minerals.
- It details the process and conditions for acquiring a mining licence in India. Mining minor minerals comes under the purview of state governments. River sand is considered a minor mineral.
- For mining and prospecting in Forest land, prior permission is needed from the Ministry of Environment and Forests.

Custom's Act 1962

- The **Customs Act**, **1962** is the basic statute which governs entry or exit of different categories of vessels, aircrafts, goods, passengers etc., into or outside the country. The **Act** extends to the whole of the India.
- **Custom** Duty is an indirect tax, imposed under the **Customs Act** formulated in **1962**. The **Customs Act**, **1962** is the basic statute which governs entry or exit of different categories of vessels, aircrafts, goods, passengers etc., into or outside the country
- **Custom duties** are levied almost universally on all goods imported into the country. Import **duties** are further divided into basic **duty**, additional **customs duty**, true countervailing **duty**, protective **duty**, education cess and anti-dumping **duty** or safeguard **duty**.
- Custom duties are levied almost universally on all goods imported into the country.
- Export duties are levied on a few goods as specified under the Second Schedule.
- Import duties are not levied on a few items including lifesaving drugs/equipment, fertilizers, food grains etc.
- Import duties are further divided into basic duty, additional customs duty, true countervailing duty, protective duty, education cess and anti-dumping duty or safeguard duty.

Custom Duty

- **Basic Custom Duty:** Basic custom duty is applicable on imported items that fall under the ambit of Section 12 of the Customs Act, 1962. These duties are levied at the rates prescribed in First Schedule to Customs Tariff Act, 1975, under the terms specified in Section 2 of the act. The levied rates may be standard or preferential as per the country of import.
- **Additional Customs Duty (Countervailing Duty (CVD)):**This duty is levied on imported items under Section 3 of Customs Tariff Act, 1975. It is equal to the Central Excise Duty that is levied on similar goods produced within India. This duty is calculated on the aggregate value of goods including BDC and landing charges.
- **Protective Duty:** Protective duty may be imposed to shield the domestic industry against imports at a rate recommended by the Tariff Commissioner.
- **Anti-dumping Duty:** Anti-dumping duty may be imposed if the good being imported is at below fair market price, and is limited to the difference between export and normal price (dumping margin).
- **Safeguard Duty:** Safeguard duty is levied if the government feels that a sudden increase in exports can potentially damage the domestic industry.

Indian Forest Act 1927

- Reserved Forest is notified under section 20 of the Indian Forest Act, 1927
- It is within power of a State Government to issue a preliminary notification under section 4 of the Act declaring that it has been decided to constitute such land, as specified in a Schedule with details of its location, area and boundary description, into a Reserved Forest.

26/A2011

- 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
Karl Marx- Class Struggle

- Class struggle happens when the rich owner pay the worker to make things for them to sell. The workers have no say in their pay or what things they make, since they cannot live without a job or money. Karl Marx saw that the workers had to work without any say in the business.

- This results into class conflict

27/A2011

- A layer in the Earth's atmosphere called Ionosphere facilities 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 is/are correct?

  A) 1 only
  B) 2 only
  C) Both 1 and2
  D) Neither 1 nor 2

Ans.: D
Ionosphere

- The ionosphere is defined as the layer of the Earth's atmosphere that is ionized by solar and cosmic radiation. It lies 75-1000 km above the Earth.
- The Earth's radius is 6370 km, so the thickness of the ionosphere is quite tiny compared with the size of Earth.
- The ionosphere is the part of the atmosphere that is ionized by solar radiation. It plays an important part in atmospheric electricity and forms the inner edge of the magnetosphere. It has practical importance because, among other functions, it influences radio propagation to distant places on the Earth.
- Ionosphere has "free electrons" and they are negatively charged. The molecules that lose the electrons become positively charged. The name for charged molecules or atoms is "ions" and these positive ions are what the ionosphere is named after.
- The ionosphere is a very active part of the atmosphere, and it grows and shrinks depending on the energy it absorbs from the Sun.
- Ionosphere and thermosphere can overlap
- The air above the surface of Earth is positively charged, while the Earth's surface charge is negative.

Ionosphere

- Microwaves have a long wavelength, though not as long as radio waves. The Earth's atmosphere is transparent to some wavelengths of microwave radiation, but not to others. The longer wavelengths (waves more similar to radio waves) pass through the Earth's atmosphere more easily than the shorter wavelength microwaves.

- In radio communication, skywave or skip refers to the propagation of radio waves reflected or refracted back toward Earth from the ionosphere, an electrically charged layer of the upper atmosphere.

Radio Wave Propagation

- Radio propagation is the behavior of radio waves as they travel from one point to another
- Like light waves radio waves are affected by the phenomena of reflection, refraction, diffraction, absorption polarization and scattering.
- At lower frequencies in the MF, LF, and VLF bands, due to diffraction radio waves can bend over obstacles like hills, and travel beyond the horizon as surface waves which follow the contour of the Earth. These are called ground waves. AM broadcasting stations use ground waves to cover their listening areas.
- AM broadcasting stations use ground waves to cover their listening areas.
- Medium wave and shortwave frequencies (MF and HF bands) radio waves can refract from a layer of charged particles high in the atmosphere, called the Ionosphere
- Radio waves transmitted at an angle into the sky can be reflected back to Earth beyond the horizon, at great distances even transcontinental distances. This is called skywave propagation. It is used by amateur radio operators to talk to other countries.

Human energy

- The average human, at rest, produces around 100 watts of power. This equates to around 2000 kcal of food energy, which is why your recommended daily intake of calories is around 2000 kcal.

- Electricity is everywhere, even in the human body. Our cells are specialized to conduct electrical currents. ... The elements in our bodies, like sodium, potassium, calcium, and magnesium, have a specific electrical charge. Almost all of our cells can use these charged elements, called ions, to generate electricity.

28/A2011

- 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 capital

  B) FII helps in increasing capital availability in general, while FDI only targets specific sectors

  C) FDI flows only in to the secondary market, while FII targets primary market

  D) FII is considered to be more stable than FDI

Ans.: B
FDI vs FII

- FDI is an investment that a parent company makes in a foreign country. On the contrary, FII is an investment made by an investor in the markets of a foreign nation. The FDI flows into the primary market, while the FII flows into secondary market. FII can enter the stock market easily and also withdraw from it easily.

- FDI flow is considered more stable as it is a long-term investment by corporates generating jobs and income in the country. FII inflow into the stock market, although helps stabilise the rupee, is considered hot money that can leave suddenly. This tends to have a destabilising effect on the currency and the economy.

- A foreign institutional investor (FII) is an investor or investment fund registered in a country outside of the one in which it is investing. Institutional investors most notably include hedge funds, insurance companies, pension funds, and mutual funds.

- Lasting interest differentiates FDI from foreign portfolio investments, where investors passively hold securities from a foreign country. A foreign direct investment can be made by obtaining a lasting interest or by expanding one's business into a foreign country.

- Amazon opening a office in Hyderabad is an example of FDI

Foreign Investment

- Foreign direct investment (FDI) is an investment from a party in one country into a business or corporation in another country with the intention of establishing a lasting interest.
- International investment or capital flows fall into four principal categories: commercial loans, official flows, foreign direct investment (FDI), and foreign port folio investment (FPI). Commercial loans, which primarily take the form of bank loans issued to foreign businesses or governments.

