

Study Circle Career Development Institute

100 Important Points : SSP

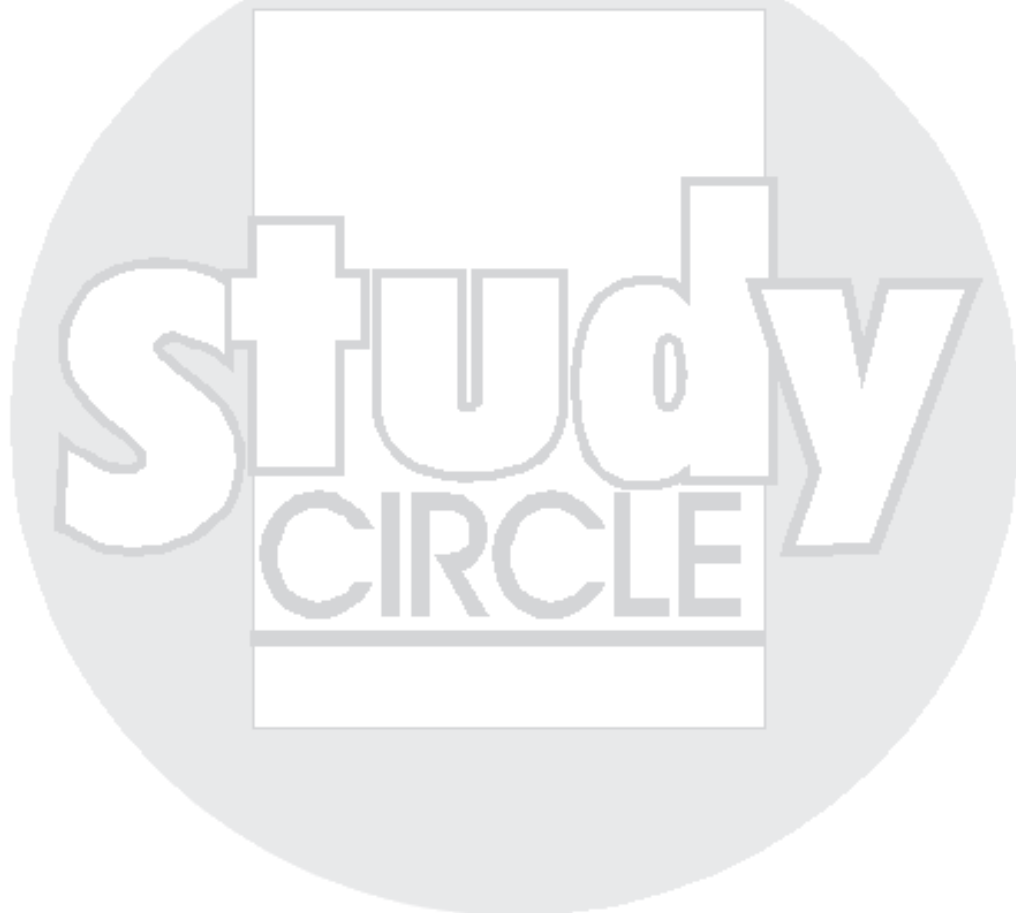


(61) Ecosystem - Energy Pyramid, Food & Material Cycle

5) Environmental Ecology, Bio-diversity & Climate Change

- 1) **Environmental Ecology (2)**
- 2) **Bio-diversity (2)**
- 3) **Climate Change (2)**

- 61) **Ecosystem - energy pyramid, Food chain and webs, Material cycle**
- 62) Environmental imbalance, conservation, Summits and Measures, EIA
- 63) Biodiversity - concept, types, wild life and flora of India
- 64) Sanctuaries and National Parks, Tiger Project, Environmental laws
- 65) Global warming - Role of CO₂ and methane in greenhouse effect
- 66) Pollution - Air, Water, Soil, Sound. Waste management, Mitigation measures



General Studies Paper I

- 1) **History of India and Indian National Movement (15)**
- 2) **Maharashtra, India and World Geography (15)**
- 3) **Maharashtra and India - Indian Polity and Governance (15)**
- 4) **Economic and Social development (15)**
- 5) **Environmental Ecology, Bio-diversity & Climate Change (10)**
- 6) **General Science (15)**
- 7) **Current Events of State, National and International Importance (15)**

