

Environment & Ecology

Questions in UPSC Prelims 2020

Q 1. In the context of recent advances in human reproductive technology, "Pronuclear Transfer" is used for

- (a) fertilization of egg in vitro by the donor sperm
- (b) genetic modification of sperm-producing cells
- (c) development of stem cells into functional embryos
- (d) prevention of mitochondrial diseases in offspring

Q 2. With reference to carbon nanotubes, consider the following statements:

- 1. They can be used as carriers of drugs and antigens in the human body.
- 2. They can be made into artificial blood capillaries for an injured part of human body.
- 3. They can be used in biochemical sensors.
- 4. Carbon nanotubes are biodegradable.

Which of the statements given above are correct?

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

Q 3. Consider the following activities:

- 1. Spraying pesticides on a crop field
- 2. Inspecting the craters of active volcanoes
- 3. Collecting breath samples from spouting whales for DNA analysis

At the present level of technology, which of the above activities can be successfully

carried out by using drones?

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

Q 4. Consider the following statements:

1. Genetic changes can be introduced in the cells that produce eggs or sperms of a prospective parent.
2. A person's genome can be edited before birth at the early embryonic stage.
3. Human-induced pluripotent stem cells can be injected into the embryo of a pig.

Which of the statements given above is/are correct?

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

Q 5. Which of the following statements are correct regarding the general difference between plant and animal cells?

1. Plant cells have cellulose cell walls whilst animal cells do not
2. Plant cells do not have plasma membrane unlike animal cells which do
3. Mature plant cell has one large vacuole

Select the correct answer using the code given below:

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

Q 6. Which of the following are the reasons/factors for exposure to benzene pollution?

1. Automobile exhaust
2. Tobacco smoke
3. Wood burning
4. Using varnished wooden furniture
5. Using products made of polyurethane

Select the correct answer using the code given below:

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

Q 7. With reference to Indian elephants, consider the following statements:

1. The leader of an elephant group is a female
2. The maximum gestation period can be 22 months
3. An elephant can normally go on calving till the age of 40 years only
4. Among the States in India, the highest elephant population is in Kerala

Which of the statements given above is/are correct?

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

Q 8. Which of the following Protected Areas are located in Cauvery basin?

1. Nagarhole National Park
2. Papikonda National Park
3. Sathyamangalam Tiger Reserve

4. Wayanad Wildlife Sanctuary

Select the correct answer using the code given below:

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

Q 9. With reference to India's biodiversity, Ceylon Frogmouth, Coppersmith Barbet, Gray Chinned Minivet and White-throated Redstart are

- (a) Birds
- (b) Primates
- (c) Reptiles
- (d) Amphibians

Q 10. Which one of the following protected areas is well-known for the conservation of a sub-species of the Indian swamp deer (Barasingha) that thrives well on hard ground and is exclusively graminivorous?

- (a) Kanha National Park
- (b) Manas National Park
- (c) Mudumalai Wildlife Sanctuary
- (d) Tal Chhapar Wildlife Sanctuary

Q 11. Which of the following are the most likely places to find the musk deer in its natural habitat?

1. Askot Wildlife Sanctuary
2. Gangotri National Park
3. Kishanpur Wildlife Sanctuary
4. Manas National Park

Select the correct answer using the code given below:

- (a) 1 and 2 only

- (b) 2 and 3 only
- (c) 3 and 4 only
- (d) 1 and 4 only

Q 12. In rural road construction, the use of which of the following is preferred for ensuring environmental sustainability or to reduce carbon footprint?

1. Copper slag
2. Cold mix asphalt technology
3. Geotextiles
4. Hot mix asphalt technology
5. Portland cement

Select the correct answer using the code given below:

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

Q 13. Steel slag can be the material for which of the following?

1. Construction of base road
2. Improvement of agricultural soil
3. Production of cement

Select the correct answer using the code given below:

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

Q 14. Consider the following statements:

1. Coal ash contains arsenic, lead and mercury.
2. Coal-fired power plants release sulphur dioxide and oxides of nitrogen into the environment.
3. High ash content is observed in Indian coal.

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

Q 15. What is the use of biochar in farming?

1. Biochar can be used as a part of the growing medium in vertical farming.
2. When biochar is a part of the growing medium, it promotes the growth of nitrogen fixing microorganisms.
3. When biochar is a part of the growing- medium, it enables the growing medium to retain water for longer time.

Which of the statements given above is/are correct?

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

Q 16. If a particular plant species is placed under Schedule VI of The Wildlife Protection Act, 1972, what is the implication?

- (a) A licence is required to cultivate that plant
- (b) Such a plant cannot be cultivated under any circumstances
- (c) It is a Genetically Modified crop plant
- (d) Such a plant is invasive and harmful to the ecosystem

Q 17. What is/are the advantage/advantages of zero tillage in agriculture?

1. Sowing of wheat is possible without burning the residue of the previous crop
2. Without the need for the nursery of rice saplings, direct planting of paddy seeds in the wet soil is possible.
3. Carbon sequestration in the soil is possible.

Select the correct answer using the code given below:

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

Q 18. According to India's National Policy on Biofuels, which of the following can be used as raw materials for the production of biofuels?

1. Cassava
2. Damaged wheat grains
3. Groundnut seeds
4. Horse gram
5. Rotten potatoes
6. Sugar beet

Select the correct answer using the code given below:

- (a) 1, 2, 5 and 6 only
- (b) 1, 3, 4 and 6 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 2, 3, 4, 5 and 6

Q 19. Which one of the following statements best describes the term 'Social Cost of Carbon'? It is a measure, in monetary value, of the

- (a) long-term damage done by a tonne of CO₂, emissions in a given year
- (b) requirement of fossil fuels for a country to provide goods and services to its citizens, based on the burning of those fuels
- (c) efforts put in by a climate refugee to adapt to live in a new place
- (d) contribution of an individual person to the carbon footprint on the planet Earth

Q 20. In the context of India, which of the following is/are considered to be of practice(s) of eco-friendly agriculture?

1. Crop diversification
2. Legume intensification
3. Tensiometer use
4. Vertical farming

Select the correct answer using the code given below:

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

Q 21. Consider the following minerals:

1. Bentonite
2. Chromite
3. Kyanite
4. Sillimanite

In India, which of the above is/are officially designated as major minerals?

- (a) 1 and 2 only
- (b) 4 only
- (c) 1 and 3 only

(d) 2, 3 and 4 only

Q 22. With reference to Ocean Mean Temperature (OMT), which of the following statements is/are correct?

1. OMT is measured up to a depth of 26°C isotherm which is 129 meters in the southwestern Indian Ocean during January — March.

2. OMT collected during January — March can be used in assessing whether the amount of rainfall in monsoon will be less or more than a certain long-term mean.

Select the correct answer using the code given below:

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

Q 23. With reference to India's Desert National Park, which of the following statements are correct?

1. It is spread over two districts.

2. There is no human habitation inside the Park.

3. It is one of the natural habitats of the Great Indian Bustard.

Select the correct answer using the code given below:

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Q 24. Consider the following statements :

1. 36% of India's districts are classified as "overexploited" or "critical" by the Central Ground Water Authority (CGWA).

2. CGWA was formed under the Environment (Protection) Act.
3. India has the largest area under groundwater irrigation in the world.

Which of the statements given above is/are correct?

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

Q 25. Among the following Tiger Reserves, which one has the largest area under “Critical Tiger Habitat”?

- (a) Corbett
- (b) Ranthambore
- (c) Nagarjunsagar-Srisaillam
- (d) Sunderbans

