

Section 3d: General Studies–Ecology and Environment

Q.113 If B is Natality, D is Mortality, I is Immigration, E is Emigration, and N_t is population at time t, then the population $N_{(t+1)}$ is

(1 mark)

[A] $N_t + [(B+D) - (I+E)]$

[B] $N_t + [(B+I) - (D+E)]$

[C] $N_t + [(I+E) - (B+D)]$

[D] $N_t + [(D+E) - (B+I)]$

Q.114 The current human population of a developing area in India is 1 million and the carrying capacity is 2 million. If the intrinsic rate of natural increase per capita for the population is 0.02, then the estimated rate of increase in population for the "logistic growth model" is

(1 mark)

[A] 1000

[B] 10000

[C] 2000

[D] 20000

Q.115 Net primary productivity is

(1 mark)

[A] Gross primary productivity – Respiration + Transpiration

[B] Gross primary productivity – Respiration

[C] Gross primary productivity – Transpiration

[D] Gross primary productivity – Respiration – Transpiration

Q.116 In the last 3 billion years there were five episodes of mass extinction of species. The estimated rates for the sixth extinction (current) are
(1 mark)

- [A] 10 to 20 times faster
- [B] 10 to 50 times faster
- [C] 10 to 100 times faster
- [D] 100 to 1000 times faster

Q.117 The gases responsible for global warming are
(1 mark)

- [A] carbon dioxide, sulphur dioxide, hydrocarbons and carbon monoxide.
- [B] carbon dioxide, methane, chlorofluoro carbons and halogens.
- [C] carbon dioxide, methane, hydrocarbons and carbon monoxide.
- [D] chlorofluoro carbons, halogens, hydrocarbons and carbon monoxide.

Q.118 Presence of excess nitrate in drinking water causes
(1 mark)

- [A] skeletal nitrosis
- [B] black foot disease
- [C] blue baby syndrome
- [D] foot in the mouth disease

Q.119 Among the following, the least abundant gas in Earth's atmosphere is
(1 mark)

- [A] carbon dioxide
- [B] methane
- [C] argon
- [D] hydrogen

Q.120 The Chipko movement to protect trees started in (1 mark)

- [A] Kashmir
- [B] West Bengal
- [C] Madhya Pradesh
- [D] Uttarakhand

Q.121 In a grass → deer → tiger food chain, for a grass biomass of 1000 t (t = tonne), the typical tiger biomass supported is in the range of (1 mark)

- [A] 10 t to 100 t
- [B] 1 t to 10 t
- [C] 10 kg to 100 kg
- [D] 1 kg to 10 kg

Q.122 Most useful wavelength regions of solar energy for efficient photosynthesis are (1 mark)

- [A] green and red
- [B] blue and red
- [C] blue and green
- [D] green and violet

Q.123 For removal of air pollutants, scrubber device uses (1 mark)

- [A] liquid spray
- [B] filters
- [C] electrodes
- [D] catalyst

Q.124 The concentration of an aqueous salt solution in parts per trillion (ppt) is equivalent to number of nanogram of the salt dissolved in

(1 mark)

- [A] 10 gm of water
- [B] 1000 gm of water
- [C] 100 gm of water
- [D] 10000 gm of water

Q.125 The tidal effect is primarily due to

(1 mark)

- [A] the gravitational force of the Moon only.
- [B] the centrifugal force of the Earth's rotation only.
- [C] combination of the gravitational force of the Moon and the centrifugal force of the Earth's rotation.
- [D] the gravitational force of the Sun only.

Q.126 Eutrophication of water body is primarily due to the enrichment of

(1 mark)

- [A] phosphorus
- [B] nitrogen
- [C] carbon
- [D] potassium

Q.127 **This question carries 2 marks. One option or more options is/are correct answer(s) to this question.**

The major cause(s) of land degradation and subsequent soil erosion in relative terms at the global level is/are

(2 marks)

- [A] over grazing
- [B] deforestation
- [C] agriculture
- [D] industrial activity

Q.128 **This question carries 2 marks. One option or more options is/are correct answer(s) to this question.**

Ramsar convention address(es)

(2 marks)

- [A] conservation of terrestrial biodiversity
- [B] conservation of marine diversity
- [C] conservation of wetland
- [D] conservation of mangroves and coral reefs