IAS PRELIMS
2013
Test Booklet Series 'A'
Q&A WITH NOTES

Q1/A2013

- What will follow if a Money Bill is substantially amended by the Rajya Sabha?

A) The Lok Sabha may still proceed with the Bill, accepting or not accepting the recommendations of the Rajya Sabha
B) The Lok Sabha cannot consider the Bill further
C) The Lok Sabha may send the Bill to the Rajya Sabha for reconsideration
D) The President may call a joint sitting for passing the Bill

Rajya Sabha – Money Bill

- The Rajya Sabha may not amend money bills but can recommend amendments.
- A money bill must be returned to the Lok Sabha within 14 days, or the bill is deemed to have passed both houses in the form it was originally passed by the Lok Sabha.
- The Rajya Sabha has limited powers with respect to Money Bills.
- The President may either give or withhold assent to a Money Bill. Under the Constitution, a Money Bill cannot be returned to the House by the President for reconsideration.

Q2/A2013

- Which one of the following statements is correct ?

  A) In India, the same person cannot be appointed as Governor for two or more States at the same time

  B) The Judges of the High Court of the States in India are appointed by the Governor of the State just as the Judges of the Supreme Court are appointed by the President

  C) No procedure has been laid down in the Constitution of India for the removal of a Governor from his/her post

  D) In the case of a Union Territory having a legislative setup, the Chief Minister is appointed by the Lt. Governor on the basis of majority support.

Governor

- The Governors of States have similar powers and functions similar to the President of India
- The governors and lieutenant governors are appointed by the president for a term of five years.
- Governor can impose president's rule. President can dismiss a Governor
- There is no provision for impeachment of Governor
- One person can be Governor of more than one State

- Which one of the following pairs is correctly matched?

GEOGRAPHICAL FEATURE :: REGION

A) Abyssinian Plateau :: Arabia
B) Atlas Mountains :: North-Western Africa
C) Guiana Highlands :: South-Western Africa
D) Okavango Basin :: Patagonia

Abyssinian Plateau

- Abyssinia is a mysterious country located in the mountains of Africa which today is known as Ethiopia

Atlas Mountains

- The Atlas Mountains are a mountain range in the Maghreb. It separates the Mediterranean and Atlantic coastlines from the Sahara Desert.
- The Atlas Mountains are not a continuous chain of mountains but a series of ranges separated by wide areas of land, which are called plateaus. The mountain range separates the Mediterranean and Atlantic coastlines from the Sahara Desert. It has several passes that provide routes between the coast and the Sahara desert.
- Atlas Mountains, series of mountain ranges in north-western Africa, running generally southwest to northeast to form the geologic backbone of the countries — Morocco, Algeria, and Tunisia.

Guiana Highlands

- Guiana Highlands, plateau and low-mountain region of South America located north of the Amazon and south of the Orinoco River.
- The higher elevations on the shield are called the Guiana Highlands, which is where the table-like mountains called tepuis are found. The Guiana Highlands are also the source of some of the world's most spectacular waterfalls such as Angel Falls, Kaieteur Falls and Kuquenan Falls.

Okavango Basin

- The Kalahari Basin also known as the Kalahari Depression, Barotse Basin or the Kalahari-Okavango Basin, is an endorheic basin and large lowland area covering over 2.5 million km^2 covering most of Botswana and parts of Namibia, South Africa, Angola, Zambia, and Zimbabwe.
- Okovango is a river in SW central Africa. It rises in Angola and flowing southeast, then east as part of the border between Angola and Namibia then goes to Botswana to form a great marsh known as the Okavango Basin.

Q4/A2013

- With reference to the history of Indian rock-cut architecture, consider the following statements:

  1. The caves at Badami are the oldest surviving rock-cut caves in India.

  2. The Barbara rock-cut caves were originally made for Ajivikas by Emperor Chandragupta Maurya.

  3. At Ellora, caves were made for different faiths.

  Which of the statements given above is/are correct?

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

Badami Caves

- The Badami cave temples are a complex of Hindu and Jain cave temples located in Badami, a town in the Bagalkot district in northern part of Karnataka, India.
- Pulakeshin I of Chalukya dynasty found the city in 540AD and made it his capital. His son Kirtivarman I succeeded him and constructed the cave temples
- Around the lake, Badami has additional caves of which one may be a Buddhist cave. Another cave was discovered in 2015, about 500 metres (1,600 ft) from the four main caves, with 27 Hindu carvings.
- Badami, formerly known as Vatapi, was the regal capital of the Badami Chalukyas from AD 540 to 757.

Barabar Rock cut Temple

- The Barabar Hill Caves are the oldest surviving rock-cut caves in India, dating from the Maurya Empire (322–185 BCE)
- They are located in the Makhdumpur region of Jehanabad district of Bihar
- Some caves have Ashokan inscriptions
- These caves are situated in the twin hills of Barabar (four caves) and Nagarjuni (three caves)
- These rock-cut chambers bear dedicatory inscriptions in the name of "King Piyadasi" for the Barabar group, and "Devanampiya Dasaratha"

Barabar Caves

- The sculptured surround to the entrance to the Lomas Rishi Cave is the earliest survival of the Ogee shaped 'Chaitra arch' or chandrashala that was to be an important feature of Indian rock-cut architecture and sculptural decoration for centuries.
- The caves were used by ascetics from Ajivika sect founded by Makkhali Gosala, a contemporary of Gautam Buddha.
- There are Buddhist and Hindu sculptures and inscriptions.
- Most caves at Barabar consist of two chambers, carved entirely out of granite with a highly polished internal surface, the 'Mauryan polish' also found on sculptures, and exciting echo effects.

Ellora Caves

- Ellora is a UNESCO World Heritage Site located in Aurangabad district of Maharashtra.
- It is one of the largest rock-cut monastery-temple cave complexes in the world. It has over 100 caves
- It features Hindu, Buddhist and Jain monuments and artwork. 34 caves open: Buddhist 12, Hindu 17, Jain 5
- Dating from 600-1000 CE period
- Cave 16, in particular, features the largest single monolithic rock excavation, the Kailasha temple, a chariot shaped monument dedicated to lord Shiva.
- Vaishnavism and Shaktism two major Hindu Epics are also depicted

Q5/A2013

- Recombinant DNA technology (Genetic Engineering) allows genes to be transferred

  1. across different species of plants
  2. from animals to plants
  3. from microorganisms to higher organisms

  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

Genetic Engineering

- Genetic engineering, is the direct manipulation of an organism's genes using biotechnology.
- Genetic engineering is accomplished in three basic steps. These are (1) The isolation of DNA fragments from a donor organism; (2) The insertion of an isolated donor DNA fragment into a vector genome and (3) The growth of a recombinant vector in an appropriate host.
- It is employed for the production of improved plant species, therapeutic drugs or proteins, prevention of inherited genetic disorder and construction of a genetically modified organism.

Q6/A2013

- The Chinese traveler Yuan Chwang (Hiuen Tsang) who visited India recorded the general conditions and culture of India at that time. In this context, which of the following statements is/are correct?

1. The roads and river-routes were completely immune from robbery.
2. As regards punishment for offences, ordeals by fire, water and poison were the instruments for determining the innocence or guilt of a person.
3. The tradesmen had to pay duties at ferries and barrier stations

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

Yuan Chwang

- He was a Chinese Buddhist monk, scholar, traveler, and translator who traveled to India in the seventh century and described the interaction between Chinese Buddhism and Indian Buddhism during the early Tang dynasty.
- He visited during 629-645 AD various Buddhist sites
- He visited Nalanda too.

Q7/A2013

- Consider the following:
  1. Star tortoise
  2. Monitor Lizard
  3. Pygmy hog
  4. Spider monkey

  Which of the above are naturally found in India?

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

Star Tortoise

- Tortoises have more rounded and domed shells where turtles have thinner, more water-dynamic shells.
- One major key difference is that tortoises spend most of their time on land and turtles are adapted for life spent in water
- Tortoises have club-like forelegs and 'elephantine' hind legs.
- The Indian star tortoise (Geochelone elegans) is a threatened species of tortoise found in dry areas and scrub forest in India, Pakistan and Sri Lanka. This species is quite popular in the exotic pet trade, which is the main reason it is endangered.
- The star tortoise is Schedule IV species under the Wildlife (Protection) Act, 1972 — that means it's illegal to keep them as pets or trade them commercially.
- The Indian star tortoise is popular as a pet and a spiritual symbol, largely because of its striking shell that has a star-like radiating pattern of yellow and black.
- Each star tortoise costs about Rs. 10,000 in the International Market
- Star tortoises survive in an extremely harsh environment. They inhabit the hot dry scrubland areas of central and southern India

Monitor Lizard

- Monitor lizards are large lizards in the genus Varanus
- They are native to Africa, Asia, and Oceania
- Monitor lizards have long necks, powerful tails and claws, and well-developed limbs.
- Common Indian monitor is found widely distributed over the Indian Subcontinent
- It is mainly terrestrial . Length 60-175 cm
- Preying mainly on arthropods, birds, eggs and fish They have keen eyesight and can detect human movement nearly 250 m away.
- The Bengal monitor is listed as Appendix I of CITES and Schedule I of the 1972 Wildlife Protection Act. The wild population is decreasing as it is hunted for both consumption and medicinal purposes

Pygmy hog

- The pygmy hog (Porcula salvania) is a suid native to alluvial grasslands in the foothills of the Himalayas at elevations of up to 300 m (980 ft). Today, the only known population lives in southern Bhutan and in Assam, India.
- It is a critically endangered species.
- It was thought to have extinct but re-discovered with a small population in the Barnadi Wildlife Sanctuary.
- Population estimated less than 200
- The only viable population of the pygmy hog in the wild is in the Manas Tiger Reserve in Assam.
- It is an indicator species. Its presence reflects the health of its primary habitat, the tall, wet grasslands of the region.

Spider Monkey

- **Spider monkeys** are New World **monkeys** belonging to the genus Ateles
- They are found in tropical forests of Central and South America, from southern Mexico to Brazil.
- They have long, lanky arms and prehensile (gripping) tails that enable them to move gracefully from branch to branch and tree to tree. These nimble **monkeys** spend most of their time aloft, and maintain a powerful grip on branches even though they have no thumbs.
- They were named **spider monkeys** because they look like spiders as they hang upside down from their tails with their arms and legs dangling.

Q8/A2013

- Which of the following can be found as pollutants in the drinking water in some parts of India?

  1. Arsenic
  2. Sorbitol
  3. Fluoride
  4. Formaldehyde
  5. Uranium

  Select the correct answer using the codes given below

  A) 1 and 3 only
  B) 2, 4 and 5 only
  C) 1,3 and 5 only
  D) 1,2, 3, 4 and 5

Major Water Pollutants

- There are four main categories of water pollution: pathogens, inorganic compounds, organic material and macroscopic pollutants.

- Aluminium.
- Arsenic.
- Cadmium.
- Chromium.
- Uranium
- Mercury
- Ammonia.
- Barium.
- Chloramine.
- Copper.
- Lead
- Perchlorate

Q9/A2013

- With reference to Indian History, the Members of the Constituent Assembly from the Provinces were

  A) directly elected by the people of those Provinces

  B) nominated by the Indian National Congress and the Muslim League

  C) elected by the Provincial Legislative Assemblies

  D) selected by the Government for their expertise in the constitutional matters

Constituent Assembly from Provinces

- The total membership of the Constituent Assembly was 389 of which 292 were representatives of the states, 93 represented the princely states and four were from the chief commissioner provinces of Delhi, Ajmer-Merwara, Coorg and British Baluchistan.
- The members of the Constituent Assembly were elected by the provincial assemblies by a single, transferable-vote system of proportional representation.
- The elections for the 296 seats assigned to the British Indian provinces were completed by August 1946. Congress won 208 seats, and the Muslim League 73.
- B R Ambedkar was elected to the Constituent Assembly from West Bengal with the help of Muslim League. Jogendra Nath Mandal had supported Ambedkar. Mr Mandal went to Pakistan and became Law Minister

Q10/A2013

- Consider the following animals:

  1. Sea cow
  2. Sea horse
  3. Sea Lion

  Which of the above is/are mammal/mammals?

