

Test Series Programme 2020

NEETU SINGH IAS

Test Booklet Series

Date : 01/03/2020

Serial No.

12020A

TEST BOOKLET

TEST - 3

Environment/ Ecology & Climate Change

B

Time Allowed : 2 hours

Maximum Marks : 200

INSTRUCTIONS

- 1 IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UN PRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
- 2 ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.
- 3 You have to enter your Roll Number/Serial No. on the Test Booklet in the Box provided alongside. DO NOT write anything else on the Test Booklet.
- 4 This Test Booklet contains **100 items** (questions). Each item is printed in English. Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE response for each item**. All items carry equal marks.
- 5 You have to mark all your responses **ONLY** on the separate Answer Sheet provided.
- 6 Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate .
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 - (iii) If a question is left blank i.e. no answer is given by the candidate there will be **no penalty** for that question

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DIRECTION

1. Ecology is concerned with four levels of biological organization

1. Population
2. Communities
3. Organism
4. Biomes

Which one of the following is correct order of these organizations?

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

2. Consider the following :

1. Temperature
2. Water
3. Light
4. Soil

Which among these are key elements that develop variations in the physical and chemical conditions of different habitats?

- (a) All of them (b) 1, 2 and 3
(c) 1, 3 and 4 (d) 2, 3 and 4

3. According to Shelford's law of tolerance, an organism with wide tolerance limit for environmental factors show –

- (a) wide distribution with low population size
- (b) wide distribution with high population size
- (c) narrow distribution with low population size
- (d) narrow distribution with high population size

4. Any feature of an organism which enables it to exhibit conditions of its habitat is known as

- (a) Adaptive variation
- (b) Adjustment
- (c) Niche
- (d) Adaptation

5. Which of the following is not a characteristic of heliophytes?

- (a) Long lateral roots
- (b) Numerous rootlets
- (c) Stem with long internodes
- (d) Vigorous flowering and fruiting

6. In thermal stratification, where in middle strata vertical temperature changes is called –

- (a) Epilimnion
- (b) Mesolimnion
- (c) Hypolimnion
- (d) Metalimnion

7. Most probable vegetation type in region of 60-120 cm of annual rain is

- (a) Steppe grassland
- (b) Sub humid tropical forest
- (c) Dry and sub tropical grassland
- (d) Tropical rainforest

DIRECTION

8. In a pond ecosystem, the bottom area where respiration is more than production is called

- (a) Limnetic zone
- (b) Profundal zone
- (c) Benthic zone
- (d) Tidal zone

9. Consider the following statements:

1. Sciophytes are plants that grow under direct sunlight.
2. Psamophytes are plants that grow under shades.

Correct ones are/is –

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

10. The energy flow in an ecosystem is

- (a) in any direction
- (b) always unidirectional
- (c) always bidirectional
- (d) always multidirectional

11. The ratio between energy flow at different points along the food chain is called

- (a) Ecological efficiency
- (b) Ecological capacity
- (c) Ecological potential
- (d) Ecological assimilation

12. Consider the following statements:

1. Species with wide geographical ranges which develop locally adapted population are called ecotypes.
2. Lincoln index is used to measure population size.
3. The ability of population of living species to increase under ideal environmental conditions is called carrying capacity.

Correct ones are/is

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

13. In ecology, the term biocenosis specifically explains

- (a) Ecological study of communities
- (b) Ecological study of individual studies
- (c) A group of organism inhabiting a particular area
- (d) A group of many species of plants and animals living together in a natural area.

14. The aquatic animals in Polar Regions survive even in freezing temperature. This can be best explained by

- (a) The thick layer of fat deposition in their skin
- (b) By migrating to warmer regions during winters
- (c) Due to the high density of water
- (d) Due to neutral pH of soil at cold conditions

DIRECTION

15. Which of the following statement explains standing crop and standing quality?
- (a) Total organic matter and total inorganic matter respectively in an ecosystem
- (b) Total crop cultivated and total crop harvested respectively in an area
- (c) Biomass of plants and biomass of animals respectively in an ecosystem
- (d) Biomass of dead matter and biomass of decomposers respectively in an ecosystem
16. Which of the following statement is not correct?
- (a) Pyramid of number can never be inverted.
- (b) Pyramid of energy can ever be inverted.
- (c) Pyramid of number in a parasitic food chain will be inverted.
- (d) Pyramid of biomass may be inverted or upright.
17. The extremities of animals are relatively shorter in the cooler parts of a species range than in warmer parts is
- (a) Bergmann's Rule
- (b) Allen's Rule
- (c) Gloger's Rule
- (d) Rensch's Rule
18. Which of the following statements best describes a climax community?

