ForumIAS



Prelims Marathon

23rd to 29th May, 2022

HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT

Environment

Q.1) Consider the following statements about vulture protection in India:

- 1. India's only vulture sanctuary is located in Uttar Pradesh.
- 2. Asia's first vulture conservation breeding centre is located in Haryana.
- 3. Red headed vulture is on Critically Endangered list of IUCN but not under Schedule 1 of Wildlife (Protection) Act, 1972.

Which of the above given statement is/are correct?

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

ANS: B

Explanation: The Vulture Conservation Breeding Centre (VCBC) is a joint project of the Haryana Forest Department and the Bombay Natural History Society (BNHS). It is a collaborative initiative to save the three species of vultures, the White-backed, Long-billed and Slender-billed, from looming extinction.

The VCBC, earlier known as Vulture Care Centre (VCC), was established in September 2001 with the UK Government's 'Darwin Initiative for the Survival of Species' fund, to investigate the dramatic declines in India's Gyps species of vultures.

Subsequent to the release of the South Asia Vulture Recovery Plan in February 2004, the VCC was adapted and upgraded to being the first VCBC, in line with a key recommendation of the Recovery Plan to set up a conservation breeding programme for the three critically endangered species of vultures. The centre sprawls over 5 acres of Haryana Forest Department's land at village Jodhpur. The Jatayu Conservation Breeding Centre (JCBC) is a joint project of the Haryana Forest Department and the Bombay Natural History Society (BNHS).It is a collaborative initiative to save the three species of vultures, the White-backed, Long-billed and Slender-billed, from looming extinction. These three species are on Critically Endangered list of IUCN and under Schedule 1 of Wildlife (Protection) Act, 1972 while Red headed vulture is on Critically Endangered list of IUCN but not under Schedule 1.

Source: ForumIAS

Q.2) The Cartagena Protocol on Biosafety is related to which of the following?

- a) To ensure the safe handling, transport and use of living modified organisms (LMOs)
- b) The fair and equitable sharing of benefits arising from the utilization of genetic resources.
- c) To Abate Acidification, Eutrophication and Ground-level Ozone
- d) To reduce Chlorofloro Carbons (CFCs)

ANS: A

Explanation: The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects



on biological diversity, taking also into account risks to human health. It was adopted on 29 January 2000 and entered into force on 11 September 2003.

The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. It establishes an advance informed agreement (AIA) procedure for ensuring that countries are provided with the information necessary to make informed decisions before agreeing to the import of such organisms into their territory. The Protocol contains reference to a precautionary approach and reaffirms the precaution language in Principle 15 of the Rio Declaration on Environment and Development. The Protocol also establishes a Biosafety Clearing-House to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.

Source: ForumIAS

Q.3) When was the Project Elephant launched?

- a) 1991
- b) 1992
- c) 1993
- d) 1994

Ans: B

Explanation: Project Elephant (PE), a centrally sponsored scheme, was launched in February 1992 to provide financial and technical support to major elephant bearing States in the country for protection of elephants, their habitats and corridors. It also seeks to address the issues of human-elephant conflict and welfare of domesticated elephants. The Project is being implemented in 13 States / UTs, viz. Andhra pradesh, Arunachal Pradesh, Assam, Jharkhand , Karnataka , Kerala , Meghalaya , Nagaland , Orissa , Tamil Nadu , Uttranchal , Uttar Pradesh and West Bengal.

Source: ForumIAS

0.4) MIKE programme which is an international collaboration that measures the levels, trends and causes of elephant mortality was established by which of the following?

- a) Wildlife Crime Control Bureau
- b) CBD
- c) UNEP
- d) CITES

ANS: D

Explanation: The Monitoring the Illegal Killing of Elephants (MIKE) programme is an international collaboration that measures the levels, trends and causes of elephant mortality, thereby providing an information base to support international decision-making related to conservation of elephants in Asia and Africa. The MIKE Programme was established by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) by Resolution 10.10 adopted at the tenth Conference of the Parties in 1997.

There are currently 28 sites participating in the MIKE programme in Asia, distributed across 13 countries: India has 10 sites, followed by two sites each in Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar and Thailand, and one site each in Bangladesh, Bhutan, China, Nepal, Sri Lanka and Viet Nam.





Q.5) Which of the following is not MIKE site in India?

- a) Chirang Ripu (Assam)
- b) Dhang Patki (Assam)
- c) Eastern Dooars (WB)
- d) Kaziranga (Assam)

Ans: D

Explanation: The overall aim of MIKE is to provide information needed for elephant range States and the Parties to CITES to make appropriate management and enforcement decisions, and to build institutional capacity within the range States for the long-term management of their elephant populations. MIKE aims to help range States improve their ability to monitor elephant populations, detect changes in levels of illegal killing, and use this information to provide more effective law enforcement and strengthen any regulatory measures required to support such enforcement.

MIKE Sites in India are:

- Chirang-Ripu Elephant Reserve
- Deomali Elephant Reserve
- Dihing Patkai Elephant Reserve
- Garo Hills Elephant Reserve
- Eastern Dooars Elephant Reserve
- Mayurbhanj Elephant Reserve
- Shivalik Elephant Reserve
- Mysore Elephant Reserve
- Nilgiri Elephant Reserve
- Wayanad Elephant Reserve

Source: ForumIAS

Q.6) Biochemical oxygen demand (BOD) is a standard criterion for:

- a) Measuring oxygen level in blood
- b) Computing oxygen level in forest ecosystems
- c) Pollution analysis in aquatic systems
- d) Assessing oxygen levels in high altitude region

ANS: C

Explanation: Biochemical oxygen demand (BOD), the amount of dissolved oxygen used by microorganisms in the biological process of metabolizing organic matter in water. The more organic matter there is (e.g., in sewage and polluted bodies of water), the greater the BOD; and the greater the BOD, the lower the amount of dissolved oxygen available for higher animals such as fishes. The BOD is therefore a reliable gauge of the organic pollution of a body of water. One of the main reasons for treating wastewater prior to its discharge into a water resource is to lower its BOD—i.e., reduce its need of oxygen and thereby lessen its demand from the streams, lakes, rivers, or estuaries into which it is released.



Q.7) Consider the following:

- 1. Keoladeo Ghana National Park
- 2. Sultanpur National Park
- 3. Indira Gandhi wildlife sanctuary

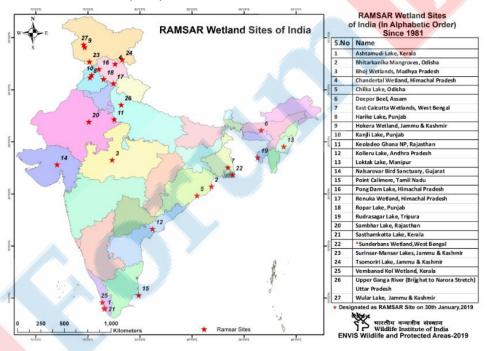
Which of the above is/are Ramsar sites?

- a) 1 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1 and 3 only

ANS: A

Explanation: The Ramsar Convention is an international treaty for the conservation and sustainable utilization of wetlands, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value. The convention entered into force in India on 1 February 1982.

India currently has 27 sites designated as Wetlands of International Importance (Ramsar Sites), with a surface area of 1,056,871 hectares.



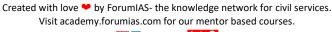
Source: ForumIAS

Q.8) Which of the following is spread over three states?

- a) Eravikulam National Park
- b) Mudumalai Wildlife Sanctuary
- c) Keoladeo Ghana National Park
- d) Panna National Park

ANS: B

Explanation: Mudumalai Tiger Reserve is located in the Nilgiris District of Tamil Nadu state spread over 321 sq.km. at the tri-junction of three states, viz, Karnataka, Kerala and Tamil





Nadu and it plays an unique role by forming part of the Nilgiris Biosphere Reserve, the first Biosphere Reserve in India, declared during 1986. It has a common boundary with Wyanad Wildlife Sanctuary (Kerala) on the West, Bandipur Tiger Reserve (Karnataka) on the North, and the Nilgiris North Division on the South and East and Gudalur Forest Division on the South West, together forming a large conservation landscape for flagship species such as Tiger and Asian Elephant. Reception Centre is located at Theppakadu. The name Mudumalai means "the ancient hill range". Indeed, it is as old as 65 million years when Western Ghats were formed.

Source: ForumIAS

Q.9) Consider the following animals:

- 1. Jaguar
- 2. Salt water Crocodile
- 3. Snow leopard

Which of the above is/are naturally found in India?

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

ANS: B

Explanation: Snow Leopard: The ounce or popularly known as snow leopard is native to the mountain ranges of South and Central Asia. It is listed as vulnerable on the IUCN Red List because of its global population which is estimated to be below 10,000.