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

Sea horse

- Seahorses are **fish**.
- They live in water, breath through gills and have a swim bladder.
- They do not have caudal fins and have a long snake-like tail.
- They also have a neck and a snout that points down.
- **Seahorses** swim vertically, lack pelvic fins, have bony plates over their bodies, and move their eyeballs independently.
- The males carry babies and give birth to them instead of females.

Sea lion

- Sea lions are marine mammals.
- Mammals are warm-blooded vertebrates that have body hair or fur and give birth to live young.
- Sea lions get their name from the mane of coarse long hair around the face.
- These sea lions are able to rotate their hind flippers forward, which allow them to support their entire weight when walking on all flippers.
- The sea lions' coat colour changes as they grow.
- sea lions live in the Northern Pacific between Asia and North America and off the coasts of South America, Antarctica, southwestern Africa and southern Australia.

Sea Cow

- Sea cow is extinct mammal about 250 years ago
- The manatee was a large marine mammal with an egg-shaped head, flippers and a flat tail.
- Manatees are also known as sea cows. This name is apt, due to their large stature; slow, lolling nature; and propensity to be eaten by other animals.

Q11/A2013

- Consider the following statements:
  1. An amendment to the Constitution of India can be initiated by an introduction of a bill in the Lok Sabha only
  2. If such an amendment seeks to make changes in the federal character of the Constitution, the amendment also requires to be ratified by the legislature of all the States of 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

Amendment of the Constitution

- Amending the Constitution of India is the process of making changes to the nation's fundamental law or supreme law.
- The procedure of amendment in the constitution is laid down in Part XX (Article 368) of the Constitution of India. This procedure ensures the sanctity of the Constitution of India and keeps a check on arbitrary power of the Parliament of India.
- As of January 2020, there have been 104 amendments of the Constitution of India since it was first enacted in 1950.
- There are three types of amendments to the Constitution of India of which second and third type of amendments are governed by Article 368.

Amendment to Constitution

- An amendment of the Constitution can be initiated only by the introduction of a Bill in either House of Parliament.
- The Bill must then be passed in each House by a majority of the total membership of that House and by a majority of not less than two-thirds of the members of that House present and voting.
- This is known as special majority.
- There is no provision for a joint sitting in case of disagreement between the two Houses.
- The Bill, passed by the required majority, is then presented to the President who shall give his assent to the Bill.

Amendment to Constitution

- If the amendment seeks to make any change in any of the provisions mentioned in the provision to article 368, it must be ratified by the Legislatures of not less than one-half of the States.
- Although there is no prescribed time limit for ratification, it must be completed before the amending Bill is presented to the President for his assent

Q12/A2013

- Consider the following statements:
  Attorney General of India can
  1. take part in the proceedings of the Lok Sabha
  2. be a member of a committee of the Lok Sabha
  3. Speak in the Lok Sabha
  4. Vote in the Lok Sabha

  Which of the statements given above is/are correct?

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

Attorney General

- The Attorney General of India is the highest law officer of the country. He is responsible to assist the government in all its legal matters.
- The President appoints the Attorney General (AG). The person who is appointed should be qualified to be appointed a judge of the Supreme Court.
- Attorney general is appointed by President,
  Advocate general is appointed by the Governor of the state (article 165).
- The advocate general holds the office during the pleasure of the Governor and his remuneration is decided by Governor of the state in question.

Attorney General

- The salary of Attorney General is equivalent to Supreme Court Judge.
- Article 76 of the Indian Constitution under its Part-V deals with the position of Attorney General of India.
- He also is the primary lawyer representing Union Government in the Supreme Court of India.
- The Constitution mentions no specified tenure of Attorney General. Similarly, the Constitution also does not mention the procedure and ground of his removal. He can be removed by the President at any time
- He got the right to speak and to take part in the proceedings of both the Houses of Parliament
- He has no right to vote when he participates in the proceedings of the Indian Parliament

Q13/A2013

- With reference to the usefulness of the by-products of sugar industry, which of the following statements is/are correct?

  1. Bagasse can be used as biomass fuel for generation of energy
  2. Molasses can be used as one of the feedstocks for the production of synthetic chemical fertilizers
  3. Molasses can be used for the production of ethanol

  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

By Products of Sugar Industry

- The four main by products of the sugarcane industry are cane tops, bagasse, filter muds and molasses
- Bagasse is the dry pulpy fibrous residue that remains after sugarcane or sorghum stalks are crushed to extract their juice.
- It is used as a biofuel for the production of heat, energy, and electricity, and in the manufacture of pulp and building materials.
- Sugarcane press mud is the residue of the filtration of sugarcane juice.
- The fibre left after extracting juice is called bagasse.
- The extracted juice is processed further with chemicals and crystallized. The by product left after the crystals are separated is a called molasses.
- This molasses will be fermented and distilled to produce alcohol.

Q14/A2013

- Variations in the length of daytime and nighttime from season to season are due to

A) the earth's rotation on its axis
B) the earth's revolution round the sun in an elliptical manner
C) Latitudinal position of the place
D) revolution of the earth on a tilted axis

Length of Day and Night

- The change between day and night is caused by the rotation of the Earth on its axis.
- The changing lengths of days and nights depends on where you are on Earth and the time of year.
- Also, daylight hours are affected by the tilt of the Earth's axis and its path around the sun.
- The June solstice is June 20. Longest day for the Northern Hemisphere. Shortest day for the Southern Hemisphere.
- On Earth, a solar day is around 24 hours. Another way to measure a day is to count the amount of time it takes for a planet to completely spin around and make one full rotation. This is called a sidereal day. On Earth, a sidereal day is almost exactly 23 hours and 56 minutes.

Q15/A2013

- The Narmada river flows to the west, while most other large peninsular rivers flow to the east. Why?

  1. It occupies a linear rift valley
  2. It flows between the Vindhyas and Satpuras
  #. The land slopes to the west from Central India

  Select the correct answer using the codes given below.

  A) 1 only
  B) 2 and 3
  C) 1 and 3
  D) None

Narmada River

- The Narmada River is in central India.
- It is known as life line of Madhya Pradesh and Gujarat
- Narmada rises from Amarkantak Plateau near Anuppur district of Madhya Pradesh
- It flows westwards over a length of 1312 km before draining through the Gulf of Khambhat into Arabian Sea, near Bharuch city of Gujarat.
- It is one of the three major rivers in peninsular India that run from east to west along with the Tapti River and the Mahi River
- Narmada is a Sanskrit word meaning 'the Giver of Pleasure'

Q16/A2013

- On the planet earth, most of the freshwater exists as ice caps and glaciers. Out of the remaining freshwater, the largest proportion

  A) is found in atmosphere as moisture and clouds
  B) is found in freshwater lakes and rivers
  C) exists as groundwater
  D) exists as soil moisture

Fresh Water

- **Fresh water** is any naturally occurring **water** except seawater and brackish **water**. Only 2.5% water on earth is fresh water
- **Fresh water** includes **water** in ice sheets, ice caps, glaciers, icebergs, bogs, ponds, lakes, rivers, streams, and even underground **water** called groundwater.
- **Fresh water** is not the same as potable **water** (or drinking **water**).
- Glaciers and ice caps: 68.7%
  Ground Water: 30.1%
  Surface Water: 1.2% (69% in ice and permafrost, 20.9% in lakes, Rivers 0.49% Swamps marshes 2.6%)
  Atmosphere 3%

Q17/A2013

- Consider the following pairs:

1. Nokrek Bio-Reserve :: Garo Hills
2. Logtak Lake. :: Barail Range
3. Namdapha National Park :: Dafla Hills

Which of the above pairs is/are correctly matched?

A) 1 only
B) 2 and 3 only
C) 1,2 and 3
D) None

Nokerk Bio-Reserve

- Nokrek National Park, the core area of Nokrek Biosphere Reserve is a national park located in West Garo Hills in Meghalaya.
- UNESCO added this National Park to its list of Biosphere Reserves in 2009
- Nokrek is a hotspot of biodiversity in Meghalaya
- Nokrek has a remnant population of the red panda
- Nokrek is also an important habitat of the Asian Elephant.
- Nokrek has 8 species of cat- tiger, marbled cat ; 7 species of Primates: stump-tailed macaque, Hoolocks
- Nokrek also has National citrus Gene Sanctuary-cum-Biosphere

Logtak Lake.

- Loktak Lake is the largest freshwater lake in Northeast India and is famous for the phumdis floating over it. The lake is located at Moirang in Manipur state, India.
- the largest freshwater (sweet) lake in North-East India, also called the only Floating lake in the world due to the floating phumdis (heterogeneous mass of vegetation, soil, and organic matters at various stages of decomposition) on it.
- This ancient lake plays an important role in the economy of Manipur.
- Wular Lake, located in the state of Jammu and Kashmir, is often referred to as the largest freshwater lake in India. Wular is a natural lake that is a major part of the Jhelum River basin.

Namdapha National Park

- Namdapha National Park is a 1,985 km^2 in Arunachal Pradesh.
- With more than 1,000 floral and about 1,400 faunal species it is a biodiversity hotspot
- It is the fourth largest national Park in India.
- Namdapha was originally declared a Wildlife Sanctuary in 1972, then a National Park in 1983 and became a Tiger Reserve under the Project Tiger scheme in the same year.
- The land cover changes with increasing elevation from Tropical evergreen forest to temperate broadleaf and mixed forests. It also have extensive bamboo forests.
- The Namdhapa flying squirrel is endemic to the park and critically endangered.
- The park has about 425 species of birds

Q18/A2013

- Consider the following:

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

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

A) 1,2,3 and 4 only
B) 1,3,5 and 6 only
C) 2, 4, 5 and 6 only
D) 1,2,3,4,5 and 6

Q19/A2013

- Which of the following bodies does not/do not find mention in the Constitution?

  1. National Development Council
  2. Planning Commission
  3. Zonal Councils

  Select the correct answer using the codes given below.

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

Q20/A2013

- The demand for Tebhaga Peasant Movement in Bengal was for

  A) the reduction of the share of the landlords from one-half of the crop to one-third

  B) the grant of ownership of land to peasants as they were the actual cultivators of the land

  C) the uprooting of Zamindari system and the end of serfdom

  D) writing off all peasant debts

Tebhaga Peasant Movement

- The **Tebhaga movement** was significant peasant agitation, initiated in Bengal by the Kisan Sabha in 1946–47.
- They asserted that they would not pay half of the produce but only one-third of the produce
- Young Communists went out to the countryside to organize peasants to take the harvested crop to their own threshing floor and make the two-thirds share a reality.
- The **slogan**, "Adhi noy, **Tebhaga** chai" (we want two-thirds share not 1/2) rent the sky.
- The prominent leaders of the **movement** were: Kansari Halder, Ashoke Bose and Rash Behari Ghosh.