- (a) More stable and more diverse
- (b) More stable and less diverse
- (c) Less stable and more diverse
- (d) Less stable and less diverse

19. Consider the following statements:

1. Chemosynthetic bacteria are heterotrophs.
2. They use hydrogen sulphide as energy source.
3. They are confined in deep oceans as their habitat.

Correct ones for chemotrophs is/are

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

20. Consider the following pairs:

1. Lotic water system - Freshwater Ecosystem
2. Tidal marshes - Estuarine Ecosystem
3. Oceans - Marine Ecosystem

Which of the characteristics and biomes are correctly paired?

- (a) All of them (b) 2 and 3
- (c) 1 and 3 (d) 1 and 2

21. Consider the following Wildlife Sanctuaries of India:

1. Shikari Devi
2. Bhadra
3. Tikarpara
4. Panchmarhi

DIRECTION

Which among the following is correct order in terms of location from south to north?

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

22. In order for biomagnifications to occur, which of the characteristics of pollutants is/are required?

1. Short lived
2. Mobile
3. Soluble
4. Biologically active

Correct ones are

- (a) All of them (b) 2, 3 and 4
(c) 1, 3 and 4 (d) 1, 2 and 3

23. Consider the following statements about Nutrient Cycles:

1. These are also called biogeochemical cycles.
2. Most gaseous cycles are considered as imperfect cycle.
3. These cycles are categorized depending on nature of the reservoir.

Correct ones are

- (a) 1 and 2
(b) 2 and 3
(c) 1 and 3
(d) All of them

24. Consider the following:

1. Ice sheets and Glaciers
2. Atmosphere
3. Soil moisture
4. Ground water

Which of the following is correct order of global distribution of water?

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

25. Gause's competitive exclusion principle states that two specimen having identical requirements cannot occupy same niche indefinitely. Consider the following:

1. Habitat
2. Food
3. Reproductive
4. Physical-Chemical

Which of these are considered as Niche variants?

- (a) All of them (b) 1, 2 and 3
(c) 2, 3 and 4 (d) 1, 3 and 4

26. Consider the following statements:

1. Lakes and ponds rich in nutrients and high productivity are called Oligotrophic
2. Lakes and ponds with limited nutrient supply and little productivity are called eutrophic

DIRECTION

3. Succession in aquatic habitat is called hydrarch.

Correct ones is/are

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

27. Consider the following pairs:

1. Ephemerals – drought evader plants
2. Succulents – drought resistant plants
3. Non succulents – drought enduring plants

Correct ones is/are

- (a) All of them (b) Only 2
(c) Only 1 (d) 2 and 3

28. Consider the following statements:

1. Epiphytes are plants which grow perched on other plants.
2. Tropophytes are plants which are both mesophytes and hydrophytes.
3. Halophytes are plants which grow on soils with high salt concentration.

Correct ones are

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

29. Ecology is study of an individual species called

1. Community ecology
2. Autecology
3. Species ecology

4. Synecology

Correct ones is/are

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

30. In soil, water available for plants is

- (a) gravitational water
- (b) chemically bound water
- (c) capillary water
- (d) hygroscopic water

31. Consider the following:

1. The ecological niche of an organism depends on sum total of its environmental requirements.
2. Species that occupy same niche in different geographical regions are guilds.

Correct ones for niche are/is

- (a) 1 and 2 (b) Only 1
(c) Only 2 (d) Neither 1 nor 2

32. Consider the given pairs:

1. Phototaxis - Movement of organism in response to light
2. Phototropism - The growth or orientation of organism in response to light
3. Photokinesis - A change in speed of locomotion in response to change in light intensity

DIRECTION

Correct ones are

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

33. Consider the following in regards to Indian State of Forest Report 2019:

1. Karnataka has registered highest increase in forest cover.
2. Except Assam and Tripura, all North Eastern Estates have registered decrease in forest cover.
3. India accounts for 2% of global forest area.