29/A2011

- 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
Bt-brinjal

- The genetically modified **brinjal** is created by inserting a crystal protein gene (Cry1Ac) from the soil bacterium Bacillus thuringiensis into the genome of brinjal.
- The Bt brinjal has been developed to give resistance against lepidopteron insects, in particular the Brinjal Fruit and Shoot Borer
- Mahyco an Indian seed company based in Jalna, Maharashtra has developed the Bt brinjal.
- On 30 October 2013 with approvals from the ministries of Environment and Forests (MoEF) and Agriculture (MoA), the Bangladesh Agricultural Research Institute (BARI) received permission to release four varieties of Bt brinjal in time for the 2013–2014 growing season: Bt Uttara, Bt Kajla, Bt Nayantara, and Bt ISD006.
- Many controversies surround the development and release of genetically modified foods ranging from human safety and environmental impacts to ethical concerns such as corporate control of the food supply and intellectual property rights. The brinjal is an important food crop for India
- In India brinjal production is relatively low with fruit and shoot borer infestation a major constraint to yield.
- Proponents of the technology believe the Bt brinjal will have positive effects for the Indian economy and the health of the farmers.
- With Bt brinjal 42% reduction in use of pesticide and a doubling of the yield is possible.

30/A2011

- With reference to “Aam Admi Bima Yojana”. Consider the following state means:

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.: C
Aam Admi Bima Yojana

- Government of India has approved the merger of Social Security Schemes viz., Aam Admi Bima Yojana (AABY) and Janashree Bima Yojana (JBY).
- The merged scheme is renamed “Aam Admi Bima Yojana” and has come into effect from 01.01.2013.
- The members should be aged between 18 years completed and 59 years nearer birthday and should be BPL or marginally above.
- The premium to be charged initially under the scheme will be ₹ 200/- per annum per member for a cover of ₹ 30,000/-, out of which 50% will be subsidized from the Social Security Fund .

31/A2011

- 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
Brent crude oil

- Brent Crude is extracted from the North Sea and comprises Brent Blend, Forties Blend, Oseberg and Ekofisk crudes (also known as the BFOE Quotation). Brent is the leading global price benchmark for Atlantic basin crude oils. It is used to price two thirds of the world's internationally traded crude oil supplies.

- Brent Crude is a major trading classification of sweet light crude oil that serves as one of the two main benchmark prices for purchases of oil worldwide, the other being West Texas Intermediate. This grade is described as light because of its relatively low density, and sweet because of its low sulphur content.

- Brent is the leading global price benchmark for Atlantic basin crude oils. It is used to price two thirds of the world’s internationally traded crude oil supplies

32/A2011

- 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
Heavy Water role in Nuclear Reactor

- A pressurized heavy-water reactor (PHWR) is a nuclear reactor, commonly using natural uranium as its fuel, that uses heavy water (deuterium oxide D_2O) as its coolant and neutron moderator.
- Heavy water is used in certain types of nuclear reactors, where it acts as a neutron moderator to slow down neutrons so that they are more likely to react with the fissile uranium-235 than with uranium-238, which captures neutrons without fissioning.
- Heavy water is not radioactive. If someone drink it, there will be no effect.
- Heavy water D_2O also called deuterium oxide. Deuterium is an isotope of hydrogen with a mass double that of hydrogen, and oxygen.

33/A2011

- 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 drive 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

Privilege of National minority/15 Point Programme for Minorities

- Launched in 2006 for welfare of religious minorities
- It was based on Sachar Committee Report
- The report has said that minorities, especially Muslims, in the country are often in a worse socio-economic and political condition than communities such as the SCs and STs.
- It pegged the status of minorities on various indicators such as nutrition, health, education etc.
- The programme advocated allocating 15% of plan outlays of welfare schemes identified under the 15 point programme.

34/A2011

- 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
Disability Act

- The Rights of Persons with Disabilities Act, 2016:
- The Act lays stress on non-discrimination, full and effective participation and inclusion in society, respect for difference and acceptance of disabilities as part of human diversity and humanity, equality of opportunity, accessibility, equality between men and women, respect for the evolving capacities of children with disabilities, and respect for the right of children with disabilities to preserve their identities.
- The principle reflects a paradigm shift in thinking about disability from a social welfare concern to a human rights issue.

35/A2011

- With what purpose is the Government of India promoting the concept of ‘Mega Food Parks’?

1. To provide good infrastructure facilities for the food processing industry

2. To increase the processing of perishable items and reduce wastage

3. To provide emerging and ecofriendly 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
Mega Food Parks

- Mega Food Park is a scheme of the Ministry of Food Processing with the aim of establishing a "direct linkage from farm to processing and then to consumer markets" through a network of collection centres and primary processing centres.
- 42 Mega Food Parks are to be set up
- 9 Mega Food Parks have become functional
- Under the scheme farmers, processors and retailers are brought together
- The aim is to maximise value addition, minimized wastage, increased farmer’s income and creation of employment opportunities in rural sectors

36/A2011

- 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
Consolidated fund of India

- All revenues received by the government by way of direct taxes and indirect taxes, money borrowed and receipts from loans given by the government flow into the **Consolidated Fund of India**.
- No expenditure can be made from the fund unless and until the Parliament authorises the withdrawal. Government puts up demands for proposed expenditures
- Some expenditures can be made from the CFI without prior approval of Parliament.
- **Salary** and Allowances of the President, Speaker / Deputy Speaker of Lok Sabha, Chairman/ Deputy Chairman of Rajya Sabha, **Salaries** and Allowances of Supreme Court judges, Pensions of Supreme Court as well as High Court Judges, **Salaries** and Allowances of CAG, Lok Pal.

37/A2011

- 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
Consolidated fund of India

- This **fund** was constituted under **Article** 266 (1) of the Constitution of **India**. All revenues received by the government by way of direct taxes and indirect taxes, money borrowed and receipts from loans given by the government flow into the **Consolidated Fund of India**.

- Tax revenue from personal income tax, corporate income tax, customs and excise duties as well as non-tax revenue such as licence fees, dividends and profits from public sector undertakings etc., received by the Union government as well as all loans raised by issue of treasury bills, internal and external loans etc.

38/A2011

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

- Many people needs little funds but unable to fulfill requirements of Banks
- Microfinance is a category of financial services targeted at individuals and small businesses who lack access to conventional banking and related services.
- Microfinance includes microcredit, the provision of small loans to poor clients; savings and checking accounts; microinsurance; and payment systems.
- It is banking services to poor
- The goal of microfinance is to ultimately give impoverished people an opportunity to become self-sufficient.

39/A2011

- Southeast Asia has captivated the attention of global community over space and time as a geo-strategically 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
Southeast Asia

- **Southeast Asia** is composed of eleven **countries** of impressive diversity in religion, culture and history: Brunei, Burma (Myanmar), Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam.
- Singapore is one of the **most prosperous nations** in the world. City-state. The interesting distinction of being the only **country in Southeast** to have never been taken over by a European power.
- Southeast Asia covers about 4.5 million km^2 (1.7 million mi^2), which is 10.5% of Asia or 3% of earth's total land area. Its total population is more than 655 million, about 8.5% of the world's population.
- The South China Sea issue has emerged as a flash point of conflict between ASEAN and China — and within the group. Four ASEAN countries are claimants to parts of the waterway, while China claims sovereignty over the entire area.
- The South China Sea is also the site of tension between the two largest economies in the world.
- China’s growing clout is unnerving some Southeast Asian countries

40/A2011

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

  1. The food products are not made out of hydrogenated oils
  2. The food products are not made out of animal fats/oil
  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 onlyD) 1,2 and 3

Ans.: C
Trans fat

- Trans fats, or trans-fatty acids, are a form of unsaturated fat. They come in both natural and artificial forms. Natural, or ruminant, trans fats occur in the meat and dairy from ruminant animals, such as cattle, sheep, and goats. They form naturally when bacteria in these animals' stomachs digest grass.
- Trans fats raise bad (LDL) cholesterol levels and lower good (HDL) cholesterol levels.
- Eating trans fats increases risk of developing heart disease and stroke.
- It's also associated with a higher risk of developing type 2 diabetes.