Q21/A2013

- The Parliament can make any law for whole or any part of India for implementing international treaties

  A) with the consent of all the States

  B) with the consent of the majority of States

  C) with the consent of the States concerned

  D) without the consent of any State

Q22/A2013

- In the grasslands, trees do not replace the grasses as a part of an ecological succession because of

A) insects and fungi

B) limited sunlight and paucity of nutrients

C) water limits and fire

D) None of the above

Grass Lands

- Grassland biomes consist of large open areas of grass. Trees if present but are very infrequent
- In grassland regions, the climate is ideal for the growth of grasses only.
- Low rainfall, wildland fires, and grazing by animals are three factors that maintain grasslands.
- The grassland seems like an endless ocean of grass.
- Grassland soil tends to be deep and fertile. The roots of perennial grasses usually penetrate far into the soil.
- While temperatures are often extreme in some grasslands, the average temperatures are about -20° C to 30° C. Tropical grasslands have dry and wet seasons that remain warm all the time. Temperate grasslands have cold winters and warm summers with some rain.

Q23/A2013

- Which one of the following is the correct sequence of ecosystems in the order of decreasing productivity?

  A) Oceans, Lakes, grasslands, Mangroves

  B) Mangroves, oceans, grasslands, Lakes

  C) Mangroves, grasslands, lakes, oceans

  D) Oceans, mangroves, Lakes grasslands

Q24/A2013

- Contour bunding is a method of soil conservation used in

  A) desert margins, liable to strong wind action

  B) low flat plains, close to stream courses, liable to flooding

  C) scrublands, liable to spread od weed growth

  D) None of the above

Contour bunding

- Contour bunding (or contour bundling), which involves the placement of lines of stones along the natural rises of a landscape, and contour farming.
- These techniques help to capture and hold rainfall before it can become runoff.
- They also inhibit wind erosion by keeping the soil.
- Contour ploughing is the farming practice of plowing and or planting across a slope following its elevation contour lines.
- In contour plowing, the ruts made by the plow run perpendicular rather than parallel to the slopes.
- Contour ploughing mitigates the impacts of floods, storms and landslides on the crops

Q25/A2013

- The Government enacted the Panchayat Extension to Scheduled Areas (PESA) Act in 1996. Which one of the following is not identified as its objective?

  A) To provide self-governance

  B) To recognize traditional rights

  C) To create autonomous regions in tribal areas

  D) To free tribal people from exploitation

Scheduled Areas

- “Scheduled Areas” mean the Scheduled Areas as referred to in Clause (1) of Article 244 of the Constitution. The Fifth Schedule of the Constitution of India, which mentions Scheduled Areas, is termed as a "Constitution within a Constitution".
- The Act extended the provisions of Panchayats to the tribal areas of ten states that have Fifth Schedule Areas.
- The Fifth schedule gives to the governors of the ten scheduled area states very important functions.
- As per para 3 of the Fifth Schedule "the Governor of each State having Scheduled Areas therein shall annually, or whenever so required by the President, make a report to the President regarding the administration of the Scheduled Areas in that State and the executive power of the Union shall extend to the giving of directions to the State as to the administration of the said areas."

Panchayat Extension to Scheduled Areas (PESA) Act

- The Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996 or PESA is a law enacted by the GOI for ensuring self governance through traditional Gram Sabhas for people living in the Scheduled Areas of India.
- Scheduled Areas are areas identified by the Fifth Schedule of the Constitution of India.
- Scheduled Areas are found in ten states of India which have predominant population of tribal communities.
- The Scheduled Areas, were not covered by the 73rd Constitutional Amendment or Panchayat Raj Act of the Indian Constitution as provided in the Part IX of the Constitution.

PESA Act

- PESA sought to enable the Panchayats at appropriate levels and Gram Sabhas to implement a system of self-governance with respect to a number of issues such as customary resources, minor forest produce, minor minerals, minor water bodies, selection of beneficiaries, sanction of projects, and control over local institutions.
- PESA is an Act to provide for the extension of the provisions of Part IX of the Constitution relating to the Panchayats and the Scheduled Areas.
- The loss of access to forest, land, and other community resources had increased their vulnerability. Rampant land acquisition and displacement due to development projects had led to large scale distress in tribal communities living in Scheduled Areas.

Q26/A2013

- Under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, who shall be the authority to initiate the process for determining the nature and extent of individual or community forest rights or both?

  A) State Forest Department

  B) District Collector/Deputy Commissioner

  C) Tahsildar/Block Development Officer/Mandal Revenue Officer

  D) Gram Sabha

Forest Rights Act

- The Scheduled Tribes and Other Traditional **Forest** Dwellers (Recognition of **Forest Rights**) Act, 2006 (FRA) legally recognises the **rights** of communities like the Dongria Kondh to live in and from their **forests** and to protect and manage their lands.
- **Forest Rights** are essential for India's tribal peoples.
- Under the Forest Rights Act, 2006, the Gram Sabha has been assigned the following roles for implementing the provisions of the Act:
  - Determining the forest rights
  - To recommend developmental projects
  - Consider resettlements
  - To protect wild life, forest, biodiversity, water resources etc

Q27/A2013

- Improper handling and storage of cereal grains and oilseeds result in the production of toxins known as aflatoxins which are not generally destroyed by normal cooking process. Aflatoxins are produced by

  A) Bacteria

  B) Protozoa

  C) Molds

  D) Viruses

Aflatoxins

- Aflatoxins are a family of toxins produced by certain fungi that are found on agricultural crops such as maize (corn), peanuts, cottonseed, and tree nuts.
- The main fungi that produce aflatoxins are Aspergillus flavus and Aspergillus parasiticus, which are abundant in warm and humid regions of the world.
- Aflatoxin: A toxin produced by mold that can damage the liver and may lead to liver cancer. Aflatoxins cause cancer in some animals.
- Children are particularly affected by aflatoxin exposure, which is associated with stunted growth, delayed development, liver damage, and liver cancer

Q28/A2013

- 'Economic Justice' as one of the objectives of the Indian Constitution has been provided in

  A) the Preamble and the Fundamental Rights

  B) the Preamble and the Directive Principles of State Policy

  C) the Fundamental Rights and Directive Principles of State Policy

  D) None of the above

Q29/A2013

- Due to improper/indiscriminate disposal of old and used computers or their parts, which of the following are released into the environment as e-waste?

1. Beryllium
2. Cadmium
3. Chromium
4. Heptachlor
5. Mercury
6. Lead
7. Plutonium

Select the correct answer using the codes given below.

A) 1,3,4,6 and 7 only
B) 1,2,3,5 and 6 only
C) 2,4,5 and 7 only
D) 1,2,3,4,5,6 and 7

E-Waste

- **Electronic waste** or **e-waste** describes discarded electrical or electronic devices.
- Used electronics which are destined for refurbishment, reuse, resale, salvage recycling through material recovery, or disposal are also considered e-waste
- CPUs contain potentially harmful materials such as lead, cadmium, beryllium.
- CRTs have a relatively high concentration of lead and phosphors
- In 2018 e-waste was estimated to be 50million tonnes in the world.

Q30/A2013

- Acid rain is caused by the pollution of environment by

A) carbon dioxide and nitrogen
B) carbon monoxide and carbon dioxide
C) Ozone and carbon dioxide
D) nitrous oxide and Sulphur dioxide

Acid Rain

- Acid rain, or acid deposition, is a broad term that includes any form of precipitation with acidic components, such as sulfuric or nitric acid that fall to the ground from the atmosphere in wet or dry forms. This can include rain, snow, fog, hail or even dust that is acidic.
- The ecological effects of acid rain are most clearly seen in aquatic environments, such as streams, lakes, and marshes where it can be harmful to fish and other wildlife. As it flows through the soil, acidic rain water can leach aluminium from soil clay particles and then flow into streams and lakes.
- While acid rain is most prevalent where emissions of sulfur dioxide and nitrogen oxide are high, especially in industrial countries, it can occur anywhere on Earth as winds blow emissions many miles from their sources.

Q31/A 2013

- With reference to food chains in ecosystems, consider the following statements:

  1. A food chain illustrates the order in which a chain of organisms feed upon each other
  2. Food chains are found within the populations of a species
  3. A food chain illustrates the number of each organism which are eaten by others

  Which of the statements given above is/are correct?

  A) 1 only
  B) 1 and 2 only
  C) 1,2 and 3
  D) None

Food Chain

- Food chain, in ecology, the sequence of transfers of matter and energy in the form of food from organism to organism. Food chains intertwine locally into a food web because most organisms consume more than one type of animal or plant.
- Food chains intertwine locally into a food web because most organisms consume more than one type of animal or plant.
- In a predator chain, a plant-eating animal is eaten by a flesh-eating animal.
- It is important for us to understand how the food chain works so that we know what are the important living organisms that make up the food chain and how the ecology is balanced.

Q32/A2013

- Consider the following pairs:

NATIONAL PARK		RIVER FLOWING THROUGH THE PARK
1. Corbett National Park	::	Ganga
2. Kaziranga National Park	::	Manas
3. Silent Valley National Park	::	Kaveri

Which of the above pairs is/are correctly matched?

A) 1 and 2
B) 3 only
C) 1 and 3
D) None

Corbett National Park

- Jim Corbett National Park is the oldest national park in India and was established in 1936 as Hailey National Park to protect the endangered Bengal tiger.
- It is located in Nainital district and Pauri Garhwal district of Uttarakhand and was named after Jim Corbett, a well known hunter and naturalist.
- Corbett National Park comprises 520.8 km^2 area of hills, riverine belts, marshy depressions, grasslands and a large lake. The elevation ranges from 1,300 to 4,000 ft
- Forest type: Moist deciduous – Sal, haldu, peepal rohini and mango trees; 10% of the area consists of grasslands. It houses around 110 tree species, 50 species of mammals, 580 bird species and 25 reptile species.

Kaziranga National Park

- Kaziranga National Park is a national park in the Golaghat, Karbi Anglong and Nagaon districts of the state of Assam.
- Kaziranga National Park in Assam is the world's largest habitat for the great one-horned rhinos. It is a UNESCO's world heritage site.
- The One-Horned rhinoceros, Royal Bengal Tiger, Asian elephant, wild water buffalo and swamp deer are collectively known as 'Big Five' of Kaziranga. Kaziranga is one of the few wild breeding areas outside Africa for multiple species of large cats, such as Bengal tigers and leopards.

Silent Valley National Park

- Silent Valley National Park is a national park in Kerala, India. It is located in the Nilgiri hills, has a core area of 89.52 km^2.
- Silent Valley National Park is situated in the core of the Nilgiri Biosphere Reserve.
- The British named the area Silent Valley because of a perceived absence of noisy cicadas.
- There are at least 34 species of mammals including the threatened lion-tailed macaque, Niligiri langur, Malabar giant squirrel, Nilgiri tahr, Peshwa's bat (Myotis peshwa) and hairy-winged bat. There are nine species of bats, rats and mice.
- It is home to the largest population of lion-tailed macaques, an endangered species of primate.

Q33/A2013

- Consider the following organisms:

  1. Agaricus
  2. Nostoc
  3. Spirogyra

  Which of the above is/are used as biofertilizer/ biofertilizers?

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

Biofertilizers

- Biofertilizers are the substance that contains microbes, which helps in promoting the growth of plants, trees by increasing the supply of essential nutrients to the plants. It comprises living organisms which include mycorrhizal fungi, blue-green algae, and bacteria.
- Rhizobium, Azotobacter, Azospirillum and blue green algae(BGA) have been traditionally used as Biofertilizers
- Rhizobiuminoculant is used for leguminous crops such as pulses.
- Azotobacter can be used with crops like wheat, maize, mustard, cotton, potato and other vegetable crops.

Q34/A2013

- Which of the following adds/add nitrogen to the soil?