Four big cat species are found in India in wild viz. Gir Lion, Bengal tiger, Indian leopard, Snow leopard. Further, clouded leopard is also found in India. The Big Cats that are not found in their natural habitats in India are Jaguar and Cheetah. Cheetah got extinct as back as 1940s. Earth's largest living crocodilian—and, some say, the animal most likely to eat a human—is the saltwater or estuarine crocodile. Average-size males reach 17 feet and 1,000 pounds, but specimens 23 feet long and weighing 2,200 pounds are not uncommon.

Habitat: Saltwater crocs, or "salties," as Australians affectionately refer to them, have an enormous range, populating the brackish and freshwater regions of eastern India, Southeast Asia, and northern Australia. They are excellent swimmers and have often been spotted far out at sea.

Source: ForumIAS

Q.10) Consider the following statements about National Board for Wildlife:

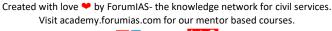
- 1. It is a non-statutory body.
- 2. The body is headed by Prime Minister.

Which of the above statements is/are correct?

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

ANS: B

Explanation: Status: NBWL is a statutory body as it has been constituted under Section 5 A the Wildlife Protection Act, 1972.





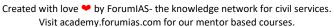
Mandate: It is the apex body to review all wildlife-related matters and approve projects in and around national parks and sanctuaries i.e. Protected Areas.

Timeline: In 2003, NBWL was constituted. Its term lapsed in 2013. In 2014, it was reconstituted (was notified on July 22, 2014).

Composition: It is a 47-member board (including the chairman) which usually meets once a year. It is chaired by Prime minister.

Standing committee:

- The environment ministry has delegated all powers of the NBWL to a compliant Standing Committee which regularly meets and clears projects in Protected Areas.
- The National Board may, at its discretion, constitute a Standing Committee under subsection (1) of Section 5B to be chaired by Union Minister in charge of Forests and Wildlife.





Environment

Q.1) Consider the following statements:

- 1. Environmental information system (ENVIS) Established in 1982.
- 2. The focus of ENVIS is protection of environment and flora and fauna.

Which of the following statements given below are correct?

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

ANS: A

Explanation: Realizing the importance of Environmental Information, the Government of India, in December, 1982, established an Environmental Information System (ENVIS) as a plan program. The focus of ENVIS since inception has been on providing environmental information to decision makers, policy planners, scientists and engineers, research workers, etc. all over the country.

Objective of Environmental Information System:

Long-term objectives:

- To build up a repository and dissemination centre in Environmental Science and Engineering.
- To gear up the modern technologies of acquisition, processing, storage, retrieval and dissemination of information of environmental nature; and.
- To support and promote research, development and innovation in environmental information technology.

Short-term objectives:

- To provide national environmental information service relevant to present needs and capable of development to meet the future needs of users, originator, processors and disseminators of information;
- To build up storage, retrieval and dissemination capabilities with the ultimate objectives of disseminating information speedily to the users;
- To promote, national and international cooperation and liaison for exchange of environment related information;
- To promote, support and assist education and personnel training programmes designed to enhance environmental information processing and utilization capabilities.



Q.2) Tropical wet evergreen-type forest of the western ghats, extends to over 600 square kilometers and provides a habitat for three big carnivores- tiger, leopard, and wild dogamongst several other species such as lion-tailed macaque. The place is also origin of three rivers- the nethravathi, the Tunga river and the Bhadra river. The above description defines which of the following national park?

- a) Rajiv Gandhi national park (NAGARHOLE)
- b) Bannerghatta national park
- c) Bandipur national park
- d) Kudremukh national park

ANS: D

Explanation: The Kudremukh National Park is located at a distance of 96 km from the district of Chikmagalur in the state of Karnataka in India. Nestled in the Western Ghats, the park is spread over an area of over 600 sq km at an altitude of 1,894 m above sea level. The Kudremukh National Park derives its name from a hill top that resembles the shape of the head of a horse. The park houses four ranges named Kudremukh, Kerekatte, Kalasa, and Shimoga. The entire park is covered by thick forests with various species of flora. It is also surrounded by tea and coffee plantations. The Kudremukh National Park falls under the Global Tiger Conservation Priority-I, under the format developed by the Wildlife Conservation Society (WCS) and World Wide Fund-USA. It is also the origin of three very well-known rivers - the Nethravathi, the Tunga and the Bhadra. A statue of Lord Varaha at a height of six feet can be found inside an ancient cave and a temple of goddess Bhagavathi is also present here. These attract many tourists, mainly pilgrims, here. Kudremukh National Park is home to several species of flora and fauna. Eucalyptus, casuarinas, acacia auriculiformis and Grevillea Robusta are some of the species of flora found here. Together with a wide array of wildlife consisting of tigers, leopards, wild dogs, Malabar giant squirrels, common langurs, sloth bears, gaurs, porcupines, sambar, spotted deer, barking deer, jackals, giant flying squirrels and mongoose found here.

Source: ForumIAS

Q.3) Consider the following statements are correct with respect to photo synthetically active radiation:

- 1. Photo synthetically Active Radiation (PAR) is the amount of light available for photosynthesis.
- 2. The light wavelength range is needed for PAR is 400 nanometer (nm) to 700nm.

Which of the following given below codes is correct?

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

ANS: C

Explanation: Photosynthetically Active Radiation (PAR) is the amount of light available for photosynthesis, which is light in the 400 to 700 nanometer wavelength range. PAR changes seasonally and varies depending on the latitude and time of day. Levels are greatest during the summer at mid-day. Factors that reduce the amount of PAR available to plants include anything that reduces sunlight, such as cloud cover, shading by trees, and buildings. Air pollution also affects PAR by filtering out the amount of sunlight that can reach plants.



Photosynthetically Active Radiation is needed for photosynthesis and plant growth. Higher PAR promotes plant growth, and monitoring PAR is important to ensure plants are receiving adequate light for this process.

Source: ForumIAS

Q.4) Recycling of nutrients in the ecosystem through the process of mineralization of dead organic materials is the most important role for decomposers, which of the following given is decomposers?

- a) Autotrophs
- b) Heterotrophs
- c) Phagotrophs
- d) Saprotrophs

ANS: D

Explanation: Saprotrophs feed by a process known as absorptive nutrition, in which the nutritional substrate (e.g., dead organism or other nonliving organic matter) is directly digested by a variety of enzymes that are excreted by the saprotroph. The enzymes convert the detritus into simpler molecules, which are then absorbed by the cells to feed the organism.

Source: ForumIAS

Q.5) Consider the following given below with respect to traditional water conservation methods:

Water conservation system state

- 1. Saza kuva Rajasthan
- 2. Pat Himachal Pradesh
- 3. Ahar Pynes Bihar

Which of the following below given codes are correct?

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

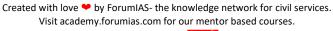
ANS: C

Explanation: Water has been harvested in India since antiquity, with our ancestors perfecting the art of water management. Many water harvesting structures and water conveyance systems specific to the eco-regions and culture has been developed.

Saza kuva: an open well with multiple owners (saza = partner), saza kuva is the most important source of irrigation in the aravalli hills in Mewar, eastern Rajasthan. The soil dug out to make the well pit is used to construct a huge circular foundation or an elevated platform sloping away from the well. The first is built to accommodate the rehat, a traditional water lifting device; the sloping platform is for the chada, in which buffaloes are used to lift water. Saza kuva construction is generally taken up by a group of farmers with adjacent landholdings; a harva, a man with special skills in groundwater detection, helps fix the site.

Pat: Bhitada village, Jhabua district of Madhya pradesh developed the unique pat system. This system was devised according to the peculiarities of the terrain to divert water from swift-flowing hill streams into irrigation channels called pats.

Ahar pynes: Ahar Pynes are traditional floodwater harvesting systems indigenous to South Bihar. Ahars are reservoirs with embankments on three sides that are built at the end of





diversion channels like pynes. Pynes are artificial rivulets led off from rivers to collect water in the ahars for irrigation in the dry months. Paddy cultivation in this relatively low rainfall area depends mostly on ahar pynes.

Source: ForumIAS

Q.6) Consider the following statements with respect to Kaziranga National Park:

- 1. Kaziranga National Park is formed in 1908 on the recommendation of Mary Curzon
- 2. Park is located in the edge of the Eastern Himalayan biodiversity hotspots Golaghat and Nagaon district
- 3. In 1995, the park was declared as a World Heritage Site by UNESCO.

Which of the following below given codes are correct?

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

ANS: B

Explanation: One of the most sought after wildlife holiday destinations in India, Kaziranga National park's 430 square kilometer area sprinkled with elephant-grassy meadows, swampy lagoons, and dense forests is home to more than 2200 Indian one-horned rhinoceros, approximately 2/3rd of their total world population. Formed in 1908 on the recommendation of Mary Curzon, the park is located in the edge of the Eastern Himalayan biodiversity hotspots – Golaghat and Nagaon district. In the year 1985, the park was declared as a World Heritage Site by UNESCO. It is said when Mary Curzon, the wife of the Viceroy of India – Lord Curzon of Kedleston, visited the park to see Indian one-horned rhinoceros; she wasn't able to found even one. Then she persuaded her husband to take urgent measures to protect the dwindling species which he did by initiating planning for their protection. After a series of meetings and documentations, the Kaziranga Proposed Reserve Forest was created with an area of 232 km2 (90 sq mi) in 1905.