41/A2011

- 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

Mahatma Gandhi National Rural Employment Guarantee Act

- The Mahatma Gandhi National Rural Employment Guarantee Act, earlier known as the National Rural Employment Guarantee Act was passed on 7th September 2005 to augment employment generation and social security in India. It covers all districts of India except the ones with 100% urban population.
- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has the following objectives:
- Provide 100 days of guaranteed wage employment to rural unskilled labour
- Increase economic security
- Decrease migration of labour from rural to urban areas

42/A2011

- With reference to “Look East Policy” of India, consider the following. Statements

  1. India want 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 neighbors in Southeast and East Asia.

  Which of the statements given above is/are correct?

  A) 1 only B) 1 and 3 only

  C) 1 and 3 only D) 1,2 and 3

Ans.: B
Look East Policy

- India's Look East policy is an effort to cultivate extensive economic and strategic relations with the nations of Southeast Asia to bolster its standing as a regional power and a counterweight to the strategic influence of the People's Republic of China.
- Now we follow Act East Policy.
- The main difference between "look East Policy" and "Act East Policy" is that the former aimed to increase economic ties with only the "South East Asian countries" whereas the latter aimed to increase economic as well as defence related ties with "South east and East Asian countries".

43/A2011

- 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 Ministers submits the resignation of Council of Ministers

Ans.: D
Budget if not passed

- If Budget is not passed, it is considered as loss of majority of ruling party.
- *Cut motion is a power given to the members of the Lok Sabha to oppose a demand in the Financial Bill discussed by the government.* If a cut motion is adopted by Parliament and the government does not have the numbers, it is obliged to resign as per rules of the Lok Sabha.
- In order that notice of motion for reduction of the amount of demand may be admissible, it shall satisfy the following conditions, namely:-
  (i) it shall relate to one demand only;
  (ii) it shall be clearly expressed and shall not contain arguments, inferences, and ironical expressions.
- Speaker to decide admissibility

44/A2011

- 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
Fundamental Duties

- The Fundamental Duties' are defined as the moral obligations of all citizens to help promote a spirit of patriotism and to uphold the unity of India. These duties set out in Part IV-A of the Constitution, concern individuals and the nation.
- Article 51A of the Indian Constitution lays down the fundamental duties of citizens in India. The 11 fundamental duties of India are as follows:
- To abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.
- To cherish and follow the noble ideals which inspired our national struggle for freedom.
- To uphold and protect the sovereignty, unity and integrity of India.

Fundamental Duties

- To defend the country and render national service when called upon to do so.
- 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.
- To value and preserve the rich heritage of our composite culture.
- To protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.
- To develop the scientific temper, humanism and the spirit of inquiry and reform.
- To safeguard public property and to abjure violence.
- To strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.
- To provide opportunities for education by the parent the guardian, to his child, or ward between the age of 6-14 years as the case may be.

45/A2011

- 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 facilities 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
Finance Commission

- A finance commission is set up very five years by the President under Article 280 of the Constitution. Its main function is to recommend how the Union government should share taxes levied by it with the states
- Finance Commission is a constitutional body
- After holding consultations with all the stakeholders that include the ministries and departments of the Union government, state governments, trade bodies, banks and industry, the Commission finalizes the formula for dividing the tax pie for a period of five years.
- The Finance Commission also decides the share of taxes and grants to be given to the local bodies in states. This part of tax proceeds is called Finance Commission Grants, which is a part of the Union budget.

46/A2011

- 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
Universal Declaration of Human Rights

- The Universal Declaration of Human Rights (UDHR) was adopted by UNO General Assembly on 10th December, 1948 in Paris, France.
- There were 58 members of UNO. 48 voted in favour, 8 abstained, and two did not vote.
- The Declaration consists of 30 articles affirming an individual's rights which, although not legally binding.
- Articles are about basic concepts of dignity, liberty and equality, Right to life, prohibition of slavery and torture, freedom of movement, peaceful association, healthcare, right to a standard of living etc.
- The Declaration of Human Rights Day is commemorated every year on December 10, known as Human Rights Day.

47/A2011

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

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

  Select the correct answer from the codes given below:

  A) 1 only
  B) 1 and 2 only
  C) 2 and 3 only
  D) 1,2 and 3

Ans.: D
Algal bloom

- An algal bloom or algae bloom is a rapid increase or accumulation in the population of algae in freshwater or marine water systems, and is often recognized by the discoloration in the water from their pigments.
- Algal blooms may occur in freshwater as well as marine environments.
- Algal blooms are the result of an excess of nutrients (particularly phosphorus and nitrogen) into waters and higher concentrations of these nutrients in water cause increased growth of algae and green plants.
- The harmful effects from such blooms is due to the toxins they produce or from using up oxygen in the water which can lead to fish die-offs.

48/A2011

- Consider the following:

1. Photosynthesis
2. Respiration
3. Decay of Organic matter
4. Volcanic action

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

A) 1 and 4 only
B) 2 and 3 only
C) 2 3 and 4 only
D) 1,2 3 and 4

Ans.: C
Carbon Cycle

- The **carbon cycle** is the process in which **carbon** travels from the atmosphere into organisms and the Earth and then back into the atmosphere. Plants take **carbon**-dioxide from the air and use it to make food. Animals then eat the food and **carbon** is stored in their bodies or released as CO2 through respiration.

- **The Carbon Cycle**

  Carbon moves from the atmosphere to plants.
  Carbon moves from plants to animals.
  Carbon moves from plants and animals to soils.
  Carbon moves from living things to the atmosphere. Carbon moves from fossil fuels to the atmosphere when fuels are burned.
  Carbon moves from the atmosphere to the oceans.

49/A2011

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

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

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

Which of the statements given above is/are correct?

A) 1 only
B) 2 only
C) Both 1 and 2
D) Neither 1 nor 2

Ans.: D
Wassenaar Arrangement

- The Wassenaar Arrangement was established to contribute to regional and international security and stability by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilizing accumulations.
- Participating states seek, through their national policies, to ensure that transfers of these items do not contribute to the development or enhancement of military capabilities and are not diverted to support such capabilities.
- This arrangement was finalised on 12th July 1996, in Wassenaar, Netherland
- China and Israel are not the members

Australia Group

- The Group was established in 1985
- The group initially consisted of 15 members as Australia took the lead hence the name.
- It was to help member countries to identify those exports which needed to be controlled so as to stop spreading of chemical and biological weapons.
- The group was formed after the use of chemical weapons by Iraq in 1984.
- India joined the group on January 19, 2018
- It has 43 members. Australia, the European Commission, all 28 member states of the European Union, The USA, India, Ukraine and Argentina

50/A2011

- 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 degree C
  D) None of the statements A,B,C given above is correct

Ans.: C
Lake surface Frozen

- Only the top layer of the lake or river freezes. Underneath the frozen upper layer, the water remains in its liquid form and does not freeze. Also, oxygen is trapped beneath the layer of ice. As a result, fish and other aquatic animals find it possible to live comfortably in the frozen lakes and ponds.

- The surface water keeps on cooling till it gets converted to ice continuing to float on the Surface of Water keeping the inside of water at a Temperature of 4 degree Celsius. This Anomaly allows the Aquatic Organism to survive in freezing cold, as the temperature below is warmer than above.

- When water is cooled, it contracts like until a temperature of approximately 4° Celsius is reached. After that, it expands slightly until it reaches the freezing point, and then when it freezes it expands by approximately 9%.