  1. Excretion of urea by animals
  2. Burning of coal by man
  3. Death of vegetation

  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

Nitrogen Cycle

- Nitrogen cycle is a continuous series of natural processes by which nitrogen passes successively from air to soil to organisms and back to air or soil involving principally nitrogen fixation, nitrification, decay, and denitrification.

- Fixation is the first step in the process of making nitrogen usable by plants. Here bacteria change nitrogen into ammonium. Nitrification - This is the process by which ammonium gets changed into nitrates by bacteria. Nitrates are what the plants can then absorb.

- An example of free-living bacteria is Azotobacter. Symbiotic nitrogen-fixing bacteria such as Rhizomium usually live in the root nodules of Legumes (such as peas, alfalfa, and locust trees).

Nitrogen Cycle

- There are 5 stages of Nitrogen Cycle
  - Nitrogen fixation (N2 to NH3/ NH4+ or NO3-)
  - Nitrification (NH3 to NO3-)
  - Assimilation (Incorporation of NH3 and NO3- into biological tissues)
  - Ammonification (organic nitrogen compounds to NH3)
  - Denitrification(NO3- to N2)

Q35/A2013

- In which of the following States is Lion-tailed macaque found in its natural habitat?

  1. Tamil Nadu
  2. Kerala
  3. Karnataka
  4. Andhra Pradesh

  Select the correct answer using the codes given below

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

Lion-tailed macaque

- The lion-tailed macaque (Macaca silenus), or the wanderoo, is an Old World monkey
- A species that's endemic to western ghats of India, spread across tamilnadu, kerala and karnataka. Total population in the wild is estimated around 3000+
- The hair of the lion-tailed macaque is black. Its outstanding characteristic is the silver-white mane which surrounds the head from the cheeks down to its chin, which gives this monkey its German name Bartaffe - "beard ape". The hairless face is black in colour.
- The lion-tailed macaque or the bearded ape feed on fruits, seeds, young leaves, stems, flowers and buds.

Q36/A2013

- Some Buddhist rock-cut caves are called Chaityas, while the others are called Viharas. What is the difference between the two?

  A) Vihara is a place of worship, while Chaitya is the dwelling place of the monks

  B) Chaitya is a place of worship, while Vihara is the dwelling place of the monks

  C) Chaitya is the stupa at the far end of the cave, while Vihara is the hall axial to it

  D) There is no material difference the two

Chaityas & Viharas

- Chaitya were prayer halls, with pillars on both the sides and Stupa placed at the end.
- Whereas viharas were places where Buddhist monks stayed for some time during rainy season.
- These were generally on story building, but at some places multiple storied viharas have also been found.
- Chaityas were assemblies for the purpose of discussions. Further, Chaityas were with Stupas,
- Viharas did not have stupas.
- The stupas are carved with symbols of Buddha footprint, bodhi tree, parasol or vase.

Q37/A2013

- Which one of the following describes best the concept of Nirvana in Buddhism?

  A) The extinction of the flame of desire

  B) The complete annihilation of self

  C) A state of bliss and rest

  D) A mental stage beyond all comprehension

Nirvana in Buddhism

- Nirvana is the ultimate spiritual goal in Buddhism and marks the soteriological release from rebirths.
- The literal meaning of the term Nirvana is "blowing out" or "quenching".
- 8 Steps to Nirvana: Following the Noble Eightfold Path leads to liberation in the form of nirvana: Just this noble eightfold path: right view, right aspiration, right speech, right action, right livelihood, right effort, right mindfulness, right concentration.
- Buddhist monks spend a lot of time in solemn meditation, but most are also jovial and light-hearted much of the time. Buddhists who achieve nirvana on their own become buddhas, awakened ones

Q38/A2013

- According to the Constitution of India, which of the following are fundamental for the governance of the country?

  A) Fundamental Rights

  B) Fundamental Duties

  C) Directive Principles of State Policy

  D) Fundamental Rights and Fundamental Duties

Governance

- Governance refers to a process whereby elements in society wield power, authority and influence and enact policies and decisions concerning public life and social upliftment."
- Many of the elements and principles underlying "good government" have become an integral part of the meaning of "governance".
- Governance is defined as the decisions and actions of the people who run a school, nation, city or business. An example of governance is the mayor's decision to increase the police force in response to burglaries.
- Good governance is at the heart of any successful business. It is essential for a company or organisation to achieve its objectives and drive improvement, as well as maintain legal and ethical standing in the eyes of shareholders, regulators and the wider community.
- 4 Ps of Governance: People, purpose, process and performance

Q39/A2013

- The people of India agitated against the arrival of Simon Commission because

  A) Indians never wanted the review of the working of the Act of 1919

  B) Simon Commission recommended the abolition of Dyarchy in the Provinces

  C) There was no Indian member in the Simon Commission

  D) The Simon Commission suggested the partition of the country

Simon Commission

- The Simon Commission was a group of 7 MPs from Britain who was sent to India in 1928 to study constitutional reforms and make recommendations to the government. The Commission was originally named the Indian Statutory Commission. It came to be known as the Simon Commission after its chairman Sir John Simon
- The Commission was strongly opposed by many Indians.
- It was opposed by Nehru, Gandhi, Jinnah, The Muslim League and Indian National Congress
- It was opposed as the commission had seven members of the British Parliament but no Indians.

- Quit India Movement was launched in response to

A) Cabinet Mission Plan

B) Cripps Proposal

C) Simon Commission Report

D) Wavell Plan

Quit India Movement

- The Quit India Movement , also known as the August Movement, was a movement launched at the Bombay session of the All-India Congress Committee by Mahatma Gandhi on 8 August 1942, demanding an end to British Rule of India. Phrase of 'do or die' was infused.
- The next day, Gandhi, Nehru and many other leaders of the Indian National Congress were arrested by the British Government.
- Aruna Asaf Ali (1909 –1996) was an Indian educator, political activist, and publisher. An active participant in the Indian independence movement, she hoisted the Indian National flag at the Gowalia Tank maidan, Bombay during a Quit India Movement in 1942.
- The Quit India campaign was effectively crushed.
- Hindu nationalist parties like the Hindu Mahasabha opposed the Quit India Movement and boycotted it.

Q41/A2013

- The balance of payments of a country is a systematic record of

  A) all import and export transactions of a country during a given period of time, normally a year

  B) goods exported from a country during a year

  C) economic transaction between the government of one country to another

  D) capital movements from one country to another

Balance of Payment

- The balance of payments (BOP) is a statement of all transactions made between entities in one country and the rest of the world over a defined period of time, such as a year.

- When funds go into a country, a credit is added to the balance of payments ("BOP"). When funds leave a country, a deduction is made. For example, when India exports 20 tons of rice to UAE a credit is made in the balance of payments.

- BOP examines the transaction of all the export and import of goods and services for a given period. It helps the government to analyse the potential of a particular industry export growth and formulate policy to support that growth.

Q42/A2013

- The Reserve Bank of India regulates the commercial banks in matters of

  1. liquidity of assets
  2. branch expansion
  3. merger of banks
  4. winding-up of banks

  Select the correct answer using the codes given below

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

RBI controlling Banks

- The RBI carries out India's monetary policy and exercises supervision and control over banks and non-banking finance companies in India.

PREAMBLE OF RBI

”to regulate the issue of Bank notes and keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage; to have a modern monetary policy framework to meet the challenge of an increasingly complex economy, to maintain price stability while keeping in mind the objective of growth.”

Q43/A2013

- An increase in the Bank Rate generally indicates that the

  A) market rate of interest is likely to fall

  B) Central Bank is no longer making loans to commercial banks

  C) Central Bank is following an easy money policy

  D) Central Bank is following a tight money policy

Bank Rate

- A bank rate is the interest rate at which a nation's central bank (RBI) lends money to domestic banks, often in the form of very short-term loans
- Repo rate is the rate at which the RBI lends to commercial banks by purchasing securities while bank rate is the lending rate at which commercial banks can borrow from the RBI without providing any security.
- Bank Rate is also called Discount Rate
- Bank Rate is more than the Repo Rate as it is a loan without securities.

Q44/A2013

- In India, deficit financing is used for raising resources for

  A) economic development

  B) redemption of public debt

  C) adjusting the balance of payments

  D) reducing the foreign debt

Deficit Financing

- Deficit financing, practice in which a government spends more money than it receives as revenue, the difference being made up by borrowing or minting new funds.

TYPES OF DEFICIT FINANCING

- Budget deficit = total expenditure – total receipts.
- Revenue deficit = revenue expenditure – revenue receipts.
- Fiscal Deficit = total expenditure – total receipts except borrowings.
- Primary Deficit = Fiscal deficit- interest payments.

Q45/A2013

- Which of the following characterizes/characterize the people of Indus Civilization?

  1. They possessed great palaces and temples
  2. They worshipped both male and female deities
  3. They employed horse-drawn chariots in warfare

  Select the correct statement / statements using the codes given below

  A) 1 and 2 only
  B) 2 only
  C) 1,2 and 3
  D) None of the statements given above is correct

Indus Valley Civilization

- The **Indus Valley Civilisation** (IVC) was a Bronze Age **civilisation** in the northwestern regions of South Asia, lasting from 3300 BCE to 1300 BCE, and in its mature form from 2600 BCE to 1900 BCE.

- NOTED FOR
  - urban planning, a technical and political process concerned with the use of land and design of the urban environment
  - baked brick houses, elaborate drainage systems, water supply systems, and clusters of large, non residential buildings.
  - Houses with kitchen and wells
  - Religion: **Hinduism**, Buddhism and Jainism.
  - Seals found show animals, Shiva and Rudra;
  - Standard weights
  - Presence of wheel made pottery
  - Dancing Girl (Bronze) Mohenjo-daro

Q46/A2013

- Which of the following diseases can be transmitted from one person to another through tattooing?

  1. Chikungunya
  2. Hepatitis B
  3. HIV-AIDS

  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

Chikungunya

- Chikungunya virus is spread to people by the bite of an infected mosquito. The most common symptoms of infection are fever, joint pain, muscle pain, headache, nausea, fatigue and rash and low blood (platelets) count.

- Most people recover fully, with symptoms resolving in three to 10 days. For some people, joint pain may continue for months, or even years.

- Common laboratory tests for chikungunya include for instance RT-PCR and serological tests.

Hepatitis B

- Hepatitis B is an infection of liver.
- It can cause scarring of the organ, liver failure, and cancer.
- It can be fatal if it isn't treated.
- It's spread when people come in contact with the blood, open sores, or body fluids of someone who has the hepatitis B virus.

HIV-AIDS (**human immunodeficiency virus**)

- Acquired immunodeficiency syndrome (AIDS) is a chronic, potentially life-threatening condition caused by the human immunodeficiency virus (HIV). By damaging your immune system, HIV interferes with your body's ability to fight infection and disease.

- The fever, usually one of the first symptoms of HIV, is often accompanied by other mild symptoms, such as fatigue, swollen lymph glands, and a sore throat. At this point the virus is moving into the blood stream and starting to replicate in large numbers.

- Stages of Infection: Infection, Asymptomatic, Symptomatic, AIDS

Q47/A2013

- Which of the following statements is/are applicable to Jain doctrine?

  1. The surest way of annihilating Karma is to practice penance
  2. Every object, even the smallest particle has a soul
  3. Karma is the bane of the soul and must be ended

  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

Jainism

- Jainism is an ancient religion from India that teaches that the way to liberation and bliss is to live lives of harmlessness and renunciation.
- It was founded by Vardhamana Jnatiputra or Nataputta Mahavira (599-527 BC), called Jina (Spiritual Conqueror), a contemporary of Buddha.
- The essence of Jainism is concern for the welfare of every being in the universe and for the health of the universe itself.
- Lord Mahavir was the twenty-fourth and the last Tirthankara of the Jain religion. According to Jain philosophy, all Tirthankaras were born as human beings but they have attained a state of perfection or enlightenment through meditation and self realization. They are the Gods of Jains.