Correct ones are

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

34. Consider the following:

1. Bijamitra
2. Jiwamrita
3. Agniastra
4. Waaphasa

Which of these are included as four wheels of zero budget natural farming?

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

35. Enriching, recreational, aesthetics and spiritual services provided by ecosystem belongs to

- (a) Provisioning services

(b) Regulating services

(c) Supporting services

(d) Cultural services

36. Consider the following:

1. Site selection and planning
2. Innovation
3. Building planning and construction
4. Building operation and maintenance

Which among these are included in GRIHA criteria?

- (a) All of them (b) 1, 2 and 3
(c) 2, 3 and 4 (d) 1, 3 and 4

37. Consider the given pairs of pollutants and sources of production:

1. Oxides of Nitrogen : By product in manufacturing of fertilizer
2. Methane : Municipal landfills
3. Carbon monoxide : Biomass burning

Correct ones are

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

38. Consider the following statements:

1. India is signatory of UNCCD.
2. Ministry of Environment, Forest and Climate Change is the nodal Ministry of UNCCD.

Correct ones are

DIRECTION

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

39. Coral reefs are not found in which of the following regions?

- (a) Lakshadweep Islands
(b) Gulf of Kutch
(c) Mannar Gulf
(d) Khambhat Gulf

40. The term soil impoverishment relates to which of the following?

- (a) Soil erosion
(b) Soil deposition
(c) Increasing plant nutrient deficiency in soil
(d) Soil getting enriched with plant nutrient

41. Consider the following:

1. Migration
2. Reaction
3. Stabilization
4. Nudation

Which among the following is correct sequential phase in the successional development of vegetation community in the habitat?

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

42. Consider the given pairs:

1. Oxisol : Very rich in humus
2. Vertisol : Rich in clay content
3. Histosol : Mineralised soil
4. Entisol : Soil lacking in horizons

Which of these are correct pairs of soil and characteristics?

- (a) All of them (b) 2, 3 and 4
(c) 1, 2 and 3 (d) 1, 3 and 4

43. Which of the following is not a primary function of a green leaf?

- (a) Manufacture of food
(b) Interchange of gases
(c) Evaporation of water
(d) Conduction of food and water

44. In which of the following physiological processes, excess water escapes in the form of droplets from a plant?

- (a) Transpiration
(b) Guttation
(c) Secretion
(d) Excretion

45. Consider the tiger reserves of India:

1. Dudhwa
2. Panna
3. Pench
4. Indravati

DIRECTION

What will be the correct order of their location from North to South?

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

46. A biological community in its environment such as an ocean, forest or aquarium is known as

- (a) Biome
(b) Environment
(c) Components
(d) Ecosystem

47. What are the main constituents of biogas?

- (a) Methane and sulphur dioxide
(b) Methane and carbon dioxide
(c) Methane, Hydrogen and Nitric oxide
(d) Methane and Nitric oxide

48. Which of the following is known as a zone of sharp salinity change in vertical section of ocean?

- (a) Thermocline
(b) Halocline
(c) Pycnocline
(d) Photic zone

49. Consider the following about National Action Plan for conservation of migratory birds?

1. It includes 20 selected wetlands.
2. It is along Central Asian flyway
3. It is the constituent of Convention on Migratory Species

Correct ones are

- (a) All of them (b) 2 and 3
(c) 1 and 3 (d) 1 and 2

50. Consider the following:

1. Northern Terrapin
2. Clouded Leopard
3. Humpback Whale
4. Red Panda

Which among these is included in the recovery program of wildlife protection recently?

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

51. Consider the given statements:

1. Eco sensitive zones are declared under Wildlife Protection Act, 1972.
2. These zones have permitted activities as mining and manufacturing.

Correct ones is/are

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

DIRECTION

52. Consider the following:

1. Maintain/restore soil fertility
2. Mitigate drought effects
3. Integrate dynamics of land, climate biodiversity

The strategic framework of UNCCD 2018-2030 includes

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

53. In regards to Special Report on Global Warming at 1.5 C of IPCC, consider the following:

1. CO₂ emissions would have to decline by 45% before 2030.
2. Renewable energy need to supply 80% of power by 2050.

Which among these is/are the suggested mitigation efforts:

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

54. Consider the following:

1. Spatial Niche
2. Trophic Niche
3. Hypervolume Niche

Which among these are included as aspects of ecological Niche?