Source: ForumIAS

Q.7) Which of the following given below are results of Eutrophication:

- 1. Harmful algal blooms
- 2. Dead zones
- 3. Fish kills

Which of the following given below codes are correct?

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

ANS: D

Explanation: Eutrophication is a big word that describes a big problem in the nation's estuaries. Harmful algal blooms, dead zones, and fish kills are the results of a process called eutrophication-which begins with the increased load of nutrients to estuaries and coastal waters. The primary culprits in eutrophication appear to be excess nitrogen and phosphorus—from sources including fertilizer runoff and septic system effluent to atmospheric fallout from burning fossil fuels—which enter water bodies and fuel the overgrowth of algae, which, in turn,



reduces water quality and degrades estuarine and coastal ecosystems. Eutrophication can also produce carbon dioxide, which lowers the PH of seawater (ocean acidification). This slows the growth of fish and shellfish, may prevent shell formation in bivalve mollusks, and reduces the catch of commercial and recreational fisheries, leading to smaller harvests and more expensive seafood.

Source: ForumIAS

Q.8) Consider the following statements with respect to Coral Reefs:

- 1. Coral reefs are the most diverse of all marine ecosystems
- 2. Half-Of the ocean species depending on reefs for food and shelter
- 3. Reefs form when corals grow in shallow water close to the shore of continents or smaller islands.

Which of the following below given codes are correct?

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

ANS: C

Explanation: Coral reefs are the most diverse of all marine ecosystems. They teem with life, with perhaps one-quarter of all ocean species depending on reefs for food and shelter. This is a remarkable statistic when you consider that reefs cover just a tiny fraction (less than one percent) of the earth's surface and less than two percent of the ocean bottom. Because they are so diverse, coral reefs are often called the rainforests of the sea. Coral reefs are also very important to people. The value of coral reefs has been estimated at 30 billion U.S. dollars and perhaps as much as 172 billion U.S. dollars each year, providing food, protection of shorelines, jobs based on tourism, and even medicines. Reefs, which are usually made up of many colonies, are much bigger still. The largest coral reef is the Great Barrier Reef, which spans 1,600 miles (2,600 km) off the east coast of Australia. It is so large that it can be seen from space! Reefs form when corals grow in shallow water close to the shore of continents or smaller islands. The majority of coral reefs are called fringe reefs because they fringe the coastline of a nearby landmass. But when a coral reef grows around a volcanic island something interesting occurs. Over millions of years, the volcano gradually sinks, as the corals continue to grow both upward towards the surface and out towards the open ocean. Over time, a lagoon forms between the corals and the sinking island and a barrier reef forms around the lagoon.

Source: ForumIAS

Q.9) Consider the following statements with respect to Bioremediation:

- 1. Bioremediation is the use of living microorganisms to degrade the environmental contaminants into less toxic forms
- 2. It uses naturally occurring bacteria and fungi or virus or plants to degrade or detoxify substances hazardous to human health and/or the environment.

Which of the following given below codes are correct?

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

ANS: A



Explanation: Bioremediation is the use of living microorganisms to degrade the environmental contaminants into less toxic forms. It uses naturally occurring bacteria and fungi or plants to degrade or detoxify substances hazardous to human health and/or the environment. The microorganisms may be indigenous to a contaminated area or they may be isolated from elsewhere and brought to the contaminated site. Contaminant compounds are transformed by living organisms through reactions that take place as a part of their metabolic processes. Biodegradation of a compound is often a result of the actions of multiple organisms. Bioremediation can be effective only where environmental conditions permit microbial growth and activity. The application often involves the manipulation of environmental parameters to allow microbial growth and degradation to proceed at a faster rate.

Source: ForumIAS

Q.10) Consider the following statements with respect to Namdapa national park:

- 1. Namdapha, a National Park and Tiger Reserve, lies in the international border between India and Bhutan within Changlang District in the state of Arunachal Pradesh
- 2. It is only park in the World to have the four Feline species of big cat

Which of the following below given codes are correct?

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

ANS: B

Explanation: Namdapha, a National Park and Tiger Reserve, a true wilderness and enchanting beauty of lush green vegetation, impenetrable pristine and virgin forests covered an area of 1985.23 square kilometres having diverse flora and fauna lies in the international border between India and Myanmar (Burma) within Changlang District in the state of Arunachal Pradesh in the northeast India. Namdapha National Park is located at a few kilometre away from Miao amidst misty blue hills along the turbulent Noa-Dihing river lies in the sprawling tropical rain forest. It was declared as Tiger Reserve by the Government in 1983. The diverse vegetation and habitats of Namdapha grooms diverse species of animals and birds. It is only park in the World to have the four Feline species of big cat namely the Tiger (Panthera Tigris), Leopard (Panthera Pardus), Snow Leopard (Panthera Uncia) and Clouded Leopard (Neofelis Nebulosa) and numbers of lesser cats. A number of primate species are seen in the park, such as Assamese macaque, pig-tailed macaque, stump-tailed macaque and number of the distinctive Hoolock Gibbons (Hylobates Hoolock), highly endangered and only ape' species found in India dwells in this impenetrable virgin forest. Of the many other important animals are the elephants, black bear, Indian Bison, several species of deers, reptiles and a variety of arboreal animals.



Environment

Q.1) Which of the following convention is formed to control of Transboundary Movements of Hazardous Waste and their Disposal?

- a) Basel Convention
- b) Rotterdam Convention
- c) Stockholm Convention
- d) Vienna Convention

ANS: A

Explanation: The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989 by the Conference of Plenipotentiaries in Basel, Switzerland, in response to a public outcry following the discovery, in the 1980s, in Africa and other parts of the developing world of deposits of toxic wastes imported from abroad.

Awakening environmental awareness and corresponding tightening of environmental regulations in the industrialized world in the 1970s and 1980s had led to increasing public resistance to the disposal of hazardous wastes – in accordance with what became known as the NIMBY (Not In My Back Yard) syndrome – and to an escalation of disposal costs. This in turn led some operators to seek cheap disposal options for hazardous wastes in Eastern Europe and the developing world, where environmental awareness was much less developed and regulations and enforcement mechanisms were lacking. It was against this background that the Basel Convention was negotiated in the late 1980s, and its thrust at the time of its adoption was to combat the —toxic tradel, as it was termed. The Convention entered into force in 1992.

Source: ForumIAS

Q.2) Consider the following statements with respect to Ecological Task Force (ETF):

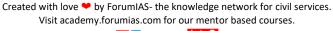
- 1. Set up in 1982, the Territorial Army's Ecological Task Force (ETF) is the world's first ecological battalion
- 2. Battalions would be raised by the Ministry of Defense while their operational expenditure would be reimbursed by the Ministry of Finance
- 3. The concept of ETF was to undertake ecological restoration work in terrains rendered difficult either due to remote location, severe degradation or risky law-and-order situations

Which of the following below given codes are correct?

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

ANS: C

Explanation: Set up in 1982, the Territorial Army's Ecological Task Force (ETF) is the world's first ecological battalion. From saving deforested hills from desertification to transforming abandoned mines into lush green forests, the ETF has done it all!





The concept of ETF was first initiated by the Indian government in 1980 to undertake ecological restoration work in terrains rendered difficult either due to remote location, severe degradation or risky law-and-order situations. The other important objective of this project was to promote and provide meaningful employment to local ex-servicemen in the Territorial Army (the country's second line of defense after the regular Army).

The idea behind ETF battalions was to infuse military-like work culture and commitments into high-priority eco-projects. Under this scheme, these battalions would be raised by the Ministry of Defense while their operational expenditure would be reimbursed by the Ministry of Environment and Forests. Raw materials (like saplings, equipment and fencing) and technical guidance would be provided by the state forest departments.

Source: ForumIAS

Q.3) Three Rivers-Arani river, the kalangi river and swarnamukhi river feeds which of the following given below lakes in India?

- a) Pulicat lake
- b) Chilika lake
- c) Kolleru lake
- d) Sambhar lake

ANS: A

Explanation: Pulicat Lake is the located 60 km north of Chennai city and is the second largest brackish – water lake or lagoon in India. The river is about 60 km with width varying from 0.2 km to 17.5 km. Salinity values of the lake vary from zero during the monsoon to about 52 ppm during post and pre–monsoon seasons. It straddles the border of Tamil Nadu and Andhra Pradesh states on the Coromandal Coast in South India. The lake encompasses the Pulicat Lake Bird Sanctuary. The barrier island of Sriharikota separates the lake from the Bay of Bengal. Three major rivers, which feed the lagoon, are the Arani River at the southern tip, the Kalangi River from the northwest and the Swarnamukhi River at the northern end, in addition to some smaller streams. It was about 461 sq. km. in its average area of water spread, but now it has shrunk so much that it may be hardly 350 sq. km. today, and is still shrinking rapidly. Average depth of water has reduced from 1.5 m in the early twentieth to about 1 m.