51/A2011

- 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
Indian wild ass

- It is currently listed as Near Threatened by IUCN.
- In India it is found in Little Raan of Kutch
- Indian wild asses graze between dawn and dusk. The animal feeds on grass, leaves and fruits of plant, crop, Prosopis pods, and saline vegetation.
- It is one of the fastest of Indian animals, with speeds clocked at about 70 – 80 km. per hour
- Indian Wild Ass Sanctuary is located in the Little Raan of Kutch

Indian wild boar

- The Wild Boar or wild pig . The species is one of the widest-ranging mammals in the world.

Indian Gazelle

- The chinkara also known as Indian gazelle.
- It stands at 65 cm (26 in) tall and weighs about 23 kg (51 lb). It has a reddish-buff summer coat with smooth, glossy fur. In winter, the white belly and throat fur is in greater contrast.
- Chinkara live in arid plains and hills, deserts, dry scrub and light forests.
- In India is found in the Thar Desert.
- Chinkaras are shy and avoid human habitation. They can go without water for long periods and can get sufficient fluids from plants and dew.
- It has been listed as Vulnerable on the IUCN Red List

Indian wild buffalo

- The Indian Wild Buffalo is the state animal of Chhattisgarh (India) and is a large species of bovine native to the Indian Sub-continent and South East Asia. This magnificent animal is an ancestor of domestic Buffalo and is genetically invaluable.
- The total population of this animal all over the world is only about 4,000 of which half of the population lives in India itself. In India also, majority of the population lives in North – East India.
- In India, tourists from all over the world flock to Kaziranga National Park of Assam to have amazing sightings of this animal.
- This animal is also important to the ecosystem because it helps in the rejuvenation of grasslands.

52/A2011

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

1. La Nina is characterized by unusually cold ocean temperature in equatorial Indian Ocean whereas El Nino is characterized by unusually warm ocean temperature in the equatorial Pacific Ocean

2. El Nino has adverse effect on south west monsoon of India, but La Nina has no effect on monsoon climate.

Which of the statements given above is/are correct?

A) 1 only
B) 2 only
C) Both 1 and 2
D) Neither 1 nor 2

Ans.: D
El Nino

- El Niño is a part of a routine climate pattern that occurs when sea surface temperatures in the tropical Pacific Ocean rise to above-normal levels for an extended period of time.

- Fishermen off the west coast of South America were the first to notice appearances of unusually warm water that occurred at year's end. The phenomenon became known as El Niño because of its tendency to occur around Christmas time. El Niñois Spanish for "the boy child" and is named after the baby Jesus.

La Nina

- The name La Niña originates from Spanish, meaning "the little girl", analogous to El Niño meaning "the little boy”
- It is a coupled ocean-atmosphere phenomenon that is the colder counterpart of El Nino
- During a period of La Niña, the sea surface temperature across the equatorial Eastern Central Pacific Ocean will be lower than normal by 3 to 5° C (5.4 to 9° F). An *appearance* of La Niña persists for at least five months.
- It has extensive effects on the weather across the globe, particularly in North America even affecting the Atlantic and Pacific hurricane seasons.

53/A2011

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

  A) Making Zamindar's position stronger vis-à-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.: D
Land settlement system of Lord Cornwallis in 1793

- The Permanent Settlement was an agreement between the East India Company and Bengali landlords to fix revenues to be raised from land, with far-reaching consequences for both agricultural and administration
- It was concluded in 1973 by Lord Corwallis.
- These regulations remained in place until the Charter Act of 1833.

54/A2011

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

  A) It was a non-violent movement

  B) It was led by Mahatma Gandhi

  C) It was a spontaneous movement

  D) It did not attract the labour class in general

Ans.: B
Quit India Movement 1942

- The Quit India Movement, or the August Movement, was a movement launched at the Bombay session of the All-India Congress Committee by Mahatma Gandhi on 8 August 1942, during World War II, demanding an end to British Rule of India.
- The Quit India movement called for India's immediate independence and was launched in protest against sending Indians to fight for the British in the Second World War. The movement aimed to force the British Government to come to the negotiating table by holding their war effort hostage
- The slogan of Quit India Movement was ‘Karo ya Maro’-(Do or Die) was given by Mahatma Gandhi

55/A2011

- 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 foreign religious missionaries in tribal areas

  D) The complete disruption of the old agrarian order of the tribal communities

Ans.: D
Tribal Insurrection in 19th Century

- The Tribal rebellion in India took place for social, cultural and political reasons, particularly against the acquisition of their land and exerted their rights over forest resources.
- When the British government in India brought changes in the forest laws, the life of the tribal people affected badly.
- Tribal movements in India have seen various shades from being agrarian and forest-based to being ethnic in nature when tribals directed their revolt against zamindars, moneylenders and even government officials
- World Tribal Day is observed on August 9 every year. It is aimed at protecting the rights of the world's tribal population.

56/A2011

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

  A) As compared to other countries, India had a better ship-building technology in ancient and medieval times

  B) The rulers of southern India always patronized traders, brahmin priests and Buddhist monks in this context

  C) Monsoon winds across the Bay of Bengal facilitated sea voyages

  D) Both ‘A’ and ’B’ are convincing explanations in this context

Ans.: C
Trade with Southeast Asia across Bay of Bengal

- Throughout the last few thousand years the mariners and trade routes of the Indian Ocean have moved to a unique rhythm based upon the prevailing seasonal weather patterns.

- The switch in overall wind direction resulting from the monsoon patterns means that it is possible to sail on the Indian Ocean with a constantly favourable wind, if done in conjunction with the monsoon rhythms. Using favourable winds as much as possible was important. Ancient and medieval Indian Ocean sailing vessels could only sail to windward in lighter winds and calm seas, but were efficient when sailing with the wind. They could average as much as 11 kph on extended voyages, with an even higher top speed in very good conditions.

57/A2011

- What is the difference between Blue-tooth and Wi-Fi devices?

A) Bluetooth uses 2.4 GHz radio frequency band, whereas Wi-Fi can use 2.4 GHz or 5 GHz frequency band

B) Bluetooth is used for Wireless Local Area Networks (WLAN) only. Whereas Wi-Fi is used for Wireless Wide Area Networks (WWAN) only

C) When information is transmitted between two devices using 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 are correct in this context

Ans.: A
Blue-tooth vs Wi-Fi

- The main difference is that Bluetooth is primarily used to connect devices without using cables, while Wi-Fi provides high-speed access to the internet. Bluetooth is a wireless technology standard that is used to exchange data over short distances (less than 30 feet), usually between personal mobile devices
- Bluetooth only does its work on a 2.4GHz frequency, whereas many WiFi networks these days will run on both 2.4GHz and 5GHz frequencies.
- Bluetooth is a radio communication technology that enables low-power, short distance wireless networking between phones, computers, and other network devices.

58/A2011

- 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.: C
Micro-irrigation

- Micro-irrigation is the slow application of continuous drips, tiny streams or miniature sprays of water above or below the soil surface. Besides, it helps reduce water consumption, growth of unwanted plants (weeds), soil erosion and cost of cultivation.
- A leading advantage of micro-irrigation is that non-beneficial evaporation is greatly reduced when compared to sprinkler irrigation
- Fertilizer and nutrient loss is minimized due to a localized application and reduced leaching.
- Drip irrigation can reduce water use by 30 to 70 percent compared to conventional sprinkler irrigation.

59/A2011

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

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

Select the correct answer using the codes given below:

A) 1 only
B) 1 and 2 only
C) 2 and 3 only
D) 1,2 and 3

Ans.: B
Home-charges

- **Home Charges** are the interests of India's external debts and the payments of the salaries and pensions of British officials in India are what the **Home Charges** comprised of. The trade surplus was used to make these payments or the payments for the **Home Charges**.

- The **colonial period** was characterized by the exploitation of **Indian** resources. Thus, the British **rule drained** out **Indian wealth** for the fulfilment of its own interests.