Jainism

- The holy book of Jainism is a collection of texts known as Agam Literature or the Agam Sutras. Jains see these texts, which are the transcriptions of Lord Mahavir's sermons, as sacred documents.

- Jains wear a white mask to cover their mouth, so that they do not swallow any living creature like flies etc. even by accident, while they are talking.

- The Jain word that comes closest to soul is jiva, which means a conscious, living being. For Jains body and soul are different things: the body is just an inanimate container - the conscious being is the jiva.

- In Jainism like Buddhism there is a belief in reincarnation which eventually leads to liberation.

Q48/A2013

- Which one of the following terms describes not only the physical space occupied by an organism, but also its functional role in the community of organisms?

  A) Ecotone

  B) Ecological niche

  C) Habitat

  D) Home range

Niche

- The niche of an organism is the functional role that it plays within an ecosystem.
- The 'ecological niche' is determined by the biotic factors, which comprise of living features such as animals, plants and fungi, and abiotic factors.
- Abiotic factors are non-living environmental features such as sunlight and water availability, and weather and also availability of food and other nutrients.
- The niche of an organism within an ecosystem depends on how the organism responds and reacts to the distribution and abundance of these factors, and in turn how it alters the factors.

Q49/A2013

- Photochemical smog is a resultant of the reaction among

  A) NO_2 , O_3 and peroxyacetyl nitrate in the presence of sunlight

  B) CO, O_2 and peroxyacetyl nitrate in the presence of sunlight

  C) CO, CO_2 and NO_2 at low temperature

  D) High concentration of NO_2 , $O_3$and CO in the evening

Photochemical smog

- Smog is a type of intense air pollution.
- Photochemical smog, often referred to as "summer smog", is the chemical reaction of sunlight, nitrogen oxides and volatile organic compounds in the atmosphere, which leaves airborne particles and ground-level ozone.
- Photochemical smog depends on primary pollutants as well as the formation of secondary pollutants.
- Photochemical smog is due to vehicular emission from internal combustion engines and industrial fumes.
- Pollution level goes up in cities like Delhi due to the process of inversion that traps pollution close to the ground

- Consider the following minerals:
  1. Calcium
  2 Iron
  3. Sodium

  Which of the minerals given above is/are required by human body for the concentration of muscles?

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

Metals in Nutrition

- Trace elements function primarily as catalysts in enzyme systems; some metallic ions, such as iron and copper, participate in oxidation-reduction reactions in energy metabolism.
- Iron, as a constituent of haemoglobin and myoglobin, also plays a vital role in the transport of oxygen.
- Essential trace elements: boron, cobalt, copper, iodine, iron, manganese, molybdenum, and zinc.
- Zinc is found in cells throughout the body. It is needed for the body's defensive (immune) system to properly work. It plays a role in cell division, cell growth, wound healing, and the breakdown of carbohydrates. Zinc is also needed for the senses of smell and taste.

Q51/A2013

- Consider the following statements:
  The Parliamentary Committee on Public Accounts

  1. consists of not more than 25 Members of the Lok Sabha
  2. scrutinizes appropriation and finance accounts of the Government
  3. examines the report of the Comptroller & Auditor General Of India

which of the statements given above is/are correct?

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

Parliamentary Committee on Public Accounts

- The Committee on Public Accounts is the oldest Parliamentary Committee and was first constituted in 1921.
- The Committee consists of 22 Members, 15 Members are elected by Lok Sabha and 7 Members of the Rajya Sabha are associated with it.
- The main function of the committee is to ascertain whether the money granted by parliament has been spent by government within the scope of the demand.
- The committee examine the report of Comptroller and Auditor General after it is laid in the Parliament
- C&AG assists the committee during the course of investigation.

Q52/A2013

- Consider the following Bhakti Saints:
  1. Dadu Dayal
  2. Guru Nanak
  3. Tyagaraja

  Who among the above was/were preaching when the Lodi dynasty fell and Babur took over?

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

Dau Dayal

- Dau Dayal or Dadu Dayal (1544-1603) was a poet saint from Gujarat
- Dadu means brother and Dayal means compassionate one
- He was a religious reformer
- He was against formalism and priest craft
- He was one of the 7 akharas of Vaishnavite Sampradaya of Hindus
- Dadu Anubhav Vani is a compailation of 5000 verses

Guru Nanak

- Guru Nanak was the bhakti saint who witnessed the fall of Lodi dynasty.
- Guru Nanak (1469-1539) was the founder of Sikhism and is the first of the ten Sikh Gurus
- He message was ‘ik onkar’ One God who dwells in everyone of his creations and constitute the eternal truth.
- Nanak's words are registered in the form of 974 poetic hymns or shabda, in the holy text of Sikhisim, the Guru Granth Sahib
- He was born on 15th April 1469 at Nankana Sahib, Punjab Pakistan. He died in 1539 in Kartarpur at the age of 70.

Tyagaraja

- Tyagaraja (1767-1847) was a renowned composer of Carnatric Music.
- He composed Kirtana (Devotional songs) and of ragas.
- Tyagaraja is said to have composed the music and words of thousands of *kriti*.
- He is considered the head of a group of three major composers who flourished at Tanjore in the early 19th century, the others being Muthuswami Dikshitar and Syama Sastri.
- Most of Tyagaraja's songs were in praise of Rama, who, like Krishna, is believed to be an incarnation of the god Vishnu. Tyagaraja became a devotee of Vaishnava at an early age and is regarded as an exponent of *gana-marga*—i.e., salvation through devotional music.

Q53/A2013

- With reference to the food chains in ecosystems, which of the following kinds of organism is/are known as decomposer organism/organisms?

  1. Virus
  2. Fungi
  3. Bacteria

  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

Decomposers

- An organism who decomposes organic material especially a soil bacterium, fungus are called decomposers.
- Some insects and snails are also decomposers
- Fungi, such as the Winter Fungus, eat dead tree trunks. Decomposers can break down dead things.
- Most decomposers are microscopic organisms, including protozoa and bacteria.
- Decomposers include fungi along with invertebrate organisms sometimes called detritivores, which include earthworms, termites, and millipedes.
- Virus is not a decomposer

Q54/A2013

- The most important fishing grounds of the world are found in the regions where

  A) warm and cold atmospheric currents meet

  B) rivers drain out large amounts of freshwater into the sea

  C) warm and cold oceanic currents meet

  D) continental shelf is undulating

Fishing Grounds

- Fishing ground is an area in a body of water where fishes congregate and fishing is usually good.
- More than 70 per cent of the world's fish catch comes from the Pacific Ocean.
- Marine life is found to be best developed in oceans with a temperature lower than 20° C. Both the Atlantic and Pacific coastlines of the middle and high latitudes in" the northern hemisphere are very much indented and are backed by strong relief.
- More than half of the annual fish catch comes from the cold and temperate waters of the northern hemisphere.
- The Atlantic and the Pacific Oceans each account for about 40 per cent of the total, the Indian Ocean 4 per cent, while freshwater fishing amounts to about 15 per cent of the total.

Q55/A2013

- Which of the following is are unique characteristics/characteristic of equatorial forests?

  1. Presence of tall, closely set trees with crowns forming a continuous canopy
  2. Coexistence of a large number of species
  3. Presence of numerous varieties of epiphytes

  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

Equatorial Forests

- The forest in the equatorial region is known as tropical rain forest . It is also known as tropical evergreen forests. They are confined to tropical regions where heavy rainfall occurs throughout the year. All the trees of these forests don't shed their leaves at the same time.

- Characters:
  - High animal and vegetable biodiversity
  - Evergreen trees
  - Dark and sparse undergrowth
  - Scanty Litter
  - Presence of ‘strangler’ creepers ex. Ficus
  - Presence of buttresses: large winged ribs at the base of trunks

Q56/A2013

- Which of the following constitute Capital Account?
  1. Foreign Loans
  2. Foreign Direct Investment
  3. Private Remittances
  4. Portfolio Investment

  Select the correct answer using the codes given below:

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

Capital Account

- The capital account is a record of the inflows and outflows of capital that directly affect a nation's foreign assets and liabilities.
- It is concerned with all international trade transactions between citizens of one country and those in other countries.
- The capital account includes international transfers of ownership
- Ex. TATAs buying a steel plant in UK
- The balance of the capital account is calculated as the sum of the surpluses or deficits of net non-produced, non-financial assets, and net capital transfers.

Q57/A2013

- Consider the following historical places:

  1. Ajanta Caves
  2. Lepakshi Temple
  3. Sanchi Stupa

  Which of the above places is are also known for murul paintings?

  A) 1 only
  B) 1 and 2 only
  C) 1,2 and 3
  D) None

Ajanta Caves

- The Ajanta Caves are approximately 30 rock-cut Buddhist cave monuments which date from the 2nd century BCE to about 480 CE in Aurangabad district of Maharashtra. UNESCO World Heritage Site
- The caves include paintings and rock-cut sculptures described as among the finest surviving examples of ancient Indian Art, particularly expressive paintings that present emotions through gesture, pose and form.
- The Ajanta Caves constitute ancient monasteries and worship-halls of different Buddhist traditions carved into a 75-m wall of rock.
- The caves also present paintings depicting the past lives and rebirths of the Buddha, pictorial tales from Aryasura's *Jatakamala*, and rock-cut sculptures of Buddhist deities.
- these caves served as a monsoon retreat for monks, as well as a resting site for merchants and pilgrims in ancient India

Leepakshi Temple

- The Veerabhadra temple is in Lepakshi in the Anantapur district of the Indian state of Andhra Pradesh. Built in the 16th century, the architectural features of the temple are in the Vijayanagara style.
- There are lot of carvings and paintings. The scenes of Rama and Krishna are depicted
- There is a very large Nandi (Bull) about 200 m away from the temple which is carved from a single block of stone.
- The temple is on granite rock which is in the shape of a tortoise and hence known as Kuma Saila.
- The temple was built in 1530BC by Virupanna Nayaka and Viranna Governors under the Vijayanagar Empire.

Sanchi Stupa

- Sanchi Stupa is a Buddhist complex at Sanchi town.
- The Great **Stupa** at **Sanchi** is one of the oldest stone structures in India, and an important monument of Indian Architecture.
- It was commissioned by the emperor Ashoka in the 3rd century BC
- Sanchi was the venue of his wedding with Devi, daughter of a merchant of Vidisha
- Stupas /Monuments at Sanchi were built by Maurya Empire -3rd BC, Gupta Empire 5th AD and continued till 12th AD.
- The oldest, and also the largest monument, is the Great Stupa also called Stupa No. 1, initially built under the Mauryas, and adorned with one of the Pillars of Ashoka.

Q58/A2013

- With reference to the history of philosophical thought in India, consider the following statements regarding Sankhya school:

  1. Sankhya does not accept the theory of rebirth or transmigration of soul
  2. Sankhya holds that it is the self-knowledge that leads to liberation and not any exterior influence or agent.

  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

Sankhya School

- Sankhya is one of the six āstika schools of Hindu
- Sankhya is one of the major “orthodox” (or Hindu) Indian philosophies.
- The two types of entities of Sāṅkhya are Prakṛti and puruṣa-s, namely Nature and persons.
- Nature is singular, and persons are numerous. Both are eternal and independent of each other.
- Kapila was one of the founders of Sankhya
- It explains creation in a manner where the implicit becomes explicit and where there exists neither production nor destruction.