The lagoon has rich flora and fauna diversity, which supports active commercial fisheries and a large and varied bird population. The International Union for the Conservation of Nature and Natural Resources (IUCN) declared the Pulicat lagoon system a Ramsar site of international importance and the World Wide Fund for Nature declared it a protected area.

Source: ForumIAS

Q.4) Blue Baby Syndrome is caused by which of the following mineral contaminated water uptake in Human beings?

- a) Nitrate
- b) Cadmium
- c) Mercury
- d) Arsenic

ANS: A

Explanation: Blue baby syndrome, also known as infant methemoglobinemia, is a condition where a baby's skin turns blue. This occurs due to a decreased amount of hemoglobin in the baby's blood. The most common cause of blue baby syndrome is water contaminated with

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nitrates. After a baby drinks formula made with nitrate-rich water, the body converts the nitrates into nitrites. These nitrites bind to the hemoglobin in the body, forming methemoglobin, which is unable to carry oxygen. Nitrates are most common in drinking water in farming communities that use well water. This contamination is due to the use of fertilizers and manure.

Source: ForumIAS

Q.5) The cyclic movement of chemical elements of the biosphere between organism and the environment is referred to as:

- a) Carbon Cycle
- b) Biogeochemical Cycle
- c) Sedimentary Cycle
- d) Water Cycle

ANS: B

Explanation: Life on earth consists of a great variety of living organisms. These living organisms exist and survive in a diversity of associations. Such survival involves the presence of systemic flows such as flows of energy, water and nutrients. These flows show variations in different parts of the world, in different seasons of the year and under varying local circumstances. Studies have shown that for the last one billion years, the atmosphere and hydrosphere have been composed of approximately the same balance of chemical components. This balance of the chemical elements is maintained by a cyclic passage through the tissues of plants and animals. The cycle starts by absorbing the chemical elements by the organism and is returned to the air, water and soil through decomposition. These cycles are largely energised by solar insolation. These cyclic movements of chemical elements of the biosphere between the organism and the environment are referred to as biogeochemical cycles. Bio refers to living organisms and geo to rocks, soil, air and water of the earth.

There are two types of biogeochemical cycles: the gaseous and the sedimentary cycle. In the gaseous cycle, the main reservoir of nutrients is the atmosphere and the ocean. In the sedimentary cycle, the main reservoir is the soil and the sedimentary and other rocks of the earth's crust.

Source: ForumIAS

Q.6) Consider the following statements with respect to "Keystone Species":

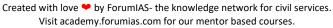
- 1. It can be any organism, from animals and plants to bacteria and fungi.
- 2. Keystone species maintain the local biodiversity of an ecosystem, influencing the abundance and type of other species in a habitat.

Which of the following below given codes are correct?

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

ANS: C

Explanation: A keystone species—which can be any organism, from animals and plants to bacteria and fungi—is the glue that holds a habitat together. It may not be the largest or most plentiful species in an ecological community, but if a keystone is removed, it sets off a chain of events that turns the structure and biodiversity of its habitat into something very different.





Although all an ecosystem's many components are intricately linked, these are the living things that play a pivotal role in how their ecosystem functions. Keystone species maintain the local biodiversity of an ecosystem, influencing the abundance and type of other species in a habitat. They are nearly always a critical component of the local food web. One of the defining characteristics of a keystone species is that it fills a critical ecological role that no other species can. Without its keystone species, an entire ecosystem would radically change—or cease to exist altogether. It's important to note that a species' role can change from one ecosystem to the next, and a species that is considered a keystone in one environment may not be considered the same in another.

Source: ForumIAS

Q.7) The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is headquartered at which of the following location?

- a) Port Blair, Andaman and Nicobar Islands, India
- b) Jakarta, Indonesia
- c) Tasmania, Australia
- d) Wellington, New Zealand

ANS: C

Explanation: The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) was established by international convention in 1982 with the objective of conserving Antarctic marine life. This was in response to increasing commercial interest in Antarctic krill resources, a keystone component of the Antarctic ecosystem and a history of over-exploitation of several other marine resources in the Southern Ocean.

CCAMLR is an international commission with 25 Members, and a further 11 countries have acceded to the Convention. Based on the best available scientific information, the Commission agrees a set of conservation measures that determine the use of marine living resources in the Antarctic.

The key institutional components of CCAMLR are:

- the CAMLR Convention which entered into force on 7 April 1982
- a decision-making body, the Commission
- a Scientific Committee which advises the Commission using the best available science
- Conservation measures and resolutions
- CCAMLR's Membership and provisions for international cooperation and collaboration
- a Secretariat based in Hobart, Tasmania, that supports the work of the Commission.

Source: ForumIAS

Q.8) Yale University publishes Environmental Performance Index (EPI) in collaboration with which one of the following?

- a) UNEP
- b) WEF
- c) WHO
- d) UNFCCC

ANS: B

Explanation: Careful measurement of environmental trends and progress provides a foundation for effective policymaking. The 2018 Environmental Performance Index (EPI) ranks 180 countries on 24 performance indicators across ten issue categories covering environmental

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health and ecosystem vitality. These metrics provide a gauge at a national scale of how close countries are to established environmental policy goals. The EPI thus offers a scorecard that highlights leaders and laggards in environmental performance, gives insight on best practices, and provides guidance for countries that aspire to be leaders in sustainability.

The EPI is produced jointly by Yale University and Columbia University in collaboration with the World Economic Forum.

Source: ForumIAS

Q.9) Consider the following statements with respect to Montreal Protocol:

1. The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption.

2. It was adopted on 1989.

Which of the following below given codes are correct?

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

ANS: A

Explanation: The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances (ODS). When released to the atmosphere, those chemicals damage the stratospheric ozone layer, Earth's protective shield that protects humans and the environment from harmful levels of ultraviolet radiation from the sun. Adopted on 15 September 1987, the Protocol is to date the only UN treaty ever that has been ratified every country on Earth – all 197 UN Member States. Source: ForumIAS

Q.10) "Dobson Unit" measurement related to which of the following?

- a) Global Warming
- b) Ozone Concentration
- c) Acid Rain
- d) Ocean Acidification

ANS: B

Explanation: The Dobson Unit is the most common unit for measuring ozone concentration. One Dobson Unit is the number of molecules of ozone that would be required to create a layer of pure ozone 0.01 millimeters thick at a temperature of 0 degrees Celsius and a pressure of 1 atmosphere (the air pressure at the surface of the Earth). Expressed another way, a column of air with an ozone concentration of 1 Dobson Unit would contain about 2.69x1016 ozone molecules for every square centimeter of area at the base of the column. Over the Earth's surface, the ozone layer's average thickness is about 300 Dobson Units or a layer that is 3 millimeters thick.



Environment

Q.1) Consider the following statements about the National Air Quality Index:

- 1. The National AQI uses 6 colour codes for the common man to judge the air quality within his vicinity.
- 2. The orange colour code indicates very poor category.

Which of the above given statement is/are correct?

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

ANS: A

Explanation: Air Quality Index is a tool for effective communication of air quality status to people in terms, which are easy to understand. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.

There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. Each of these categories is decided based on ambient concentration values of air pollutants and their likely health impacts (known as health breakpoints). AQ sub-index and health breakpoints are evolved for eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb) for which short-term (upto 24-hours) National Ambient Air Quality Standards are prescribed.

AQI Category	AQI	Concentration range*							
		PM ₁₀	PM _{2.5}	NO ₂	O ₃	co	SO ₂	NH ₃	Pb
Good	0 - 50	0 - 50	0 - 30	0 - 40	0 - 50	0 - 1.0	0 - 40	0 - 200	0 - 0.5
Satisfactory	51 - 100	51 - 100	31 - 60	41 - 80	51 - 100	1.1 - 2.0	41 - 80	201 - 400	0.5 - 1.0
Moderately polluted	101 - 200	101 - 250	61 - 90	81 - 180	101 - 168	2.1 - 10	81 - 380	401 - 800	1.1 - 2.0
Poor	201 - 300	251 - 350	91 - 120	181 - 280	169 - 208	10 - 17	381 - 800	801 - 1200	2.1 - 3.0
Very poor	301 - 400	351 - 430	121 - 250	281 - 400	209 - 748*	17 - 34	801 - 1600	1200 -1800	3.1 - 3.5
Severe	401 -	430	250+	400+	748+*	34+	1600+	1800+	3.5+

^{*} CO in mg/m³ and other pollutants in μg/m³; 2h-hourly average values for PM₁₀, PM_{2.5}, NO₂, SO₂, NH₃, and Pb, and 8-hourly values for CO and O₃.



Q.2) Which of the following state has no national park in India?