1) History of India and Indian National Movement (15)

- 1) History of Ancient India (4)
- 2) History of Mediavel India (3)
- 3) History of Modern India (4)
- 4) Indian National Movement (4)

2) Maharashtra, India and World Geography (15)

- 1) Physical Geography of World (3)
- 2) Social Geography of World (1)
- 3) Economical Geography of World (1)
- 4) Physical Geography of India (2)
- 5) Social Geography of India (1)
- 6) Economical Geography of India (2)
- 7) Physical Geography of Maharashtra (2)
- 8) Social Geography of Maharashtra (1)
- 9) Economical Geography of Maharashtra (1)

3) Maharashtra and India - Indian Polity and Governance (15)

- 1) Constitution (3)
- 2) Political System (3)
- 3) Panchayati Raj & Urban Governance (3)
- 4) Public Policy (3)
- 5) Humana Rights Issues (3)

4) Economic and Social development (15)

- 1) Sustainable Development (2)
- 2) Poverty (2)
- 3) Inclusion (2)
- 4) Demographics (2)
- 5) Social Sector Initiatives (2)
- 6) Indian Economy - Public Finance (1)
- 7) Extrenal Trade (1)

- 8) Banking, Inflation (1)
- 9) Industry (1)
- 10) Agriculture (1)

5) Environmental Ecology, Bio-diversity & Climate Change (6)

- 1) Environmental Ecology (2)
- 2) Bio-diversity (2)
- 3) Climate Change (2)

6) General Science (19)

- 1) Physics (3)
- 2) Chemistry (3)
- 3) Biology and Zoology (2)
- 4) Botany (2)
- 5) Agriculture Science (2)
- 6) Human Biology and (2)
- 7) Health, Hygeine, Food and Nutrition (3)
- 8) ST development & its applications to Infrastructure development (2)

7) Current Events of State, National and International Importance (15)

- 1) Political events (2)
- 2) Organisations (2)
- 3) Economical events (2)
- 4) S & T events (2)
- 5) Geographical events, Places (2)
- 6) Sociocultural events (1)
- 7) Sports events (1)
- 8) Litearature and Days (1)
- 9) Appointments, Personalities (1)
- 10) Prizes and Honours (1)

State Service Preliminary Examination 2024

Preparation & Guidance : Topics & Subtopics of the Syllabus

100 Important Points Environment : 61

- 1) With reference to ecological succession, which of the following best describes 'Sere'?
- It is the sequence of communities succeeding each other.
 - It is the first stage of succession that invades bare land.
- Answer Options :**
- 1) (a) only 2) (b) only 3) Both (a) and (b) 4) Neither (a) nor (b)
- 2) Which of the following statements best describes biotic potential?
- It refers to the potential biomass of a population measured as dry weight per unit area.
 - It refers to the possible functional roles species can play in an ecosystem.
 - It refers to the maximum reproductive capacity of an organism under optimum environmental conditions.
 - It refers to the minimum population of a species required to sustain a food web.
- 3) Energy flow in an ecosystem :
- is unidirectional
 - decreases with successive tropic levels
 - increase with successive tropic level
 - remains constant with successive tropic levels
- Answer Option :**
- 1) (a) and (b) only 2) (a), (b) and (c) 3) (a), (c) and (d) 4) (a), (b), (c), (d)
- 4) Complex process of transfer of energy from multiple sources in food chain is called
- 1) Food web 2) Biovolume 3) Food Pyramid 4) None of the above
- 5) Name the law which explains the effect of various abiotic factors on growth and development of plants.
- Liebig's Law of Minimum
 - Mendel's Law
 - Shelford's Law of Tolerance
 - Principles of Site Law
- 6) Interspecific interactions Example
- Commensalism : Interaction between fig tree and
 - Amensalism : Interaction between cattle egret and grazing cattle
 - Mutualism : Interaction between lion
 - Parasitism : Interaction of lice and human
- Which of the above pairs is/are incorrectly matched?
- 1) (a) and (b) only 2) (a), (b) and (d) 3) (a), (c) and (d) 4) (a), (b), (c), (d)