- Dadabhai Naoroji gave several factors that caused external **drain**. These are: **Home charges** refer to the interest on public debt raised in England at comparatively higher rates; expenditure incurred in England by the Secretary of State on.

60/A2011

- What was the reason for Mahatma Gandhi to organize a satyagraha on behalf of 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 nor 2

Ans.: A
Kheda Satyagrah

- The Kheda Satyagraha was in 1918
- It was lead by Gandhiji
- It was major independence movement after Champaran Satyagraha and Ahmedabad mill strike
- The Kheda satyagraha was organised to support peasants of Kheda district of Gujarat
- People of Kheda were unable to pay the high taxes levied by the British due to crop failure and a plague epidemic
- Sardar Vallabhbhai Patel, Indulal Yagnik, Shankarlal Bankar Vyas were associated with the satyagraha
- Satyagraha was purely Gujarati struggle

61/A2011

- 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
Biodiversity

- Biodiversity is the variety and variability of life on Earth.
- Biodiversity means types of living forms in existence
- Biodiversity is greater near the equator because of warm climate and high primary productivity
- Tropical forests cover less than 10% of earth's surface and contain 90% of world's species
- Marine biodiversity is usually highest along coasts in the western Pacific where sea surface temperature is highest.
- Soil formation → Prevention of soil erosion → Recycling of waste → Pollination of crops

62/A2011

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

A) Aspartame is as sweet as table sugar, but unlike table sugar, it is not readily oxidized in human body due to lack of requisite enzymes

B) When aspartame is used in food processing, the sweet taste remains, but it becomes resistant to oxidation

C) Aspartame is as sweet as sugar, but after ingestion into the body. It is converted into metabolites that yield no calories

D) Aspartame is several times sweeter than table sugar, hence food items made with small quantities of aspartame yield fewer calories on oxidation

Ans.: D
Aspartame

- **Aspartame** is an artificial non-saccharide sweetener 200 times sweeter than sucrose, and is commonly used as a sugar substitute in foods and beverages. It is a methyl ester of the aspartic acid/phenylalanine dipeptide with the trade names, NutraSweet, Equal, and Canderel.
- As **aspartame** is digested, low amounts of methanol are formed. **Aspartame** is only **a** minor source of methanol in the diet, **so** it is not considered to be **a** problem. Thousands of websites claim that it is seriously harmful. **Aspartame** is blamed for hundreds of health problems, ranging from cancer to headaches.
- But scientifically it is not proved conclusively

63/A2011

- 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
Sir William Wedderburn and W S Caine Parliament Committee 1893

- Wedderburn was one of the founding members of the Indian National Congress He was also the president of Congress in 1889 and 1910.
- He joined the Indian Civil Service. His father and elder brother were also members of ICS.
- His older brother John had been killed in the 1857 uprising and William joined the service in 1860 after ranking third (of 160 applicants) in the entrance exam of 1859.
- He worked along with influential Congress leaders in Bombay and in 1890 he chaired the British committee of the Indian National Congress, helped publish the journal ***India*** and attempted to support the movement through parliamentary action in Britain.

64/A2011

- What is the difference between a CFL and a 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
CFL vs LED

- **CFL** bulbs were made to take the place of incandescent bulbs, which generate light as a result of heat. **LED** (light-emitting diode) is a type of bulb that produces light using a narrow band of wavelengths. **LED** lighting is more energy efficient than **CFL** bulbs, as well as all other types of fluorescent lighting.

- **LED bulbs** are twice as energy efficient as **CFL bulbs** that put out the same amount of light. That means you can potentially save 50% on the "**lighting**" portion of your electric bill simply by installing **LED bulbs** instead of **CFLs**.

- **LED bulbs** are more durable **than CFLs**.

65/A2011

- Recently, ‘oilzapper’ was in the news, What is it?

  A) It is an ecofriendly technology for the remediation of oily sludge and oil spills

  B) It is 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
Oilzapper

- **Oilzapper** feeds on hydrocarbon compounds present in crude oil and the hazardous hydrocarbon waste generated by oil refineries, known as Oil Sludge and converts them into harmless CO2 and water. The Oilzapper is neatly packed into sterile polythene bags and sealed aseptically for safe transport.

- Oil-Zapper refers mixture of five microbial strains – are capable of eating up oil, they take in the pollutants and give out carbon dioxide without producing any harmful residues. The Energy and Resources Institute (TERI) was invited to use their oil-zapper technology to clean up the oil spill contamination at a kilometer long stretch of beach near Mumbai.

66/A2011

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

A) O positive

B) A positive

C) B positive

D) Cannot be determined on the basis of the given data

Ans.: A
Blood-Groups

- Blood type is inherited from our parents. Each biological parent donates one of two ABO genes to their child. The A and B genes are dominant and the O gene is recessive. For example, if an O gene is paired with an A gene, the blood type will be A.

father \ mother	A	B	O
A	AA	AB	AO
B	BA	BB	BO
O	OA	OB	OO

alleles	blood type
A+A	= A
A+O	= A
A+B	= AB
B+B	= B
B+O	= B
O+O	= O

67/A2011

- 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.: B
‘Unto this Last’ Book

- **Unto** This **Last** is an essay and **book** on economy by John Ruskin, first published between August and December 1860 in the monthly journal Cornhill Magazine in four articles.

- The title is a quotation from the Parable of the workers in the Vineyard.

- The "last" are the eleventh hour labourers, who are paid as if they had worked the entire day. Rather than discuss the contemporary religious interpretation of the parable, whereby the eleventh hour labourers would be death-bed converts, or the peoples of the world who come late to religion, Ruskin looks at the social and economic implications, discussing issues such as who should receive a living wage.

- *Unto This Last* had a very important impact on Gandhi’s philosophy. He discovered the book in March 1904 through Henry Polak, whom he had met in a Vegetarian restaurant in South Africa. Polak was sub-editor of the Johannesburg paper *The Critic*. Gandhi decided immediately not only to change his own life according to Ruskin's teaching, but also to publish his own newspaper, Indian Opinion, from a farm where everybody would get the same salary, without distinction of function, race, or nationality. This, for that time, was quite revolutionary. Thus Gandhi created Phoenix Settlement.

- Mohandas Gandhi translated *Unto This Last* into Gujarati in 1908 under the title of Sarvodaya (*Well Being of All*). Valji Govindji Desai translated it back to English in 1951 under the title of *Unto This Last: A Paraphrase*. This last essay can be considered his program on economics, as in *Unto This Last*, Gandhi found an important part of his social and economic ideas.

68/A2011

- 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
Usha Mehta

- **Usha Mehta** (25 March 1920 – 11 August 2000) was a 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.

69/A2011

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

  1. DVD supports Standard Definition video while BD supports High Definition video

  2. Compared to a DVD, the BD format has several times more storage capacity

  3. Thickness of BD is 2.4 mm while that of DVD is 1.2 mm

  Which of the statements given above is/are correct?

  A) 1 only
  B) 1 and 2 only
  C) 2 and 3 only
  D) 1,2 and 3

Ans.: B
Blu-Ray Disc

- A **DVD** and **Blu-ray** disc are identical in thickness (120mm), but each disc's protection coating is different. The **DVD** has a protection coating that is 0.6mm thick while the **Blu-ray** disc has one that is 0.1mm thick. In addition, the **Blu-ray's** coating is hard, while the **DVDs** is not.

- The main difference is capacity. DVD holds about 4.5 GB / layer, Blu-ray about 25 GB. DVD uses red laser while Blu-ray quite surprisingly blue one. Blu-ray can also have more layers, up to 5 IIRC while DVD can have only two. DVD is uses for standard definition movies while Blu-ray is for high definition. A Blu-ray player can play DVDs. Opposite of course is not true. Some newer Blu-Ray players support also 4K movies.