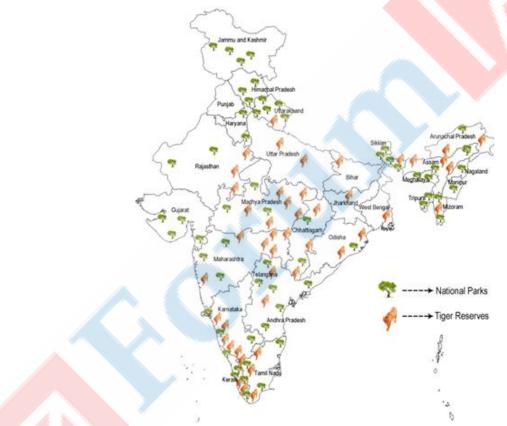
- a) Haryana
- b) Punjab
- c) Tripura
- d) Goa

ANS: B

Explanation: National Park: An area, whether within a sanctuary or not, can be notified by the state government to be constituted as a National Park, by reason of its ecological, faunal, floral, geo-morphological, or zoological association or importance, needed to for the purpose of protecting & propagating or developing wildlife therein or its environment.

Total number of national parks in India is 104. Natural and reliable habitats provided by these areas to wildlife.

Punjab is the only state in India which has no area notified as national park.



Source: ForumIAS

Q.3) The National Energy Conservation Day celebrated on which of the following Day?

- a) December 10
- b) December 11
- c) December 12
- d) December 14

ANS: D



Explanation: The National Energy Conservation Day is being celebrated every year on December 14 since 1991. The Bureau of Energy Efficiency (BEE), under Ministry of Power spearheads the celebrations every year. The objective to celebrate the National Energy Conservation Day is to drive mass awareness about the importance of energy efficiency and conservation.

Source: ForumIAS

Q.4) Which of the following state/UT have adopted black-necked crane, an endangered species as the State bird?

- a) Maharashtra
- b) Ladakh
- c) Jammu and Kashmir
- d) Odisha

ANS: B

Explanation: Ladakh recently adopted two endangered species, snow leopard and blacknecked crane, as the State animal and the State bird. Black-necked crane, only found in the Ladakh region, was the State bird of J&K before August 5, 2019.

About Black-necked crane

- It has a conspicuous red crown that adorns the head.
- The juveniles have a brownish head and neck and plumage is slightly paler than that of an adult.
- The bird is revered by the community of Monpas (Major Buddhist ethnic group of Arunachal Pradesh) as an embodiment of the sixth Dalai Lama (Tsangyang Gyatso).
- **Habitat and Breeding Grounds:** The high altitude wetlands of the Tibetan plateau, Sichuan (China), and eastern Ladakh (India).
- In Bhutan and Arunachal Pradesh, it only comes during the winters.
- **Threats:** Damage to the eggs and chicks; Loss of habitat due to humans Development Projects; Increased grazing pressure on the limited pastures near the wetlands.

Source: ForumIAS

Q.5) Consider the following statements about Pollen calendar:

- 1. Pollen calendars represent the time dynamics of airborne pollen present in a particular geographical area.
- 2. Delhi became first Indian city to get its pollen calendar.

Which of the statements given above is/are correct?

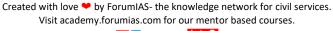
- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Recently, Chandigarh got its first Pollen calendar, arguably the first for any city in India.

What is a Pollen Calendar?

• Pollen calendars represent the time dynamics of airborne pollen present in a particular geographical area.





- They yield readily accessible visual details about various airborne pollen present throughout the year in a single picture.
- Pollen calendars are location-specific, with concentrations closely related to locally distributed flora.
- Europe, UK and the US are using regional pollen calendars in a big way to prevent and diagnose allergic rhinitis/hay fever and predict the timing and severity of the pollen season.

Significance of a pollen calendar:

- A pollen calendar provides a clear understanding for clinicians, as well as people with allergies to identify the potential allergy triggers and help to limit their exposure during high pollen load season.
- The early advisories can be prepared and disseminated through media channels to the citizens

About Chandigarh's Pollen calendar

- The pollen calendar for Chandigarh was prepared by studying airborne pollen and its seasonal variations for about two years.
- The study highlights the variability of crucial pollen types in different seasons. Spring and autumn are two seasons when airborne pollen dominates.

Q.6) Consider the following countries:

- 1. Croatia
- 2. Slovenia
- 3. Albania
- 4. Serbia
- 5. Hungary

Which of the above countries is/are part of the world's first 'five-country biosphere reserve'? Select the correct answer using the codes given below:

a) 1, 2, 4 and 5 only

- b) 1, 2, 3 and 5 only
- c) 2, 3, 4 and 5 only
- d) 1, 2, 3 and 5 only

ANS: A

Explanation: Recently, Mura-Drava-Danube (MDD) was declared as the world's first 'five-country biosphere reserve' by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

About MDD:

- The biosphere reserve covers 700 kilometres of the Mura, Drava and Danube rivers and stretches across Austria, Slovenia, Croatia, Hungary and Serbia. The total area of the reserve is a million hectares in the so-called 'Amazon of Europe', which is now the largest riverine protected area in Europe.
- The biosphere "represented an important contribution to the European Green Deal (climate action plan) and contributed to the implementation of the EU Biodiversity Strategy in the Mura-Drava-Danube region."
- The strategy's aim is to revitalise 25,000 km of rivers and protect 30% of the European Union's land area by 2030.



Q.7) Consider the following statements about IRIS Initiative:

- 1. The IRIS initiative is a part of the Coalition for Disaster Resilient Infrastructure (CDRI).
- 2. The initiative is result of cooperation between India, the U.K. and Australia and included the participation of leaders of small island nations.

Which of the statements given above is/are correct?

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

ANS: C

Explanation: About IRIS Initiative:

- India along with Australia, the UK and Small Island developing states (SIDS) launched the IRIS (Infrastructure for Resilient Island States) initiative.
- The IRIS initiative is aimed at creating a coalition for putting in place infrastructure that can withstand disasters and lessen economic losses in island nations.
- Australia, India and the UK have committed an initial funding of \$10 million.
- According to a World Bank report titled 'Climate and Disaster Resilient Transport in Small Island Developing States', SIDS countries are highly susceptible to economic losses due to disasters, with average annual losses ranging from 1% to 10% of the gross domestic product (GDP).
- UN Global Assessment Report (2017) observes that SIDS countries account for twothirds of the countries in the world that suffer the highest relative losses due to disasters.
- IRIS Initiative has been launched to support the capacity building to meet the needs of SIDS countries.

Small Island developing states (SIDS):

- SIDS is a distinct group of 38 UN Member States and 20 Non-UN Members/Associate Members of UN regional commissions that face unique social, economic, and environmental vulnerabilities.
- Factors like small population size, remoteness from international markets, high transportation costs, vulnerability to exogenous economic shocks and fragile land and marine ecosystems make SIDS particularly vulnerable to biodiversity loss and climate change because they lack economic alternatives.
- Most SIDS are situated in the Caribbean Sea, Pacific Ocean (Micronesia, Melanesia, Polynesia) and there are a few in Indian Ocean (Bahrain, Maldives, Mauritius, Seychelles, Singapore) and Atlantic Ocean (Cape Verde, Comoros, Guinea-Bissau, Sao Tome).



Q.8) Consider the following statements about Mudumalai Tiger Reserve:

- 1. It is located at the tri-junction of Karnataka, Andhra Pradesh and Tamil Nadu.
- 2. It is a part of Nilgiri Biosphere Reserve.

Which of the statements given above is/are correct?

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

ANS: B

Explanation: About Mudumalai Tiger Reserve:

- Mudumalai Tiger Reserve is located in the Nilgiris District of Tamil Nadu state at the trijunction of three states, viz, Karnataka, Kerala and Tamil Nadu.
- It is a part of Nilgiri Biosphere Reserve (1st Biosphere Reserve in India) along with Wayanad Wildlife Sanctuary (Kerala) in the West, Bandipur National Park (Karnataka) in the North, Mukurthi National Park and Silent Valley in the South.
- Flora: The Reserve has tall grasses, commonly referred to as 'Elephant Grass'.
- Bamboo of the giant variety, valuable timber species like Teak, Rosewood, etc.
- There are several species of endemic flora.
- Fauna: Flagship Species: Tiger and Asian Elephant.

Source: ForumIAS

Q.9) Consider the following statements regarding Biopiracy:

- 1. It refers to the appropriation of traditional knowledge of biodiversity by outsiders and companies.
- 2. It includes fraudulent patenting of biological resources for profit.

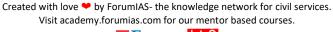
Which of the above statements is/are correct?

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

ANS: C

Explanation: Biopiracy

- It is often assumed that traditional knowledge is in public domain and the local communities have no claims over it. Hence, such knowledge can be easily misappropriated.
- Biopiracy here refers to the appropriation of traditional knowledge of biodiversity by outsiders and companies and it includes fraudulent patenting of such biological resources for profit.
- Some examples of biopiracy in India:
 - > **Turmeric:** In 1995, two NRIs in the US were awarded a patent for the wound-healing property of turmeric. India's Council of Scientific and Industrial Research contested the patent on the argument that the medicinal properties of turmeric were known to Indians since centuries. The patent was cancelled.