Six Darshanas

- Hindu philosophy refers to philosophies, world views and teachings that emerged in ancient India. These include six systems (shad-darśana) – Sankhya, Yoga, Nyaya, Vaisheshika, Mimamsa and Vedanta. In Indian tradition, the word used for philosophy is Darshana.
- Five major heterodox (nastika) schools—Jain, Buddhist, Ajivika, Ajñana, and Charvaka.
- Tattva is a Sanskrit word meaning 'principle', 'reality' or 'truth'.

Q59/A2013

- In the context of India, which of the following principles is/are implied institutionally in the parliamentary government?

  1. Members of the Cabinet are Members of the Parliament
  2. Ministers hold office till they enjoy confidence in the Parliament
  3. Cabinet is headed by the Head of the State

  Select the correct answer using the codes given below.

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

Q60/A2013

- The annual range of temperature in the interior of the continents is high as compared to coastal areas. What is/are the reason/reasons?

  1. Thermal difference between land and water
  2. Variation in altitude between continents and oceans
  3. Presence of strong winds in the interior
  4. Heavy rains in the interior as compared to coasts

  Select the correct answer using the codes given below.

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

Q61/2013

- Which of the following is/are the characteristic / characteristics of Indian coal?

  1. High ash content
  2. Low Sulphur content
  3. Low ash fusion temperature

  Select the correct answer using the codes given below

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

Indian Coal

- Bituminous is the most widely used coal. Bituminous type of coal is mostly found in India. It is mostly found in the states of Jharkhand, Orissa, West Bengal, Chhattisgarh and Madhya Pradesh.
- Coal is the main source of energy in India as it fulfils almost 67 per cent of the total commercial energy consumed in the country. This fossil fuel is found in a form of sedimentary rocks and is often known as 'Black Gold'.
- Bituminous carries 60 to 80 per cent of carbon content and a low level of moisture content.
- Sulphur content of Indian coal is, in general, around 0.5 – 1%. Indian coals are more environment and combustion friendly.

Q62/A2013

- Which of the following statements regarding laterite soils of India are correct?

1. They are generally red in colour
2. They are rich in nitrogen and potash
3. They are well-developed in Rajasthan and UP
4. Tapioca and cashew nuts grow well on these soils

Select the correct answer using the codes given below

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

Laterite Soil

- **Laterite** is a **soil** and rock type rich in iron and aluminium and is commonly considered to have formed in hot and wet tropical areas.
- Nearly all **laterites** are of rusty-red coloration, because of high iron oxide content.
- The **laterite soils** are commonly **found** in Karnataka, Kerala, Tamil Nadu, Madhya Pradesh and the hilly areas of Orissa and Assam.
- Laterite soil contain high percentage of acidity, generally coarse in texture and cannot retain moisture and poor in nitrogen and lime.
- When manured and irrigated, some laterites are suitable for growing plantation crops like **tea**, **coffee**, **rubber**, cinchona, **coconut**, arecanut, etc.

Q63/A2013

- Consider the following statements:
  1. Natural gas occurs in the Gondwana beds
  2. Mica occurs in abundance in Kodarma
  3. Dharwars are famous for petroleum

  Which of the statements given above is/are correct?

  A) 1 and 2
  B) 2 only
  C) 2 and 3
  D) None

Gondwana

- Gondwana, historic region in central India, comprising portions of Madhya Pradesh, Telangana, Andhra Pradesh, and Maharashtra states.
- It is inhabited by the Gonds more than 30 lakhs who are Scheduled Tribe.
- Gondwana coal forms India's metallurgical grade as well as superior quality .
- Major coal fields: Korba, Birampur, Johilla
- Shale gas reservoir characteristics of Lower Gondwana deposits in Raniganj basin, India. In-situ gas content and high pressure methane sorption revealed low to moderately saturated shale gas reservoir.

Kodarma

- Kodarma is in Jharkhand.
- Koderma district is rich in minerals. The Koderma district and the Lokai-Indarwa area covers the southern part of Great Mica-Belt of Jharkhand, Bihar and India. Once upon a time Koderma district was famous for its mica production worldwide and the district is known as “Abarakh Nagari”.
- Jharkhand is endowed with vast natural resources specially the vast variety of minerals ranging from Iron ore, Coal, Copper ore, Mica, Bauxite, Fire clay, Graphite, Kyanite, Sillimanite, Lime stone, Uranium & other minerals. Jharkhand is the leading producer of mineral wealth in the country.

Dharwad

- Dharwad is a district in Karnataka
- Dharwad is known for its Dharwad Peda – a milk based sweetmeat.

Q64/A2013

- Consider the following crops:
  1. Cotton
  2. Groundnut
  3. Rice
  4. Wheat

  Which of these are kharif crops?

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

Kharif Crops

- The Kharif crops are associated with the monsoon season.
- Common Kharif crops
  Bajara
  Jowar
  Maize
  Millet
  Rice
  Soybean
  Sugarcane, Cotton, Tea
- Mustard is NOT a kharif crop
- The Kharif cropping season starts with the onset of monsoon and ends when the rainy season is over

Rabi Crops

- The **Rabi crops** are wheat, barley, gram, linseed, Peas rapeseed and mustard.
- Rubber is a Rabi crop
- Rabi crops are sown in winter and harvested in spring in India. Rabi crop is also called winter crop
- A good rain in winter spoils the rabi crop

Q65/A2013

- "Climate is extreme, rainfall is scanty and the people used to be nomadic herders"

  The above statement best describes which of the following regions?

  A) African Savannah
  B) Central Asian Steppe
  C) North American Prairie
  D) Siberian Tundra

Steppe

- Steppe. Climate is too dry to support forest but not dry enough to be a desert
- Steppe are grasslands without trees
  Ex. The prairie of North America
- Steppe can be classified by climate:
  1. Temperate steppe
  2. Subtropical steppe- Has a short wet period
- The world's largest steppe region, often referred to as "the Great Steppe" is found in Eastern Europe and Central Asia

Q66/A2013

- Consider the following statements:

  1. Inflation benefits the debtors
  2. Inflation benefits the bond-holders

  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

Q67/A2013

- Disguised unemployment generally means

  A) Large number of people remain unemployed

  B) alternative employment is not available

  C) marginal productivity of labour is zero

  D) Productivity of workers is low

Disguised unemployment

- Disguised unemployment is a kind of unemployment in which there are people who are visibly employed but are actually unemployed.
- This situation is also known as 'hidden unemployment'. In such a situation more people are engaged in a work than required.
- High growth in population leads to surplus labour, especially in the rural areas is a major cause of disguised unemployment

Q68/A2013

- Consider the following statements:

  1. The Council of Ministers in the Centre shall be collectively responsible to the Parliament
  2. The Union Ministers shall hold the office during the pleasure of the President of India
  3. The Prime Minister shall communicate to the President about the proposals for legislation

  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

Collective Responsibility

- The term '**Collective Responsibility**' means that the Council of Ministers is **collectively** responsible to the Parliament. In other words, all the ministers are equally responsible for any decision which is taken by the Cabinet.
- Cabinet **collective responsibility**, also known as **collective** ministerial **responsibility**, is a constitutional convention in Parliamentary systems that members of the cabinet must publicly support all governmental decisions made in Cabinet, even if they do not privately agree with them.

Q69/A2013

- Consider the following statements:
  1. National Development Council is an organ of the Planning Commission
  2. The Economic and Social Planning is kept in the Concurrent List in the Constitution of India.
  3.The Constitution of India prescribes that Panchayats should be assigned the task of preparation of plans for economic development and social justice.

  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

NDC

- The National Development Council (NDC) or Rashtriya Vikas Parishad is the apex body for decision creating and deliberations on development matters in India
- It is an executive body established by the Government of India in August 1952, which is neither a constitutional nor a statutory body. It is the apex body to take decisions on matters related to approval of five year plans of the country.
- The ex-officio Chairman of the National Development Council is the Prime Minister of India.
- all Cabinet Ministers, Chief Ministers/administrators of all Union Territories are also member of the NDC
- NDC (National Development Council) has been proposed to be abolished

Q70/A2013

- Consider the following statements:
  1. The Chairman and the Deputy Chairman of the Rajya Sabha are not the members of that House.
  2. While the nominated members of the two Houses of the Parliament have no voting right in the presidential election, they have the right to vote in the election of the Vice President

  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

Q71/A2013

- With reference to National Legal Services Authority, consider the following statements:

  1. Its objective is to provide free and competent legal services to the weaker sections of the society on the basis of equal opportunity.
  2. It issues guidelines for the State Legal Services Authorities to implement the legal programmes and schemes throughout the country.

  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

National Legal Services Authority

- The National Legal Services Authority (NALSA) has been constituted under the Legal Services Authorities Act, 1987 to provide free Legal Services to the weaker sections of the society and to organize Lok Adalats for amicable settlement of disputes.
- was formed on 9 November 1995
- to ensure that opportunities for securing justice were not denied to any citizen by reason of economic or other disabilities
- “Access to Justice” for all is the motto of the Legal Services Authorities.

Q72/A2013

- During a thunderstorm, the thunder in the skies is produced by the
  1. meeting of cumulonimbus clouds in the sky
  2. Lightning that separates the nimbus clouds
  3. Violent upward movement of air and water particles

  Select the correct answer using the codes given below:

  A) 1 only
  B) 2 and 3 only
  C) 1 and 3
  D) None of the above produces the thunder

Thundering

- Thunder is a loud, explosive, resounding noise.
- Thunder is caused by lightning, which is essentially a stream of electrons flowing between or within clouds, or between a cloud and the ground.
- As the superheated air cools it produces a resonating tube of partial vacuum surrounding the lightning's path. The nearby air rapidly expands and contracts.
- The amount of electrical energy that flows from the cloud to the ground is so enormous: it's like a very big waterfall of electricity.
- Lightning kills approximately 24 000 people around the world every year. It kills more people than hurricanes, tornadoes or floods.

Q73/A2013

- Consider the following pairs:

TRIBE		STATE
1. Limboo (Limbu)	::	Sikkim
2. Karbi	::	Himachal Pradesh
3. Dongaria kondh	::	Odisha
4. Bonda	::	Tamil Nadu

Which of the above pairs are correctly matched?

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

Tribes

TRIBE	STATE	TRIBE	STATE
Gonds	Chhindwara, MP	Kodava	Mysore Coorg
Bhils	Rajasthan	Toto	Jalpaiguri, WB
Santhal	West Bengal	Irulas	Tamil Nadu
Great Andamanese	Andaman	Nyishi	Arunachal Pradesh
Khasi	Meghalaya	Bodo	Udalgiri, Kokhrajar, Assam
Garo	Meghalaya	Warli	MP, Maharashtra and Gujarat
Angami	Nagaland	Toda	Ooty
Munda	Nagpur	Kurumban	Tamil Nadu
Bhutia	Sikkim	Soliga	BR Hills Karnataka and TN
Chenchu	Andhra Pradesh	Siddis	Karnataka

Q74/A2013

- Consider the following liquid assets:
  1. Demand deposits with the banks
  2. Time deposits with the banks
  3. Savings deposits with the banks
  4. Currency

  The correct sequence of these assets in the decreasing order of liquidity is

  A) 1-4-3-2
  B) 4-3-2-1
  C) 2-3-1-4
  D) 4-1-3-2

Deposits with Bank

- Bank deposits consist of money placed into banking institutions for safekeeping.
- These are Saving Bank Accounts, Current Accounts, Time Deposits etc
- The account holder has the right to withdraw deposited funds, as set forth in the terms and conditions governing the account agreement.
- All deposits are liability to banks

Liquidity

- Liquidity means how quickly you can get your hands on your cash. In simpler terms, liquidity is to get your money whenever you need it.
- Cash, savings account, checkable account are liquid assets because they can be easily converted into cash as and when required.