70/A2011

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

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

  Select the correct answer using the codes given below:

  A) 1 only
  B) 2 and 3 only
  C) 1 and 3 only
  D) 1,2 and 3

Ans.: B
Nehru Report

- The **Nehru** Committee **Report** of 10 August 1928 was a memorandum outlining a proposed new dominion status for the constitution for India.
- It was prepared by a committee of the All Parties Conference chaired by Motilal **Nehru** with his son Jawaharlal **Nehru** acting as secretary.
- There were nine other members in this committee.
- The final report was signed by Motilal Nehru, Ali Imam, Tej Bahadur Sapru, Madhav Shrihari Aney , Mangal Singh, Shuaib Qureshi, Subhash Chandra Bose, and G. R. Pradhan. Shuaib Qureshi disagreed with some of the recommendations.

71/A2011

- 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
Orchids

- Orchids are flowering plants of family Orchidaceae.
- Orchidaceae have about 28,000 species or different types
- Orchids are perennial herbs
- Some orchids have single flowers, but most have a group of flowers called as infloresence
- Generally they are bilaterally symmetrical
- Orchidaceae are cosmopolitan, occurring in almost every habitat apart from glaciers. The world's richest diversity of orchid genera and species is found in the tropics, but they are also found above the Arctic Circle.

72/A2011

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

  A) Biosphere Reserve

  B) Botanical Garden

  C) National Park

  D) Wildlife Sanctuary

Ans.: B
In-Situ Conservation of Flora

- A botanical garden is a controlled and staffed institution for the maintenance of a living collection of plants under scientific management for purposes of education and research, together with such libraries, herbaria, laboratories, and museums as are essential to its particular undertakings.

- Botanical gardens aim to promote the awareness, study, and conservation of plant species diversity. However, few studies have investigated the species diversity of botanical gardens themselves.

73/A2011

- 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.: A
Metropolitan Planning Committee

- The Constitution of India makes it mandatory for the States to set up Metropolitan Planning Committees (MPCs) in the metropolitan areas of the country.
- A metropolitan area is defined as an area having a population of 1 million.
- Article 243ZE of the 74th Amendment to the Constitution says “There shall be constituted in every Metropolitan area, a Metropolitan Planning Committee to prepare a draft development plan for the Metropolitan Region as a whole.”

74/A2011

- 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-on-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 nor 2

Ans.: B

Interim Budget

- While a vote-on-account deals only with the expenditure side of the government's budget, interim budget is a complete set of accounts, including both.
- Interim Budgets also can be presented by all governments whether incumbent or regular or caretaker, however, Interim Budget becomes of special importance.

Vote-on Account

- In order to manage its expenditure for the **interim** period till a new government takes over and announces the **Budget**, the outgoing government presents what is called a vote on account or an interim budget to get the Parliament's approval for expenditure to be incurred for the next few months.
- An interim budget gives the complete financial statement, very similar to a full budget. While the law does not disqualify the Union government from introducing tax changes, normally during an election year, successive governments have avoided making any major changes in income tax laws during an interim budget.

75/A2011

- 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
IMF

- The International Monetary Fund (IMF) is an organization of 189 countries, working to foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world.
- The IMF's role is to ensure the stability of the international monetary system—the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other.
- It gives loan to only member countries.
- IMF gives advice on how to achieve economic stability, prevent financial crises, and improve living standards

76/A2011

- 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.: D
Mangroves

- Mangroves are a group of trees and shrubs that live in the coastal intertidal zone.
- There are about 80 different species of mangrove trees
- Mangroves are salt-tolerant trees, also called halophytes, and are adapted to life in harsh coastal conditions. They contain a complex salt filtration system and complex root system to cope with salt water immersion and wave action. They are adapted to the low oxygen conditions of waterlogged mud.
- Mangroves occur worldwide in the tropics and sub tropics mainly between latitudes 25^0 N and 25^0 S
- It is found in 118 countries and estimated total mangrove forest is 1.38 lakh square km.

77/A2011

- 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
Jainism

- According to **Jain** doctrine, the universe and its constituents—soul, matter, space, time, and principles of motion—have always existed.
- All the constituents and actions are governed by universal natural laws. **Jain** text claims that the universe consists of jiva (life force or souls) and ajiva (lifeless objects).
- All the constituents and actions are governed by universal natural laws.

78/A2011

- 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
Salinization of soil

- Salinization refers to a build up of salts in soil, eventually to toxic levels for plants. (3,000 - 6,000 ppm salt results in trouble for most cultivated plants.) Salt in soils decreases the osmotic potential of the soil so that plants can't take up water from it.

- If the level of salts in the soil water is too high, water may flow from the plant roots back into the soil. This results in dehydration of the plant, causing yield decline or even death of the plant.

79/A2011

- The ‘Red Data Books’ published by the International Union for Conversion of Nature and Natural Resources (IUCN) contain lists of

  1. Endemic plant and animal species present in the biodiversity hotspot
  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
Red Data Books

- The Red Data Book is a public document which is created for recording endangered and rare species of plants, animals, fungi as well as some local subspecies which are present in a particular region.
- The Red Data Book helps us in providing complete information for research, studies and also for monitoring the programs on rare and endangered species and their habits.
- This book is mainly created to identify and protect those species which are on the verge of extinction.

80/A2011

- 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
Teaser Loan

- A **Teaser loan** is nothing, but, a special **loan** that is offered for a fixed duration and could then be withdrawn. It generally offers a low interest rate in the initial years or some special offer and then gets back to the normal interest rates.

- **Subprime lending** is the practice of **lending** to borrowers with low credit ratings. Because these borrowers carry relatively high default risks, **subprime loans** carry above-average interest rates.

81/A2011

- 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.: A
Orbiting Artificial Satellite

- A satellite orbits Earth when its speed is balanced by the pull of Earth's gravity. Without this balance, the satellite would fly in a straight line off into space or fall back to Earth.

- What keeps the moon from crashing into Earth? The centrifugal (outward) force of the Moon's motion counteracts this gravitational pull. The Moon moves through space at a very high speed, and its inertia would cause it to move away from the Earth were it not for the fact that the gravitational pull forces it into an orbit around the Earth.

82/A2011

- 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.: D

Year	GDP Growth	Per Capita in $
2007	7.06	1018
2008	3.0	991
2009	7.86	1040
2010	8.49	1148
2011	5.2	1415

83/A2011

- 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
Agriculture Finance

Farm Size (in Ha)	Total number of operational holdings (OHs) (in '000s)	Estimated number of OHs that took institutional credit (in '000s)	Percentage of estimated number of OHs that took institutional credit to total number of OHs (in %)
Marginal (below one)	64316.37	12631.81	19.6
Small (1.0-1.99)	18776.33	6167.85	32.8
Semi-Medium (2.0-3.99)	11217.91	3875.76	34.5
Medium (4.0-9.99)	5335.5	2104.32	39.4
Large (10 and above)	1003.43	402.07	40.1
Total	100649.54	25181.81	25.0

84/A2011

- Which of the following can aid in furthering the Government's objective of inclusive growth?
  1. Promoting Self-help Groups
  2. Promoting Micro, small and medium Enterprises
  3. Implementing the Right to Education Act

  Select the correct answer using the codes given below:

  A) 1 only
  B) 1 and 2 only
  C) 2 and 3 only
  D) 1,2 and 3

Ans.: D
Inclusive Growth

- Inclusive growth means economic growth that creates employment opportunities and helps in reducing poverty. It means having access to essential services in health and education by the poor. It includes providing equality of opportunity, empowering people through education and skill development.
- The goal of such growth is to strike a balance between economic and sustainable development. In other words, instead of only focusing on the economic outcomes as in traditional models, inclusive growth focuses more on equity.
- The goal of inclusive economy is to prevent social exclusion.