- ➤ **Basmati Rice:** In 1997, the US firm Rice Tec obtained patents for Basmati Rice line and grains, arguing that they invented the variety. Due to massive protests, some of their claims were rejected.
- > **Neem:** In 1994, the European Patent Office awards a patent to the US firm, W.R. Grace for a method of controlling fungi on plants by the aid of Neem oil. NGOs and Indian farmers successfully contested this patent.
- It is not always easy to fight against biopiracy. In this era of globalization, it is important to record all such traditional and local knowledge of biodiversity.

Source: ForumIAS

Q.10) Consider the following statements about Indian Desert Cat:

- 1. It has been spotted for the first time in Gujarat's Kutch.
- 2. It has been classified as Vulnerable under the IUCN Red List.

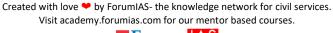
Which of the statements given above is/are correct?

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

ANS: D

Explanation: About Indian Desert Cat:

- An Indian desert cat has been spotted for the first time in Madhya Pradesh's Panna Tiger Reserve (PTR).
- Indian Desert Cat is also known as the Asian steppe wildcat and Asiatic Wildcat.
- The cat is considered as a subspecies of African Wildcat.
- It is mostly found in Kazakhstan, Western India (Thar Desert), China and Mongolia.
- The cat has also been found in Nauradehi Wildlife Sanctuary in Madhya Pradesh and Mirzapur forests.
- It has been classified as Least Concern under the IUCN Red List.





Ancient History

Q.1) Who among the following king was contemporary to Buddha?

- a) Ashoka
- b) Ajatashatru
- c) Bimbisara
- d) Bindusara

ANS: C

Explanation:

• Bimbisara, who was a contemporary of Buddha, started the process of empire building. It was strengthened by his son Ajatashatru and then by the Nandas.

Source: Tamil Nadu state board class.

Q.2) Which of the following text mentions about agricultural activities during later vedic period?

- a) Satapatha Brahamana
- b) Aranayaka Brahamana
- c) Gopatha Brahmana
- d) Jaiminiya Brahmana

ANS: A

Explanation:

- Agricultural activities increased during the Late Vedic period. The Satapatha Brahmana mentions rituals related to ploughing undertaken by the kings.
- This suggests the importance given to cultivation by the rulers, and the shift to agriculture to support the increasing population.
- The god Balarama is depicted with a plough, which suggests the importance of cultivation. The Vedic people cultivated barley and rice, and wheat.
- Wheat was the staple food of Punjab region. The Vedic people began to use rice in the Ganga-Yamuna doab. The use of rice, rather than wheat, is noticed in the Vedic rituals.

Source: ForumIAS

Q.3) Arrange the following provinces of Ashokan Empire from north to south:

- 1. Tosali
- 2. Taxila
- 3. Suvarnagiri

Select the correct answer using the code given below:

- a) 1 2 3
- b) 2-1-3
- c) 3-2-1
- d) 3 1 2

ANS: B

Explanation:



- The capital region of Pataliputra was directly administered. The rest of the empire was divided into four provinces based at Suvarnagiri (near Kurnool in Andhra Pradesh), Ujjain (Avanti, Malwa), Taxila in the northwest, and Tosali in Odisha in the southeast.
- The rovinces were administered by governors who were usually royal princes.

Source: Tamil Nadu state board class.

Q.4) Barabar caves carved out on the orders of King Ashoka were for the use of which of the following sect?

- a) Buddhist
- b) Jains
- c) Ajivika
- d) Hindu

ANS: C

Explanation:

- Around 40 km from Bodh Gaya lies a cluster of four caves, namely Karan Chaupar, Lomas Rishi, Sudama and Visvakarma, known as the Barabar Caves.
- Carved out from a monolithic granite rock, these are supposed to have been constructed by emperor Ashoka for the use of Ajivaka ascetics.
- The most unique cave is Lomas Rishi, whose façade is an exact replica of the wood and thatch huts of monks. The interior of the cave has a remarkable glass-like polish.

Source: Old NCERT

Q.5) Which one of the following term is used for the pastoralism combined with shifting cultivation type of landscape in Tamilangam?

- a) Kurinji
- b) Mullai
- c) Neythal
- d) Marutham

ANS: B

Explanation:

- Sangam poems help us understand the social formation of the time.
- According to the thinai concept, Tamilagam was divided into five landscapes or ecoregions namely Kurinji, Marutam, Mullai, Neytal and Palai.

Each region had distinct characteristics – a presiding deity, people and cultural life according to the environmental conditions, as follows:

- Kurinji: hilly region: hunting and gathering
- Marutham: riverine tract: agriculture using plough and irrigation.
- Mullai: forested region: pastoralism combined with shifting cultivation
- Neythal: coastal land: fishing and salt making.
- Palai: parched land. Unsuitable for cultivation and hence people took to cattle lifting and robbery.

Source: Tamil Nadu state board.





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Q.6) Harsha lost to which of the following ruler south of Vindyas?

- a) Dantidurga
- b) Pulikesin II
- c) Vasishta pulomavi
- d) Gautamiputra Satkarni

ANS: B

Explanation:

- Harsha sought to extend his authority southward into the Deccan. However the Chalukya king Pulikesin II, who controlled the region, humbled Harsha.
- In commemoration of his victory over Harsha, Pulikesin assumed the title of "Parameswara". Inscriptions in Pulikesin's capital Badami attest to this victory.

Source: NCERT

Q.7) Consider the following statements about Ellora caves:

- 1. The rock-cut cave temples of Ellora are carved in Charanadri Hills.
- 2. The Ellora caves are designated as UNESCO world heritage site.
- 3. The temples are only linked to Buddhism and Brahamanism.

Which of the above given statements is/are correctly matched?

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

ANS: B

Explanation:

- The rock-cut cave temples in Ellora are in 34 caves, carved in Charanadri hills. Without knowledge of trigonometry, structural engineering, and metallurgy, the Indian architects could not have created such exquisite edifices.
- The patrons of these caves range from the dynasties of Chalukyas to Rashtrakutas.
- The heterodox sects first set the trend of creating this model of temples.
- Later, orthodox sects adopted it as a medium of disseminating religious ideologies.
- These temples were linked to Ajivikas, Jainism, Buddhism, and Brahmanism.
- The Ellora caves were designated as a UNESCO World Heritage Site in 1983.

Source: NCERT

Q.8) Which of the following is/are part of early "Buddhist literature"?

- 1. Nettipakarana
- 2. Acharanga Sutra
- 3. Kalpasutra

Select the correct answer using the code given below:

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

ANS) A

Explanation:



• The important non-canonical texts of Buddhist literature are Milindapanho (written in Pali, it consists of a dialogue on various philosophical issues between the Indo-Greek king Milinda/Menander and the monk Nagasena), Nettipakarana (The Book of Guidance, which gives a connected account of the Buddha's teachings), Visuddhimagga (The Path to Purity, written by Buddhaghosa.

Early Jain Literature:

• The complication of the entire canon is traditionally believed to have taken place in the fifth or sixth century CE at a council presided over by Devarddhi Kshamashramana held in Vallabhi in Gujarat. Compilations such as Acharanga Sutra, Sutrakritanga, and the Kalpasutra are regarded as the early texts.

Source: ForumIAS

Q.9) The monolithic Bull-capital of Ashoka is found at which of the following place?

- a) Sarnath
- b) Sanchi
- c) Rampurva
- d) Kalinga

ANS) C

Explanation:

- The bull capital of Ashoka from Rampurva, Bihar, also belonging to the third century B.C. is an interesting study as it is a mixture of Persian and Indian elements. The lotus capital is entirely formalistic. The motifs on the abacus are beautiful decorative elements like the rosette, palmette and the acanthus ornaments, none of them Indian.
- However, the crowning element of the bull capital, that is the bull proper, is a masterpiece of Indian craftsmanship, showing a humped bull, well modelled, with its soft flesh
 beautifully represented, with its strong legs, sensitive nostrils and the ears cocked as if
 it were listening.

Source: NCERT

Q.10) Which of the following statement is NOT correct about "Harappan town planning"?

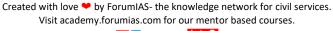
- a) The streets were wide and divide the town into rectangular and square blocks.
- b) There were lamp-posts at regular intervals.
- c) They used mud bricks of good quality across all Harappan structures.
- d) They had an excellent drainage system.

ANS) C

Explanation:

Distinguishing aspects of Harappan town planning are as follows:

- The streets were wide, the main street being ten metres wide and dividing the town into rectangular and square blocks.
- There were lamp-posts at intervals. They used burnt bricks of good quality and the unique feature of this brick was its identical ratio of 1:2:4 in terms of thickness:width:length across all Harappan structures.
- Equally striking was the uniformity in the average size of bricks $7 \times 14 \times 28$ cm³ for houses and $10 \times 20 \times 40$ cm for city walls.