7) Match the following :

'A' Group

- a) Tadoba National Park
- b) Nagzira Sanctuary
- c) Sagareshvar Sanctuary
- d) Karnala Sanctuary

'B' Group

- i) Raigad
- ii) Sangli
- iii) Bhandara
- iv) Chandrapur

Answer Options :

- | | (a) | (b) | (c) | (d) |
|----|-------|-------|-------|------|
| 1) | (iv) | (iii) | (i) | (ii) |
| 2) | (iv) | (i) | (iii) | (ii) |
| 3) | (iii) | (iv) | (i) | (ii) |
| 4) | (iv) | (iii) | (ii) | (i) |

8) Consider the following statements :

- a) Ecological niche describes not only the physical space occupied by an organism, but also its functional role in the community of organisms.
- b) The transitional area between two living organisms is known as Ecotone

Answer Option :

- 1) (a) only 2) (b) only 3) Both (a) and (b) 4) Neither (a) nor (b)

9) Heterotrophic organisms, chiefly bacteria and fungi that breakdown the complex compound of dead protoplasm and release simple usable substances of other organisms are :

- 1) Autotrophs 2) Decomposers 3) Consumers 4) Omnivorous

10) Which of the following is not Primary Consumer of Ecosystem ?

- 1) Sheep 2) Rabbit 3) Snake 4) Deer

11) Study of relationship of individual species with its environment is called as

- 1) Meteorology 2) Autecology 3) Synecology 4) terminology

12) Ecological agriculture is agricultural production system.

- a) multi - layered b) multi - structured c) multi-functioned d) comprehensive

Answer Option :

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

13) Which statements are true of the agroecological system ?

- | | |
|------------------------------|---------------------------|
| a) Low intensity of tillage | b) High plant diversity |
| c) High petroleum dependance | d) Low labour requirement |

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

14) Which of the following Food Chain is correct ?

- 1) Grass + Grass hopper + Hawk + Snake 2) Grass hopper + Grass + Snake + Hawk
3) Grass + Grass hopper + Snake + Hawk 4) Hawk + Snake + Grass hopper + Grass

15) Who coined The term 'Ecosystem' in 1935 ?

- 1) A. Tansley 2) G. Darwin 3) I. Newton 4) Rudarford

- 16) Which type of farming plays an important role in achieving the goal of sustainable agriculture?
1) Organic farming 2) Dry land farming 3) Rain dependent farming 4) Lay farming
- 17) *Cynodon dactylon* is suitable for
1) Check dam 2) Rill control 3) Gully control 4) Grassed water way
- 18) Which one of the following two statements is **incorrect**?
a) Rice research institutes have been established at Karjat, Khopoli, Ratnagiri but not at Sawantwadi.
b) In West Bengal three crops of rice are taken in a year.
Answer options :
1) (a) only 2) (b) only 3) Both (a) and (b) 4) Neither (a) nor (b)
- 19) Consider the following statements concerning food chains:
a) Removal of 80% tigers from an area would result in increased growth of vegetation.
b) Removal of carnivores would result in an increased population of deer.
c) The length of food chain is generally limited to 3 -4 trophic levels due to energy loss.
d) The length of food chains may vary between 2 to 8 trophic levels.
Answer Option :
1) (a) and (b) only 2) (b) and (c) 3) (a), (c) and (d) 4) (a), (b), (c), (d)
- 20) With reference to the food chains in ecosystems, which of the following kinds of organism is/are known as decomposer organism/organisms?
a) Virus b) Fungi c) Bacteria
Answer Option :
1) (a) and (b) only 2) (a) and (c) 3) (b) and (c) 4) (a), (b) and (c)
- 21) Which of the following is/are advantage of Agro forestry ?
a) To ensure better land use b) To generate employment
c) To manage agricultural land only with family members d) To conserve soil moisture
Answer options :
1) (a) and (b) only 2) (a), (b) and (d) 3) (a), (c) and (d) 4) (a), (b), (c), (d)
- 22) Why have developed countries put ban on DDT a pesticide ?
1) Quality of soil was decreasing 2) Soil erosion was increasing
3) It was affecting food-chain system. 4) Salinity of Agriculture land was increasing
- 23) The term ecology :
a) also known as 'Environmental Biology' b) first was introduced by 'Earnst Haeckel'
c) derived from two Greek words namely, oikos = Home and logos = study/science.
d) derived from two Latin words namely, oikos = Home and logos = study/science
Answer Option :
1) (a) and (b) only 2) (a), (b) and (c) 3) (a), (c) and (d) 4) (a), (b), (c), (d)