85/A2011

- 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.: D
Disinvestment

Disinvestment is aimed at:

- To reduce the financial burden on the Government.
- To improve public finances.
- To introduce, competition and market discipline.
- To fund growth.
- To encourage wider share of ownership.
- To depoliticise non-essential services.

86/A2011

- What is the difference between asteroids and comets?

1. Asteroids are small rocky planetoids, while comets are formed of frozen gases held together by rocky and metallic material

2. Asteroid 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
Asteroids

- Asteroids are minor planets. They are rocky remnants left over from the early formation of our solar system about 4.6 billion years ago. The current known asteroid count is: **840,323**
- Larger asteroids also called planetoids
- **The three broad composition classes of asteroids are C-, S-, and M-types.**
- The C-type (chondrite) asteroids are most common, probably consist of clay and silicate rocks, and are dark in appearance.
- The S-types ("stony") are made up of silicate materials and nickel-iron.
- The M-types are metallic (nickel-iron).

Comets

- **Comets** are cosmic snowballs of frozen gases, rock and dust that orbit the Sun. When frozen, they are the size of a small town. When a **comet's** orbit brings it close to the Sun, it heats up and spews dust and gases into a giant glowing head larger than most planets.
- **Comets** contain dust, ice, carbon dioxide, ammonia, methane and more.
- As of July 2018 **there** are 6,339 known **comets**, a number that is steadily increasing as they are discovered. However, this represents only a tiny fraction of the total potential **comet** population, as the reservoir of **comet**-like bodies in the outer Solar System (in the Oort cloud) is estimated to be one trillion.
- Halley's **comet will next appear** in the night sky in the year 2062. It orbits the sun every 75-76 years, so this is the time between appearances. Halley's **comet** was recorded by Edmund Halley in 1682.
- The speed of **comets** can vary a lot, depending on its orbit and where it is in it. The closer they are to the Sun though, the **faster** they're going
- Meteor showers occur when dust or particles from asteroids or **comets** enter Earth's atmosphere at very high speed. When they hit the atmosphere, meteors rub against air particles and create friction, heating the meteors. The heat vaporizes most meteors, creating what we call **shooting stars**.

87/A2011

- Economic growth is usually coupled with

  A) Deflation

  B) Inflation

  C) Stagflation

  D) Hyper inflation

Ans.: B
Hyper inflation

- Monetary inflation occurring at a very high rate is called hyper inflation
- It occurs when money supply is increased without increase in supply of goods and services
- It causes uncontrollable currency devaluation
- Hyper inflation is 50% or more inflation
- To check hyperinflation the money supply need to be controlled
- Government spending is to be reduced
- Printing of currency notes to be slowed down

Stagflation

- Stagflation is persistent high inflation combined with high unemployment and stagnant demand in a country's economy.
- **Stagflation**, is **caused by** cost-push inflation.
- Cost-push inflation occurs when some force or condition increases the costs of production.
- An increase in oil prices, can give rise to **stagflation**.
- During stagflation there is slow or stagnant economic growth
- Stagflation causes increase in unemployment rate
- During stagflation Cash is the king

Inflation

- Inflation is rise in prices of good and services.
- Buying power of money decreases
- Inflation reflects a reduction in the purchasing power per unit of money
- A loss of real value in the medium of exchange and unit of account within the economy

Deflation

- The opposite of inflation is deflation, a sustained decrease in the general price level of goods and services.
- Deflation occurs when the inflation rate falls below 0%
- Inflation reduces the value of currency over time, but deflation increases it
- Disinflation is different from Deflation. Disinflation is a slow down in the inflation rate.
- Deflation increases the real value of debt

88/A2011

- 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
Bank Rate

- A bank rate is the interest rate at which a nation's central bank lends money to domestic banks
- The loan is often very short-term loan
- By controlling the Bank Rate Central Bank is controlling money supply
- Lower bank rates can help to expand the economy by lowering the cost of funds for borrowers
- Higher bank rates help to reign in economy when inflation is higher
- The overnight rate refers to the rate banks charge each other when they borrow funds among themselves.

89/A2011

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

  1. Southern hemisphere has less land mass as compared to northern hemisphere
  2. Corilis force is higher in southern hemisphere as compared to northern hemisphere

  Which of the statements given above is/are correct?

  A) 1 only
  B) 2 only
  C) Both 1 and 2
  D) Neither 1 nor 2

Ans.: A
Westerlies in Southern Hemisphere

- Westerly is a wind blowing from the west toward the east in the middle latitudes between 30 and 60 degrees latitude.
- 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, in areas where land is absent, because land amplifies the flow pattern, making the current more north-south oriented, slowing the westerlies.

90/A2011

- 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 is/are correct?

A) 1 only B) 2 only
C) Both 1 and 2 D) Neither 1 nor 2

Ans.: B
Kraisthmus

- Kra Isthumus is the narrowest part of the Malay Peninsula, in southern Thailand.
- The isthmus is bordered to the west by the Andaman Sea and to the east by the Gulf of Thailand.
- The Thai Canal is a proposal to join the Gulf of Thailand with the Andaman Sea. It was originally envisioned as crossing the isthmus.
- The **Thai Canal**, also known as **Kra Canal** or **Kra Isthmus Canal**, refers to proposals for a canal that would connect the Gulf of Thailand with the Andaman Sea across the Kra Isthumus in southern Thailand. It is envisaged that such a canal would improve transportation in the region, similar to the Panama Canal and Suez Canal.

Gulf of Siam

- The **Gulf of Thailand**, also known as the **Gulf of Siam**, is a shallow inlet in the western part of the South China Sea, a marginal body of water in the western Pacific Ocean. The gulf is around 800 km long and up to 560 km wide, has a surface area of 320,000 km^2 and is surrounded on the north, west and southwest by Thailand, on the northeast by Cambodia and Vietnam and the South China Sea to the southeast.

Malacca Straits

- Straits of Malacca is a narrow, 890 km stretch of water between the Malay Peninsula and the Indonesian island of Sumatra.
- As the main shipping channel between the Indian Ocean and the Pacific Ocean
- It is one of the most important shipping lanes in the world.
- It is named after the Malacca Sultanate that ruled over the archipelago between 1400 and 1511, which is the centre of administration is located in the modern-day state of Malacca, Malaysia.

91/A2011

- Regular intake of fresh fruits and vegetables is recommended in the diet since they are a good source of 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
Antioxidants

- A substance that inhibits oxidation, especially one used to stop deterioration of stored food products.
- Eating a diet rich in antioxidants can help increase levels of **antioxidant** in blood to fight oxidative stress and reduce the risk of many diseases.
- Examples of Antioxidants
  Vitamin A
  Vitamin C
  Vitamin E
  Beta-carotene
  Selenium
  Manganese

92/A2011

- 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
Indus Valley Civilization

- The **Indus Valley civilization**, as we find it, was highly developed and must have taken thousands of years to reach that stage. It was, surprisingly enough, a predominantly **secular civilization**, and the religious element, though present, did not dominate the scene.