- They had an excellent drainage system drains were made of mortar, lime and gypsum and covered with large brick slabs for easy cleaning.
- Houses were often of two or more storeys, though varied in size but quite monotonous. No window faced the streets and the houses had tiled bathrooms.
- Some houses had their own wells.





Medieval History

Q.1) Consider the following statements about Medieval India authors:

- 1. Al-Beruni authored Tarikh-Al-Hind.
- 2. Khazain Ul Futuh about victories of Allauddin Khalji has been written by Ziauddin Barani.

Which of the statements given above is/are correct?

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

ANS: A

Explanation:

Some of the authors of Delhi Sultanate period are:

- Al-Beruni: Tarikh-Al-Hind (Indian Philosophy and Religion written in Arabic)
- Minhaj us Siraj: Tabagat-i-Nasiri (1260) (World Islamic History written in Arabic)
- Ziauddin Barani: Tarikh-i-Firoz Shahi(1357) History of Delhi Sultanate up to Firuz Tughlaq
- Amir Khusrau: Mifta Ul Futuh (Victories of Jalal-ud-din Khalji); Khazain Ul Futuh (Victories of Allauddin Khalji Texts in Persian)
- Tughlaq Nama (History of Tughlaq dynasty in Persian)
- Shams-i-Siraj Afif: Tarikh i Firuz Shahi (after Barani's account of Delhi Sultanate in **Persian**)

Source: NCERT

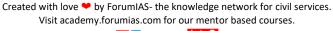
Q.2) Battles of Tarain were fought between which of the following kings?

- a) Prithviraj Chauhan vs. Allauddin Khilji
- b) Prithviraj Chauhan vs. Muhammad Ghori
- c) Jai Chandra vs. Babur
- d) Jai Chandra vs. Mahmud Ghazni

ANS: B

Explanation:

- Ghori attacked the fortress of Tabarhinda (Bhatinda), a strategic point for the Chauhans of Ajmer.
- The ruler of Ajmer Prithviraj Chauhan marched to Tabarhinda and faced the invader in the First Battle of Tarain (1191).
- Prithviraj scored a brilliant victory in this battle but failed to consolidate his position believing this battle to be a frontier fight, and did not expect the Ghurids to make regular attacks.
- Ghori was wounded and carried away by a horseman to safety. Contrary to the expectations of Prithviraj Chauhan, Muhammad Ghori marched into India in the following year (1192).





- Prithviraj underestimated the potential danger of the enemy. In the Second Battle of Tarain, one of the turning points in Indian history, Prithviraj suffered a crushing defeat and was eventually captured. Ghori restored him to his throne in Ajmer.
- But on charges of treason he was later executed, and Ghori's trusted general Qutb-uddin Aibak was appointed as his deputy in India.

Source: NCERT

Q.3) Consider the following statements about Arab conquest of Sind:

- 1. Dahar was the ruler of Sind when the Arabs invaded it in the 8th century.
- 2. Muhammad Bin Qasim led the strong army in the conquest of Sind.

Which of the statements given above is/are NOT correct?

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

ANS: D

Explanation:

- The Arab governor of Iraq, Hajjaj Bin Yusuf, under the pretext of acting against the pirates, sent two military expeditions against Dahar, the ruler of Sind, on by land and the other by sea. Both were defeated and commanders killed.
- Hajjaj then sent, with the Caliph's permission, a full-fledged army, with 6000 strong cavalry and a large camel corps carrying all war requirements under the command of his son-in-law, a 17-year-old Muhammad Bin Qasim.

Source: Tamil Nadu state board.

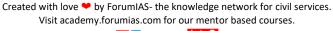
Q.4) The primary education in the Islamic World is provided at which of the following institution?

- a) Madrasa
- b) Maktab
- c) Mosque
- d) At residence

ANS: B

Explanation:

- Certain traditions of education were now implanted from the Islamic World.
- At the base was the maktab, where a schoolmaster taught children to read and write.
- At a higher level, important texts in various subjects were read by individual pupils with particular scholars who gave instruction (dars) in them.
- A more institutionalized form of higher education, the madrasa, became widely established in Central Asia and Iran in the eleventh century, and from there it spread to other Islamic countries.
- Usually the madrasa had a building, where instruction was given by individual teachers. Often there was a provision of some cells for resident students, a library and a mosque.
- Firoz Tugluq built a large madrasa at Delhi whose splendid building still stands.





- From Barani's description it would seem that teaching here was mainly confined to "Quran-commentary, the Prophet's sayings and the Muslim Law (fiqh)."
- It is said that Sikander Lodi (1489–1517) appointed teachers in maktabs and madrasas in various cities throughout his dominions, presumably making provision for them through land or cash grants.

Source: NCERT

Q.5) Which ruler's interest led to the translation of Sanskrit musical work Rag Darpan into Persian?

- a) Raziva Sultan
- b) Balban
- c) Firuz Tughlaq
- d) Muhmmad bin Tughlaq

ANS: C

Explanation:

- Music was an area where the syncretic tendencies were clearly visible.
- Muslims brought their musical instruments like Rabab and Sarangi.
- Amir Khusrau proclaimed that Indian music had a pre-eminence over all the other music of the world.
- The Sufi practice of Sama, recitation of love poetry to the accompaniment of music, was instrumental in promotion of music.
- Pir Bhodan, a Sufi saint, was considered a great musician of the age. Royal patronage for the growth of music was also forthcoming.
- Firuz Tughlaq evinced interest in music leading to synchronisation by translating an Indian Sanskrit musical work Rag Darpan into Persian.
- Dancing also received an impetus in the official court. Zia-ud-din Barani lists the names of Nusrat Khatun and Mihr Afroz as musician and dancer respectively in the court of Jalaluddin Khalji.

Q.6) Consider the following pairs of terms related to Bahmani Kingdom:

Term Meaning

1. Vakil-us-saltana lieutenant of the kingdom

2. Sadr-i-jahan Chief of Police

3. Wasir-i-ashraf Minister of Finance

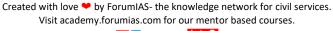
Which of the above given pair is/are correctly matched?

- a) 1 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) 2 and 3 only

ANS: A

Explanation:

• In order to facilitate smooth administration, as followed in the Delhi Sultanate, Bahman Shah divided the kingdom into four territorial divisions called tarafs, each under a governor.





Each governor commanded the army of his province (Gulbarga, Daulatabad, Bidar, and Berar) and was solely responsible for both its administration and the collection of revenue.

Mohammed I appointed a council of eight ministers of state:

- Vakil-us-saltana or lieutenant of the kingdom, the immediate subordinate of the sovereign.
- Waziri-kull, who supervised the work of all other ministers;
- Amir-i-jumla, minister of finance;
- Wasir-i-ashraf, minister of foreign affairs and master of ceremonies;
- Nazir, assistant minister for finance;
- Peshwa who was associated with the lieutenant of the kingdom;
- Kotwal or chief of police and city magistrate in the capital, and
- Sadr-i-jahan or chief justice and minister of religious affairs and endowments.

Source: Tamil Nadu state board.

Q.7) At which of the following given place, Krishnadevaraya planted the pillar of victory?

- a) Indrakiladri
- b) Simhachalam
- c) Srikalahasti
- d) Srisailam

ANS: B

Explanation:

- Krishnadevaraya had to fight almost continuously on two fronts, one against the traditional enemy, the Bahmani Sultans and the other against the Orissa king Gajapati.
- There are several inscriptions graphically describing his seizure of many forts like Udayagiri, under the control of Gajapati, during the course of this eastern expedition.
- Finally, he put a pillar of victory at Simhachalam.

Source: NCERT

0.8) Who among the following was the first known person in the world to have devised the 'Ship's camel'?

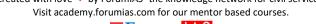
- a) Akbar
- b) Alauddin Khilji
- c) Chandragupta
- d) Krishnadevaraya

ANS: A

Explanation:

- Akbar is also the first known person in the world to have devised the 'ship's camel', a barge on which the ship is built to make it easier for the ship to be carried to the sea.
- Some mechanical devices like the screw for tightening, manually driven belt-drill for cutting diamonds were in use.

Source: Tamil Nadu state board.





Q.9) Which of the following Mughal structure has the Buddhist architectural elements?

- a) Tajmahal
- b) Mausoleum of Akbar
- c) Panch Mahal
- d) Red fort

ANS: B

Explanation:

- Architectural progress during the Mughals is a landmark in world art.
- Mughal buildings were noted for the massive structures decorated with bulbous domes, splendorous minarets, cupolas in the four corners, elaborate designs, and pietra dura (pictorial mosaic work).
- The mosques built during the time of Babur and Humayun are not of much architectural significance.
- The mausoleum of Akbar at Sikandra near Agra started by Akbar and completed by Jahangir includes some Buddhist architectural elements.

Source: Tamil Nadu state board.

Q.10) Consider the following pairs related to Maratha Administration:

Term used for 1. Amatya Finance Minister

2. Sachiv Foriegn Minister
3. Summant Home Minister

Which of the above given pair is/are correctly matched?