- 24) Which of the following statement about Ecosystem is /are correct?
- a) It is entirely a biological entity.
 - b) It is an integrated unit
 - c) It is a study of interaction between physical environment and biological components.
 - d) It is a study of structural and functional aspects.

Answer Option :

- 1) (a) and (b) only 2) (a), (b) and (c) 3) (a), (c) and (d) 4) (a), (b), (c), (d)
- 25) Consider the Food Pyramid given below showing the interdependence of plants and animals in the food chain

Carnivore

Small

Carnivore

Herbivore

Plant

Food Pyramid

Which of the following in the pyramid is most delicately balanced in the chain?

- 1) Herbivore 2) Plant 3) Top Carnivore 4) Small Carnivore
- 26) Which one of the following is the correct sequence of ecosystems in the order of decreasing productivity?
- 1) Oceans, lakes, grasslands, mangroves 2) Mangroves, oceans, grasslands, lakes
 - 2) Mangroves, grasslands, lakes, oceans 4) Oceans, mangroves, lakes, grasslands
- 27) In the context of ecosystem productivity, marine upwelling zones are important as they increase the marine productivity by bringing the ...
- a) decomposer microorganisms to the surface.
 - b) nutrients to the surface.
 - c) bottom-dwelling organisms to the surface.

Answer Option :

- 1) (b) only 2) (a) and (c) 3) (b) and (c) 4) (a), (b) and (c)
- 28) Consider the following statements:
- a) Most of the world's coral reefs are in tropical waters.
 - b) More than one- third of the world's coral reefs are located in the territories of Australia, Indonesia and Philippines.
 - c) Coral reefs host far more number of animal phyla than those hosted by tropical rainforests.
 - d) Great barrier reef is in Atlantic ocean.

Answer Options :

- 1) a is correct, but b,c and d are incorrect.
- 2) b and d are incorrect, but a and c are correct
- 3) a, b and c are correct, but d is incorrect
- 4) d is incorrect, but a,b and c are correct

29) Match the **List - I** with **List - II**

List - I (Green House Gases)

- a) Carbon dioxide (CO₂)
- b) Methane (CH₄)
- c) Chlorofluorocarbons (CFCs)
- d) Nitrous Oxide (N₂O)

List - II (Share in Global Warming %)

- i) 06
- ii) 14
- iii) 20
- iv) 60

Answer options :

- | | (a) | (b) | (c) | (d) |
|----|-------|-------|-------|------|
| 1) | (i) | (ii) | (iii) | (iv) |
| 2) | (ii) | (iii) | (iv) | (i) |
| 3) | (iii) | (iv) | (i) | (ii) |
| 4) | (iv) | (iii) | (ii) | (i) |

30) Ecological succession is characterized by :

- a) Increased productivity
- b) Decreased niche development

Answer Options :

- 1) (a) only
- 2) (b) only
- 3) Both (a) and (b)
- 4) Neither (a) nor (b)

31) Arrange the following steps of Environment Impact Assessment in the chronological order:

- a) Management and monitoring
- b) Screening
- c) Audit
- d) Prediction and mitigation
- e) Scoping

Answer Options :

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

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

- a) insects and fungi
- b) limited sunlight and paucity of nutrients
- c) water limits and fire
- d) None of the above

Answer Options :

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

33) What would happen if phytoplankton of an ocean is completely destroyed for some reason?

- a) The food chains in the ocean would be adversely affected,
- b) The ocean as a carbon sink would be adversely affected,

Answer Options :

- 1) (a) only
- 2) (b) only
- 3) Both (a) and (b)
- 4) Neither (a) nor (b)

34) Most common microorganisms grow best in the pH range

- 1) 4.5 - 8.5
- 2) 4 - 5
- 3) 4.5 - 6
- 4) 6 - 8

35) Consider the following :

- a) Photosynthesis
 - b) Respiration
 - c) Decay of organic matter
 - d) Volcanic action
- Which of the above add carbon dioxide to the carbon cycle on Earth.?