Q75/A2013

- In the context of Indian economy, "Open Market Operations" refers to

  A) borrowing by scheduled banks from RBI

  B) Lending by commercial banks to industry and trade

  C) purchase and sale of government securities by the RBI

  D) None of the above

Open Market Operations

- Open market operations or OMOs are conducted by the Reserve Bank of India (RBI) by way of sale and purchase of G-Secs (government securities) to and from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis.
- It is resorted to adjust the money supply in the market

Q76/A2013

- Priority Sector Lending by Banks in India constitute the lending to

  A) Agriculture
  B) Micro and small enterprises
  C) weaker sections
  D) All of the above

Priority sector

- **Priority Sector** refers to those **sectors** of the economy which may not get timely and adequate credit.

- **Priority Sector** Lending is an important role given by the Reserve Bank of India (RBI) to the banks for providing a specified portion of the bank lending to few specific **sectors**.

- Priority Sectors
  - Agricultural and Allied Activities
  - Small Scale Industries
  - Small Businesses
  - Education Loan
  - Housing loans
  - Self Help Groups
  - Weaker sections of the society

Q77/A2013

- Which one among the following industries is the maximum consumer of water in India?

  A) Engineering
  B) Paper and Pulp
  C) Textiles
  D) Thermal power

Water as a Resource

- The Industrial water **consumption** is about 10-15% of the total. If we do not consider **agriculture** as an industry then the highest water **consumer** are **Thermal Power Plants** which comprise of 87% of the total industrial water usage or about 8-12% of the total water **consumption**.

- Other Industries which use lot of water are:-
  - Garments and Textiles
  - Meat Production almost 1/3rd of total agricultural production
  - Automotive Manufacturing

Q78/A2013

- To obtain full benefits of demographic dividend, what should India do?

  A) Promoting skill development

  B) Introducing more social security schemes

  C) Reducing infant mortality rate

  D) Privatization of higher education

Demographic Dividend

- Demographic dividend 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, and 65 and older)"
- In order for economic growth to occur the younger population must have access to quality education, adequate nutrition and health including access to sexual and reproductive health.
- The working human capital must be skilled to have the benefit of working population.

Q79/A2013

- In the context of cultural history of India, a pose in dance and dramatics called 'Tribhanga' has been a favourite of Indian artists from ancient times till today. Which one of the following statements best describes this pose?

  A) One leg is bent and the body is slightly but oppositely curved at waist and neck
  B) Facial expressions, hand gestures and make-up are combined to symbolize certain epic or historic characters
  C) Movements of body, face and hands are used to express oneself or to tell a story
  D) A little smile, slightly curved waist and certain hand gestures are emphasized to express the feelings of love or eroticism

Tribhanga Pose in Dance

- "**Tribhanga**" is a standing **pose** that is predominantly used in one of the indian classical form specifically Odissi.
- Also it can be seen this posture in some traditional Indian sculptures.
- Odissi is characterised by various stance, in which the **dancers** stamps foot and strikes various postures.
- The **tribhanga**, which means, roughly, "equipoised stance bent in three places."

Q80/A2013

- Annie Besant was

1. responsible for starting the Home Rule Movement
2. the founder of the Theosophical Society
3. once the President of the Indian National Congress

Select the correct statement/ statements using the codes given below.

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

Annie Besant

- Annie Besant was a British socialist, theosophist, women's rights activist, writer, orator, educationist and philanthropist.
- Regarded as a champion of human freedom, she was an ardent supporter of both Irish and Indian self-rule.
- Indian Home Rule: The **movement** lasted around two years between 1916–1918 and is believed to have set the stage for the independence **movement** under the leadership of Annie Besant and Bal Gangadhar Tilak to the educated English speaking upper class Indians.

Theosophical Society

- The **Theosophical Society**, founded in 1875, is a worldwide body with aim to advance the ideas of Theosophy
- Theosophy means 'wisdom of the gods'
- The Theosophical Society was officially formed in New York city USA. In 1875 by Blavatsky and others. Later its HQ was established in India at Adyar.
- The ***Three Objects of the Theosophical Society*** are as follows :
  - To form a nucleus of the universal brotherhood of humanity without distinction of race, creed, sex, caste, or colour.
  - To encourage the study of comparative religion, philosophy, and science.
  - To investigate the unexplained laws of nature and the powers latent in man.

Q81/A2013

- The Ilbert Bill controversy was related to the

  A) imposition of certain restrictions to carry arms by the Indians

  B) imposition of restrictions on newspapers and magazines published in Indian Languages

  C) removal of disqualifications imposed on the Indian magistrates with regard to the trial of the Europeans

  D) removal of a duty on imported cotton cloth

Ilbert Bill

- The **Ilbert Bill** was introduced by Lord Ripon in 1883 for British India. The **objective** of the **bill** was to give power to Indian judges and magistrates to try British offenders in criminal cases at the District level. British in Britain and India opposed this **bill** intensely, playing racial tensions.

- White opposition forced the government to withdraw the **bill**.

Q82/A2013

- A rise in general level of prices may be caused by
  1. an increase in the money supply
  2. a decrease in the aggregate level of output
  3. an increase in the effective demand

  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

Inflation

- Inflation is a decrease in purchasing power of money.
- Increase in money supply causes inflation
- It is a quantitative measure of the rate at which the average price level of a basket of selected goods and services in an economy increases over some period of time.
- Often expressed as a percentage
- **Inflation** can occur when prices rise due to increases in production costs, such as raw materials and wages. A surge in demand for products and services can **cause inflation** as consumers are willing to pay more for the product.
- The **inflation benefits** the borrower.

Q83/A2013

- Which one of the following groups of items is included in India's foreign-exchange reserve?

  A) Foreign-currency assets, Special Drawing Rights (SDRs) and loans from Foreign Countries

  B) Foreign-currency assets, gold holdings of the RBI and SDRs

  C) Foreign-currency assets, loans from the World Bank

  D) Foreign-currency assets, gold holdings of the RBI and loans from World Bank

Forex Reserve

- **Foreign exchange reserves** are cash and other **reserve** assets held by a central bank, RBI who maintains balance payments of the country.
- Reserves are held in reserve currencies mainly US $
- The reserve currency can be used in international transactions, international investments and all aspects of the global economy.
- It is often considered as hard currency or safe-haven currency
- Foreign exchange reserves assets can comprise banknotes, deposits, bonds, treasury bills and other government securities of the reserve currency
- Reserves can also be as gold, and special drawing rights

Q84/A2013

- Which one of the following is likely to be the most inflationary in its effect?

  A) Repayment of public debt

  B) Borrowing from public to finance a budget deficit

  C) Borrowing from Banks to finance a budget deficit

  D) Creating new money to finance a budget deficit

Q85/A2013

- Supply of money remaining the same when there is an increase in demand for money, there will be

  A) a fall in the level of prices

  B) an increase in the rate of interest

  C) a decrease in the rate of interest

  D) an increase in the level of income and employment

Money Circulation effect on Inflation

- When money demand increases, the demand curve for money shifts to the right
- This will leads to a higher nominal interest rate
- Increase in demand for money will push interest rate higher. Any thing which is more in demand will attract higher price.
- As income or GDP rises, the transactions demand for money also rises.

Q86/A2013

- Fruits stored in a cold chamber exhibit longer storage life because

  A) exposure to sunlight is prevented

  B) concentration of carbon dioxide in the environment is increased

  C) rate of respiration is decreased

  D) there is an increase in humidity

Cold Storage

- Cold storage is a means of keeping things at the right temperature. As suggested by its name, cold storage keeps perishable items at a low temperature. This way, the chances of the product getting spoilt is reduced drastically.
- Temperature of 4 degree or below is maintained
- Cold storage slows down the ripening process and fruits and vegetables stay fresh for longer.
- Fruits stored in a cold chamber exhibit longer storage life because their rate of respiration is decreased.

Q87/A2013

- Consider the following fauna of India:
  1. Gharial
  2. Leatherback turtle
  3. Swamp deer

  Which of the above is/are endangered?

  A) 1 and 2 only

  B) 3 only

  C) 1,2 and 3

  D) None

Gharial

- The gharial (Gavialis gangeticus), is the fish-eating crocodile
- It is among the longest of all living crocodiles
- Mature females are 8 ft 6 in–14 ft 9 in long, and males 9 ft 10 in–19 ft 8 in.
- Gharials are very shy and will typically hide from humans.
- India's special crocodilian Gharial population is the biggest concern for the wildlife lovers, Due to the river pollution, loss of riverine habitat and fishing gill nets, the Gharial came to the brink of extinction and fall in the critically endangered category.

Leatherback turtle

- The leatherback sea turtle (Dermochelys coriacea), sometimes called the lute turtle or leathery turtle or simply the luth, is the largest of all living turtles
- It lacks bony shell. Carapace (dorsal side) is covered by skin and oily flesh
- Leatherback turtles have hydrodynamic body design
- A large pair of front flippers powers the turtles through the water.
- In India, leatherback turtles nest mainly in the Andaman and Nicobar islands. But where they go from there is not known. Leatherback turtles are the largest of living sea turtles, growing up to two metres and weighing as much as 900 kg.

Swamp Deer

- The barasingha (Rucervus duvaucelii), also called swamp deer, is a deer species distributed in the Indian subcontinent.
- Populations in northern and central India are fragmented, and two isolated populations occur in southwestern Nepal.
- It is extinct in Pakistan and Bangladesh.
- The Barasingha is a vulnerable species. The destruction of their habitat due to deforestation, the draining of swamps and marshes for farming, poaching for its horns and diseases transmitted by domestic cattle, have all led to the decline of the Barasingha in India.

Q88/A2013

- Ball bearings are used in bicycles, cars, etc., because

  A) the actual area of contact between the wheel and axle is increased

  B) the effective area of contact between the wheel and axle is increased

  C) the effective area of contact between the wheel and axle is reduced

  D) none of the above statements is correct

Friction: Ball bearings

- Bearings reduce friction by providing smooth metal balls or rollers, and a smooth inner and outer metal surface for the balls to roll against.
- A ball bearing is a type of rolling-element bearing that uses balls to maintain the separation between the bearing races.
- The purpose of a ball bearing is to reduce rotational friction and support radial and axial loads.
- Ball bearings are the most common type of bearings and are found in many every day objects, such skateboards, blenders, bicycles, DVD players and photocopiers. This type of bearing is typically used in applications which have a high speed and a low load.

Q89/A2013

- Consider the following phenomenon:

1. Size of the sun at dusk
2. Colour of the sun at dawn
3. Moon being visible at dawn
4. Twinkle of starts in the sky
5. Polestar being visible in the sky

Which of the above are optical illusions?

A) 1,2 and 3
B) 3,4 and 5
C) 1,2 and 4
D) 2,3 and 5

Optical Illusion

- Optical illusion results from the interaction of light and matter. Ex. Mirage
- Common optical phenomena are often due to the interaction of light from the sun or moon with the atmosphere, clouds, water, dust, and other particulates.
- There are many phenomena that result from either the particle or the wave nature of light.
  Ex. Rainbow

Q90/A2013

- Rainbow is produced when sunlight falls on drops of rain. Which of the following physical phenomena are responsible for this?

  1. Dispersion
  2. Refraction
  3. Internal reflection

  Select the correct answer using the codes given below.