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

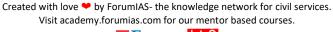
ANS: A

Explanation:

• Shivaji was a not only a great warrior but a good administrator too. He had an advisory council to assist him in his day-to-day administration. This council of eight ministers was known as Ashta Pradhan. Its functions were advisory.

The eight ministers were:

- The Mukhya Pradhan or Peshwa or prime minister whose duty was to look after the general welfare and interests of the State. He officiated for the king in his absence.
- The Amatya or finance minister checked and countersigned all public accounts of the kingdom.
- The Walkia-Nawis or Mantri maintained the records of the king's activities and the proceedings in the court.
- Summant or Dabir or foreign secretary was to advise king on all matters of war and peace and to receive ambassadors and envoys from other countries.
- Sachiv or Shuru Nawis or home secretary was to look after the correspondence of the king with the power to revise the drafts. He also checked the accounts of the Parganas.





- Pandit Rao or Danadhyaksha or Sadar and Muhtasib or ecclesiastical head was in charge of religion, ceremonies and charities. He was the judge of canon law and censor of public morals.
- Nyayadhish or chief justice was responsible for civil and military justice.

• Sari Naubat or commander-in-chief was in charge of recruitment, organization and discipline of the Army.





Modern History

Q.1) Ripon's Resolution on which of the following below given sector?

- a) Educational reforms
- b) Health reforms
- c) Financial reforms
- d) Local Body reforms

ANS: D

Explanation: The Government of Ripon desired the provincial governments to apply in case of local bodies the same principle of financial decentralization which Lord Mayo's Government had begun towards them. For his contributions, Lord Ripon is called father of local selfgovernment in India.

Source: NCERT

Q.2 "One religion, one caste, one God for mankind" was coined by?

- a) E.V. Ramaswamy Naicker
- b) Sri Narayana Guru
- c) Sahadaran Ayyapan
- d) Swami Vivekananda

ANS: B

Explanation: During the 1920s in South India, the non-brahmins organised the Self-Respect Movement led by E.V. Ramaswamy Naicker. There were numerous other movements demanding that the ban on the entry of lower castes into temples be lifted.

Sri Narayana Guru in Kerala led a lifelong struggle against upper caste domination.

He coined the slogan "one religion, one caste, one God for mankind", which his disciple Sahadaran Ayyapan changed into "no religion, no caste, no God for mankind".

Source: ForumIAS

Q.3) Arrange the above political organizations in chronological order of their formation.

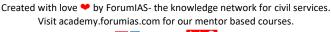
- 1. Zamindari Association
- 2. Madras Mahajan Sabha
- 3. Poona Sarvajanik Sabha

Select the correct answer using the codes given below:

- a) 1 2 3
- b) 1 3 2
- c) 2-1-3
- d) 2 3 1

Explanation: Political Associations before Indian National Congress:

- 1836—Bangabhasha Prakasika Sabha and Zamindari Association or Landholders' Society
- 1843—Bengal British India Society





- 1851—British Indian Association
- 1866—East India Association
- 1870—Poona Sarvajanik Sabha
- 1875—Indian League
- 1876—Indian Association of Calcutta or Indian National Association
- 1885—Bombay Presidency Association
- 1884—Madras Mahajan Sabha

Source: Spectrum's A Brief History of Modern India.

Q.4) Which among the following treaty was signed after Second Anglo-Afghan War?

- a) Treaty of Sagauli
- b) Treaty of Lhasa
- c) Treaty of Gandamak
- d) Durand Agreement

ANS: C

Explanation: Relations of British India with Neighboring Countries:

- Anglo-Nepal Relations (Treaty of Sagauli, 1816)
- Anglo-Burma Relations
 - o First Anglo-Burma War, 1824-26
 - o Second Anglo-Burma War, 1852
 - o Third Anglo-Burma War, 1885
- Anglo-Tibetan Relations
 - o Treaty of Lhasa (1904)
- Anglo-Afghan Relations
 - o Forward Policy of Auckland
 - o First Anglo-Afghan War (1839-1842)
 - o John Lawrence's Policy of Masterly Inactivity
 - Lytton and the Policy of Proud Reserve
 - o Second Anglo-Afghan War (1870-80)
 - o Treaty of Gandamak (May 1879)
- North-West Frontier
- Durand Agreement (1893)

Source: Spectrum's A Brief History of Modern India.

Q.5) 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

ANS: B



Explanation: Lodi dynasty fell and Babur took over in 1526.

- Guru Nanak (1469 1539)
- Dadu Dayal (1544–1603)
- Kakarla Tyagabrahmam (1767 1847)

Source: CSP 2013

Q.6) Consider the following statements regarding the "Servants of India Society":

- 1. It was founded by Gopal Krishna Gokhale.
- 2. The aim of the society was to prepare a cadre of selfless workers who were to devote their lives to the cause of the country in a religious spirit.

Which of the statements given above is/are correct?

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

ANS: C

Explanation: Gopal Krishna Gokhale (1866-1915), a liberal leader of the Indian National Congress, founded the Servants of India Society in 1905 with the help of M.G. Ranade.

The aim of the society was to train national missionaries for the service of India;

- to promote, by all constitutional means, the true interests of the Indian people;
- to prepare a cadre of selfless workers who were to devote their lives to the cause of the country in a religious spirit.

Source: Spectrum Modern India.

Q.7) Which of the following fort has been described as Gibraltar of the East in British Gazette?

- a) Raigarh Fort
- b) Saraighat Fort
- c) Kangra Fort
- d) Fort William

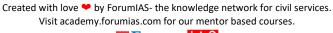
ANS: A

Explanation: About Raigad Fort:

- Raigad is a hill fort situated in the Raigad district in Maharashtra. The British Gazette states the fort was known to early Europeans as the Gibraltar of the East.
- Its decisive feature is a mile and a half flat top, which has adequate room for buildings. In its prime, the fort had 300 stone houses and a garrison of 2,000 men.

Importance of Raigad Fort:

- The fort, which was earlier called Rairi, was the seat of the Maratha clan Shirke in the 12th century.
- The fort changed hands a number of times from the dynasty of Bahaminis to the Nizam Shahis and then the Adil Shahis.
- In 1656, Chhatrapati Shivaji captured it. The fort not only helped Shivaji challenge the supremacy of the Adil Shahi dynasty but also opened up the routes towards Konkan for the extension of his power.
- Raigad fort had emerged as the seat of Shivaji's government.





• Shivaji was coronated at Raigad by Gagabhatt where he took on the title of Chhatrapati. Source: ForumIAS

Q.8) Which of the following statements is/are correct with respect to Indian Factory Act 1891?

- 1. Reduced maximum working hours for children to 7 hours a day.
- 2. Provided weekly holiday for woman and children only.

Which of the following codes below given is/are correct?

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

ANS: A

Explanation: About the Indian Factory Act, 1891:

- increased the minimum age (from 7 to 9 years) and the maximum (from 12 to 14 years) for children,
- reduced maximum working hours for children to 7 hours a day,
- fixed maximum working hours for women at 11 hours per day with an one-and-a-half hour interval (working hours for men were left unregulated),
- Provided weekly holiday for all.

Source: ForumIAS

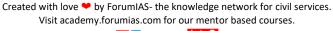
Q.9) "Treaty of Ryswick" was concluded between which of the following nations in 17th Century?

- a) French & English
- b) French & Portuguese
- c) French & Dutch
- d) Dutch & Portuguese

ANS: C

Explanation: The French position in India was badly affected with the outbreak of war between the Dutch and the French. Bolstered by their alliance with the English since the Revolution of 1688, the Dutch captured Pondicherry in 1693. Although the Treaty of Ryswick concluded in September 1697 restored Pondicherry to the French, the Dutch garrison held on to it for two more years.

Source: Spectrum's Modern History of India





Q.10) Consider the following statements:

- 1. Colonial land revenue settlements
- 2. Encroachment on tribal lands
- 3. 'Just rule' by British
- 4. Destruction of indigenous manufacturing

Which of the following above factors responsible for people's resentment and uprisings in British India?

- a) 1 only 2 only
- b) 1, 2 and 3 only
- c) 1, 2 and 4 only
- d) 1, 2, 3 and 4

ANS: C

Explanation: The major factors responsible for the people's resentment and uprisings against the Company rule are as follows.

- Colonial land revenue settlements, heavy burden of new taxes, eviction of peasants from their lands, and encroachments on tribal lands.
- Exploitation in rural society coupled with the growth of intermediary revenue collectors, tenants and moneylenders.
- Expansion of revenue administration over tribal lands leading to the loss of tribal people's hold over agricultural and forest land.
- Promotion of British manufactured goods, heavy duties on Indian industries, especially export duties, leading to devastation of Indian handloom and handicraft industries.
- Destruction of indigenous industry leading to migration of workers from industry to agriculture, increasing the pressure on land/agriculture.

Source: NCERT