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

36) Match the following :

Column-I (Environment Legislations)

- a) Environment Protection Act
- b) Scheme of Labelling Environment Friendly Products
- c) Biomedical Waste Management
- d) Recycled Plastics Manufacture and, Usage Rules

Column-II (Year)

- i) 1998
- ii) 1986
- iii) 1999
- iv) 1991

Answer options :

- | | (a) | (b) | (c) | (d) |
|----|------|-------|-------|-------|
| 1) | (i) | (iii) | (iv) | (ii) |
| 2) | (iv) | (ii) | (i) | (iii) |
| 3) | (ii) | (iv) | (i) | (iii) |
| 4) | (ii) | (iv) | (iii) | (i) |

37) Which of the following is a microfauna ?

- 1) Bacteria
- 2) Nematodes
- 3) Actinomycetes
- 4) Fungi

38) The genera of blue green algae, that fixes atmospheric nitrogen in rice is :

- 1) Cyanophyta
- 2) Anabaena
- 3) Chlorophyta
- 4) None of the above

39) Dr. Balasaheb Sawant Konkan Agricultural University has developed a new variety of mango, 'Konkan-Samrat', which is a hybrid of Alphonso and Tommy Atkins.

In comparison with Alphonso it :

- a) fruits every year.
- b) however is less disease resistant.

Answer Option :

- 1) (a) only
- 2) (b) only
- 3) Both (a) and (b)
- 4) Neither (a) nor (b)

40) The first Agricultural University in India was established in the name of

- 1) Dr. Panjabrao Deshmukh
- 2) Govind Ballabh Pant
- 3) Choudhari Charan Singh
- 4) Chandrashekhar Azad

41) How does National Biodiversity Authority (NBA) help in protecting the Indian agriculture?

- a) NBA directly monitors and supervises the scientific research on genetic modification of crop plants.
- b) Application for Intellectual Property Rights related to genetic / biological resources cannot be made without the approval of NBA.

Answer Options :

- 1) (a) only
- 2) (b) only
- 3) Both (a) and (b)
- 4) Neither (a) nor (b)

42) Which hormone is synthesized in leaves under photoinductive cycle, which induces flowering in plants?

- 1) Phytochrome
- 2) Florigen
- 3) ABA
- 4) None of the above

43) The organisms who do not produce their food themselves are known as

- 1) Secondary consumers
- 2) Primary consumers
- 3) Decomposers
- 4) Carnivores

- 44) Which of the following are correct about Eco system?
a) An Eco system represents the sum of all living organisms and physical environment.
b) Eco system occupies certain well defined area on the earth.
c) Solar energy is the most significant source of energy.
d) Three basic components of eco system include, energy, biotic and abiotic.

Answer options :

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

- 45) Which of the following components play an important role in the function of Ecosystem?
a) Food chain b) Food web c) Trophic level d) Ecological Niches

Answer options :

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

- 46) The transitional area between two living organisms is known as

- 1) Ecozone 2) Ecophos 3) Ecotone 4) Ecotype

- 47) Consider the following statements:

- a) On the planet Earth, the fresh water available for use amounts to about less than 1 % of the total water found
b) Of the total fresh water found on the planet Earth 95% is bound up in polar ice caps and glaciers

Answer Option :

- 1) (a) only 2) (b) only 3) Both (a) and (b) 4) Neither (a) nor (b)

- 48) Which one of the following statements is **correct**?

- 1) Less than 1% of the country's land area is under mangroves.
2) Mangroves have been reported in all the 12 coastal states / UTs.
3) West Bengal has the maximum mangrove cover in the country.
4) All the above three

- 49) The microbial process in which ammonia is converted into Nitrate is known as .

- 1) Nitrification 2) Nitrogen fixation 3) Ammonification 4) Mineralisation

- 50) The word 'Denisovan' is sometimes mentioned in media in reference to

- 1) fossils of a kind of dinosaurs
2) an early human species
3) a cave system found in North-East India.
4) a geological period in the history of Indian subcontinent