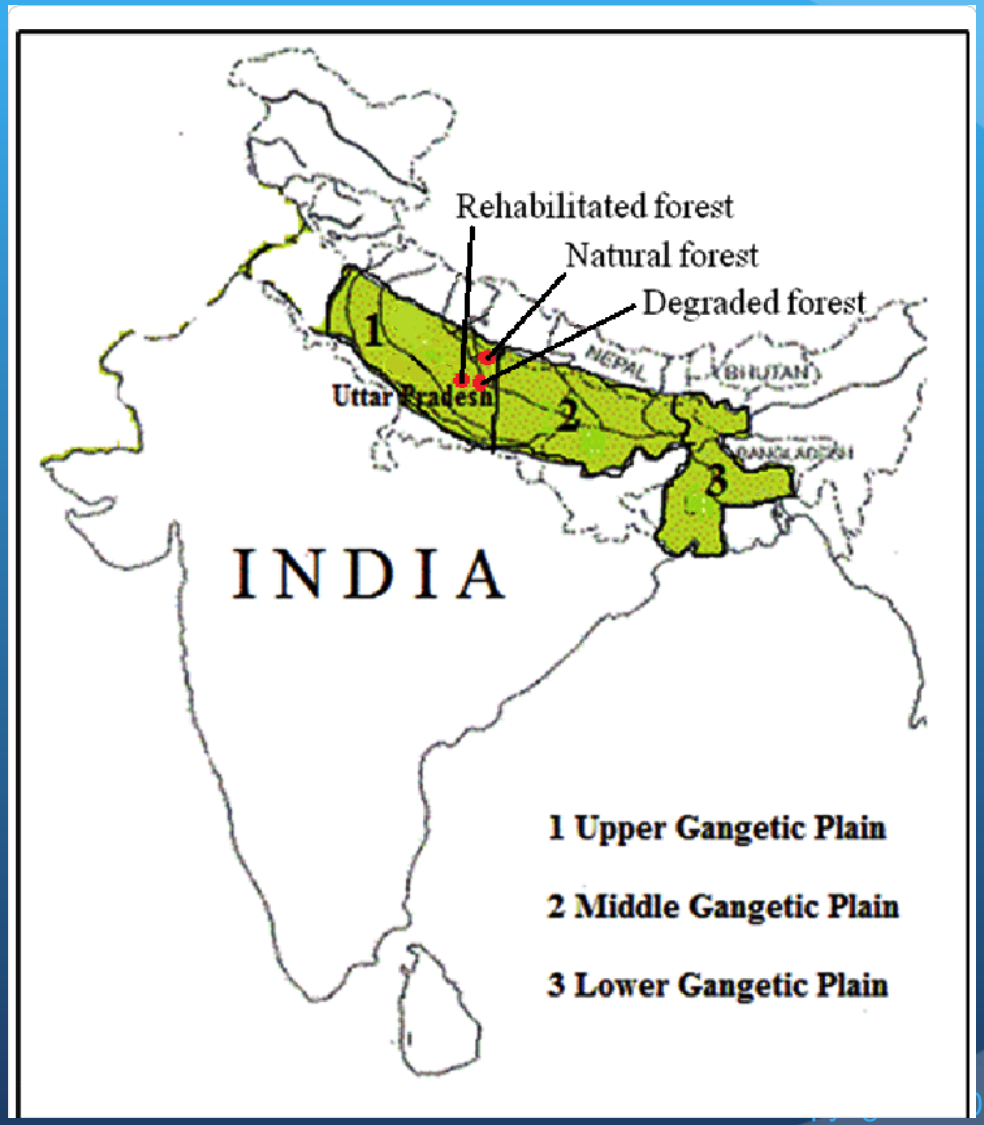
- The **fashion** of the **Indus Valley** people consisted of loin cloth for men, wrap skirts and shoulder shoals for women, sandals **made** of cloth and wood and **clothes made** of cotton and woollen yarn.

93/A2011

- The lower Gangetic plain is characterized 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
Lower Gangetic Plains



94/A2011

- What could be the main reason/reasons for the formation of African and Eurasian desert belt?

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

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

  A) 1 only
  B) 2 only
  C) Both 1 and 2
  D) Neither 1 nor 2

Ans.: A
Eurasian Desert Belt

- The main reasons for the **formation of African and Eurasian desert belt** is because it is located in the sub-tropical high pressure cells. It is under the influence of warm ocean currents.

95/A2011

- 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.: C
Troposphere vs. Stratosphere for flying of Planes

- The layer of atmosphere where the most plane fly is troposphere.
- Many jet aircrafts fly in the stratosphere because it is very stable
- Air resistance is lower at higher altitudes. Fuel expenditure is less
- 35,000 feet is referred to as ‘cruising altitude’
- The stratosphere is abundant in ozone. The temperature is about -50^{o}C.
- The stratosphere is very dry having little water vapors thus few clouds are formed in this layer

96/A2011

- Consider the following statements:

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

  Which of the statements given above is/are correct?

  A) 1 only
  B) 2 only
  C) Both 1 and 2
  D) Neither 1 nor 2

Ans.: C
Biodiversity

- The decrease in diversity when moving from **lower latitudes** towards higher **latitudes** is referred to as Latitudinal Diversity Gradient.
- Generally it is observed that the diversity richness is more in the areas near the equator than at the poles.
- Altitude affects the diversity richness inversely. High altitudes are less diverse than lower altitudes

97/A2011

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

  A)Uplift of folded Himalayan series

  B) Syntaxtal bending of geologically young Himalayas

  C) Geo-tectonic disturbance in the territory folded mountain chains

  D) Both ‘A’ and ‘B’ above

Ans.: B
Brahmaputra U-turn

- The Himalayas take a turn in from west to east to north to south in north eastern states, the Brahmaputra while crossing India takes u turn due to this bend of Himalayas.
- The Dihang, winding out of the mountains, turns toward the southeast and descends into a low-lying basin as it enters north eastern Assam state.
- Brahmaputra enters India in the state of Arunachal Pradesh, where it is called Siang. It makes a very rapid descent from its original height in Tibet, and finally appears in the plains
- It takes u turn from Arunachal Pradesh located in the east India.
- The River Brahmaputra flows westward, till the city of Dhubri and thereafter turns southward in the Garo hills region and enter into Bangladesh near Golpara.
- It is called Jamuna in Bangladesh.
- The river is generally known as the Tsangpo in upper course
- Bhutan forms an integral part of the Brahmaputra river basin even though it does not come in the path of the river.

98/A2011

- 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 the above characteristics?

  A) Andhra Pradesh

  B) Gujarat

  C) Karnataka

  D) Tamil Nadu

Ans.: B
Gujarat

- Gujarat
  Its northern part is semi-arid
  Gujarat is the main producer of tobacco, cotton, and groundnuts in India

  The strengths of Gujarat's agricultural success have been attributed to diversified crops and cropping patters; climatic diversity (8 climatic zones for agriculture); the existence of 4 agricultural universities in the state, which promote research in agricultural efficiency and sustainability

99/A2011

- 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
Virtual Private Network

- A virtual private network (VPN) extends a private network across a public network.
- Users of private network can send and receive data across public network
- It is as if their computing devices are directly connected to each other through private network
- Generally VPN system uses encryption system for security of the data
- Generally VPN users uses authentication methods, including passwords.
- VPN uses, Tunneling protocol: It is a communications protocol that allows for the movement of data from one network to another through a process of encapsulation.

100/A2011

- 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
Vedic Civilization-Dharma

- The **Vedic Civilization** was the culture and traditions of the society prevalent during the **Vedic** age (1500- 600 BCE).

- Dharma is an organising principle in Hinduism that applies to human beings in solitude, in their interaction with human beings and nature, as well as between inanimate objects, to all of cosmos and its parts. It refers to the order and customs which make life and universe possible, and includes behaviours, rituals, rules that govern society, and ethics.

Vedic Civilization-Rita

- ‘Rita’ in Vedas is the truth and cosmic principle which regulates and coordinates the operation of the universe and everything within it
- Ṛita and dharma are parallel concepts, the former being a cosmic principle, the latter being of moral social sphere
- **Rita** is predecessor to **Dharma** and is the Original Rig Vedic concept which refers to the principle of natural order which regulates and coordinates the operation of the universe and everything within it.
- Eventually Dharma overshadowed Rita in the later Vedic Era. While Rita encompassed the ethical principles with a notion of cosmic retribution, Dharma

- Thank you