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

Rainbow

- A rainbow is a meteorological phenomenon that is caused by reflection, refraction and dispersion of light in water droplets resulting in a spectrum of light appearing in the sky.
- It takes the form of a multicoloured circular arc.
- Rainbows caused by sunlight always appear in the section of sky directly opposite the sun.
- A rainbow is created when white light is bent (refracted) while entering a droplet of water, split into separate colours, and reflected back.

Dispersion

- **Dispersion of Light**' can be defined as the splitting of white **light** when it passes through a glass prism into its constituent spectrum of colours (i.e. violet, indigo, blue, green, yellow, orange and red).

Refraction

- Light travel with speed of 300 000 km/sec
- Light travel at different speed in different mediums like in air its speed is different when it travels in water. The speed depends on the density of the medium.
- Refraction is the bending of a wave when it enters a medium where its speed is different.
- The refraction of light when it passes from a fast medium to a slow medium bends the light ray toward the normal to the boundary between the two media.
- Refraction is responsible for image formation by lenses and the eye.
- Rainbow is formed when the sun's rays as they enter raindrops

Internal reflection

- Light travelling in a medium may be reflected back with in the medium depending on the angle of ray of light.
- Total internal reflection, in physics, complete reflection of a ray of light within a medium such as water or glass from the surrounding surfaces back into the medium.
- The phenomenon occurs if the angle of incidence is greater than a certain limiting angle, called the critical angle.
- Diamonds are given cuts at definite angles to have the phenomenon of Total internal reflection. This makes sparkling of Diamonds.
- Mirage is another example of Total Internal Reflection

Q91/A2013

- Many transplanted seedlings do not grow because

  A) the new soil does not contain favorable minerals

  B) most of the root hairs grip the new soil too hard

  C) most of the root hairs are lost during transplantation

  D) Leaves get damaged during transplantation

Transplantation causes of failure

- In agriculture and gardening transplanting or replanting is the technique of moving a plant from one location to another. Protecting young plants from diseases and pests until they are sufficiently established; Avoiding germination problems by setting out seedlings instead of direct seeding.
- Plant not healthy and vigorous due to previous stress, insects, or disease damage.
- Root ball too small for amount of top growth.
- Plant roots dried out between digging and transplanting, resulting in root damage and/or death.
- Failure of Transplantation is called Transplant Shock

Q92/A2013

- Economic growth in country X will necessarily have to occur if

A) there is technical progress in the world economy

B) there is population growth in X

C) there is capital formation in X

D) the volume of trade grows in the world economy

Economic Growth

- Economic growth is an increase in the the production of economic goods and services, compared from one period of time to another.
- An example of economic growth is when a country increases the gross domestic product (GDP) per person.
- Economic growth only comes from increasing the quality and quantity of the factors of production, which consist of four broad types: land, labour, capital, and entrepreneurship.
- The benefits of economic growth include. Higher average incomes. Economic growth enables consumers to consume more goods and services and enjoy better standards of living.

Q93/A2013

- Which of the following statements is/are correct?

  1. Viruses lack enzymes necessary for the generation of energy

  2. Viruses can be cultured in any synthetic medium

  3. Viruses are transmitted from one organism to another by biological vectors only

  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

Virus

- A virus is a sub-microscopic infectious agent that replicates only inside the living cells of an organism.
- Viruses can infect all types of life forms, from animals and plants to microorganisms, including bacteria.
- There are millions of types of viruses in the environment
- Viruses are found in almost every ecosystem on Earth and are the most numerous type of biological entity.
- HIV is one of several viruses transmitted through sexual contact and by exposure to infected blood.
- Viral infections in animals provoke an immune response that usually eliminates the infecting virus. Immune responses can also be produced by vaccines

Q94/A2013

- Which of the following leaf modifications occurs/occur in desert areas to inhibit water loss?

  1. Hard and waxy leaves
  2. Tiny leaves or no leaves
  3. Thorns instead of leaves

  Select the correct answer using the codes given below

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

Desert Adaptation

- Nocturnal desert animals keep cool by being active at night, whereas some other desert animals get away from the sun's heat by digging underground burrows. Other common adaptations seen in desert animals include big ears, light-coloured coats, humps to store fat, and adaptations that help conserve water.

- Desert plants have developed three main adaptive strategies: succulence, drought tolerance and drought avoidance

- The two main adaptations that desert animals must make are how to deal with lack of water and how to deal with extremes in temperature.

Desert Adaptation

- Cactus have thick, waxy skin to reduce loss of water and to reflect heat. They have large, fleshy stems to store water. Leaves are modified into thorns to reduce water loss.
- Some plants have glossy leaves to reduce water loss.
- Plants have deep roots to tap ground water

- Animals survive in deserts by living underground or resting in burrows during the heat of the day. Some creatures get the moisture they need from their food, so they don't need to drink much water
- Camels and rattle snakes, Foxes, spiders, antelopes, elephants and lions are common desert species.
- The Addax antelope found in the Sahara Desert is one of the most beautiful antelopes in the world.

Q95/A2013

- The known forces of nature can be divided into four classes, viz., gravity, electromagnetism, weak nuclear force and strong nuclear force. With reference to them, which one of the following statements is NOT correct?

  A) Gravity is the strongest of the four

  B) Electromagnetism acts only on particles with an electric charge

  C) Weak nuclear force causes radioactivity

  D) Strong nuclear force holds protons and neutrons inside the nucleus of an atom

Forces

- The four basic forces are the gravitational force, the electromagnetic force, the weak nuclear force, and the strong nuclear force.

- *There are two kinds of forces*:
  - Contact Forces - involve physical contact between objects. Examples: the force involved in kicking a ball, pulling a wagon, compressing a spring, etc.

  - Field forces - don't involve physical contact between objects. Examples: the gravitational force and the electromagnetic force.

- Gravity is the weakest of the four fundamental forces. Ordered from strongest to weakest, the forces are 1) the strong nuclear force, 2) the electromagnetic force, 3) the weak nuclear force, and 4) gravity.

Q96/A2013

- The efforts to detect the existence of Higgs boson particle have become frequent news in the recent past. What is/are the importance of discovering this particle?

  1. It will enable us to understand as to why elementary particles have mass
  2. It will enable us in the near future to develop the technology of transferring matter from one point to another without traversing the physical space between them
  3. It will enable us to create better fuels for nuclear fission

  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

Higgs boson particle

- The Higgs boson is a particle in nuclear structure of an atom.
- Bosons are thought to be particles which are responsible for all physical forces. Other known bosons are the photon, the W and Z bosons, and the gluon.

- In 2012, scientists confirmed the detection of the long-sought Higgs boson, also known by its nickname the "God particle," at the Large Hadron Collider (LHC), the most powerful particle accelerator on the planet. This particle helps give mass to all elementary particles that have mass, such as electrons and protons.

Q97/A2013

- Mycorrhizal biotechnology has been used in rehabilitating degraded sites because mycorrhiza enables the plants to

  1. resist drought and increase absorptive area
  2. tolerate extremes of pH
  3. resist disease infestation

  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

Mycorrhizal biotechnology

- Mycorrhiza are symbiotic associations between plant roots and certain soil fungi which play a key role in nutrient cycling in the ecosystem and also protect plants against environmental and cultural stress.

- The fungi colonize the root system of a host plant, providing increased water and nutrient absorption capabilities while the plant provides the fungus with carbohydrates formed from photosynthesis.

- Mycorrhizal fungi play a crucial role in plant nutrient uptake, water relations, ecosystem establishment, plant diversity, and productivity of plants.

Q98/A2013

- Who among the following constitute the National Development Council?

  1. The Prime Minister
  2. The Chairman Finance Commission
  3. Ministers of the Union Cabinet
  4. Chief Ministers of the States

  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

National Development Council

- National Development Council (NDC) is an executive body established by the Government of India in August 1952, which is neither a constitutional nor a statutory body. It is the apex body to take decisions on matters related to approval of five year plans of the country.

- Prime minister is the ex-officio chairman of the NDC. The secretary of the Planning Commission is also the secretary of the NDC.

Q99/A2013

- The national income of a country for a given period is equal to the

A) total value of goods and services produced by the nationals

B) sum of total consumption and investment expenditure

C) sum of personal income of all individuals

D) money value of final goods and services produced

National Income

- **National Income** refers to the money value of all the goods and services produced in a country during a financial year. In other words, the final outcome of all the economic activities of the nation during a period of one year, valued in terms of money is called as a **National income**

- The **national income** is an amount of a nation's economic productiveness.
- **National Income** is total amount of goods and services produced within the nation during the given period say, 1 year. It is the total of factor **income** i.e. wages, interest, rent, profit, received by factors of production i.e. labour, capital, land and entrepreneurship of a nation.

- Which of the following grants/grant direct credit assistance to rural households?

  1. Regional Rural Banks
  2. National Bank for Agriculture and Rural Development
  3. Land Development Banks

  Select the correct answer using the codes given below

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

Regional Rural Banks

- Regional Rural Banks (RRBs) are Indian Scheduled Commercial Banks (Government Banks) operating at regional level in different States of India.

- They have been created with a view of serving primarily the rural areas of India with basic banking and financial services.

- There are 56 RRBs

- RRBs perform various functions as:
  - Providing banking facilities to rural and semi-urban areas.
  - Carrying out government operations like disbursement of wages of MGNREGA workers, distribution of pensions etc.
  - Providing Para-Banking facilities like locker facilities, debit and credit cards, mobile banking, internet banking, UPI etc.

Land Development Banks (LDB)

- A Land development bank is a special kind of Bank in India
- It provides services such as accepting deposits, making business loans and offering basic investment products.
- The main objective of LDB is to promote the development of land, agriculture and increase the agricultural production
- The LDB provides long-term finance to members directly through its branches.
- The sources of funds of land development banks are:
  Share capital, Deposits from members or non-members, Issue of debentures, Accepting deposits, Reimbursements of subsidies from the government.

National Bank for Agriculture and Rural Development

- National Bank for Agriculture and Rural Development (NABARD) is an apex development finance institution in India. Established on 12th July 1982, it had an initial capital of 100 crores.
- The bank has been entrusted with "matters concerning policy, planning, and operations in the field of credit for agriculture and other economic activities in rural areas in India".
- Other economic activities include development of small scale industries, cottage and village industries, handicrafts and other rural crafts
- NABARD is fully owned by Govt. Of India.

NABARD

- NABARD is instrumental in the development and efficiency of the current rural credit system.
- Over half the credit in the rural region comes from Co-operative banks and Regional Rural Banks.
- NABARD is responsible for regulating and supervising the functioning of such banks.
- NABARD is also instrumental in social innovations and projects. It partners with various organizations for many innovative projects such as SHG-Bank linking, innovative schemes for water and soil conservation.

1	A	11	D	21	D	31	D	41	A
2	C	12	C	22	C	32	C	42	D
3	B	13	C	23	C	33	C	43	B
4	C	14	D	24	D	34	D	44	C
5	D	15	A	25	C	35	C	45	A
6	B	16	C	26	D	36	D	46	B
7	A	17	A	27	C	37	C	47	A
8	C	18	D	28	B	38	B	48	C
9	C	19	D	29	B	39	B	49	C
10	B	20	A	30	D	40	D	50	B

51	A	61	A	71	C	81	C	91	C
52	D	62	C	72	D	82	D	92	C
53	D	63	B	73	A	83	B	93	A
54	A	64	C	74	D	84	D	94	D
55	B	65	B	75	C	85	B	95	A
56	B	66	A	76	D	86	C	96	A
57	D	67	C	77	D	87	C	97	D
58	B	68	B	78	A	88	C	98	B
59	A	69	B	79	A	89	C	99	D
60	D	70	B	80	C	90	D	100	C

Thank You