- (a) All of them (b) 1 and 2
(c) 1 and 3 (d) 2 and 3

55. Consider the following:

1. Web-based monitoring of 8 different pollutants
2. 6 defined categories of health impact
3. Constituent of National Air Monitoring Program

Correct ones for National Air Quality Index includes

- (a) All of them (b) 1 and 2
(c) 2 and 3 (d) 1 and 3

56. The 22-km long Mumbai Trans harbour link between Sewri to JNP is set influence habitat of

- (a) Lesser Flamingo
(b) Red Knot
(c) Eurasian Curlew
(d) White headed duck

57. Consider the following:

1. Sea surface temperature
2. Coral collection
3. Pollution
4. Boat anchors

Which among these are/is considered to be the main cause of mass coral bleaching experienced in Indian Coral Reef region?

- (a) All of them (b) Only 1
(c) 1, 2 and 3 (d) 1 and 3

DIRECTION

58. Consider the following:

- 1. Habitat : Specific physical place occupied by an organism
- 2. Biotope : Environment of any given community
- 3. Ecotope : Habitat and niche of any organism

Correct ones are

- (a) All of them
- (b) 1 and 2
- (c) 2 and 3
- (d) 1 and 3

59. In regards to Milancovitch cycle, consider the following:

- 1. Eccentricity
- 2. Obliquity
- 3. Solar output variation

Which one is/are correct?

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

60. Consider the following statements:

- 1. Water hyacinth tolerates cadmium by binding it to their proteins.
- 2. Phytoremediation is use of plants to remove salts from soil.
- 3. Stenohaline are organisms which can live in wide salinity range.

Correct ones is/are

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

61. Consider the following in regards to Pedogenesis:

- 1. Residual soils are soil formed by transportation by various agencies.
- 2. Transportation soils are formed by weathering and Pedogenesis.

Correct ones are

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

62. Consider the following in regards to host-parasite relationship:

- 1. The organisms which are dependent upon the host plants for their entire nutrition is called holoparasites.
- 2. The organisms which derive only water and mineral from their host plant and produce their own food are called hemiparasites.

Correct ones is/are

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

63. Consider the following:

- 1. Suspend
- 2. Hibernate
- 3. Aestivation
- 4. Diapause

DIRECTION

Which among these are examples of response of animals to abiotic factors?

- (a) All of them (b) 1, 2 and 3
(c) 2, 3 and 4 (d) 1, 2 and 4

64. Consider the following:

1. Cloud cover
2. Tree cover
3. Season cycle
4. Latitude

Which among these influences availability of photo synthetically active radiation?

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

65. Consider the following pairs:

1. Autogenic : Occurs as result of abiotic factors
2. Allogenic : Occurs as result of biotic factors
3. Autotrophic : Occurs if green plants dominate in early stage
4. Heterotrophic : Occurs when animals dominates in early stages

Correct pairs in regards to succession includes

- (a) All of them (b) 2, 3 and 4
(c) 3 and 4 (d) 1, 3 and 4

66. Convention of biodiversity identifies three levels of biodiversity – Genetic, species and

ecosystem. Consider the following in this regard:

1. Alpha diversity : number of species within an area
2. Beta diversity : species diversity between two adjacent ecosystem
3. Gamma diversity : diversity of habitats over total landscape

Correct pairs of species diversity measures are

- (a) All of them (b) 1 and 2
(c) 2 and 3 (d) 1 and 3

67. Stupendemuys geographicus recently mentioned in news are related to which of the following?

1. Reptiles of Columbia and Venezuela
2. One of the largest turtles
3. These are marine water turtles.

Correct ones are

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

68. Consider the following:

1. H1N1 Influenza
2. Ebola
3. SARS
4. Zika virus
5. MERS

DIRECTION

Which among these have been declared global health emergency by WHO in recent times?

- (a) 1, 2, 3 and 4 (b) All of them
(c) 2, 3 4 and 5 (d) 1, 3 4 and 5

69. Consider the following in regards to water laws in India:

1. Water is State subject with no National Unified Law.
2. Centre can deal with water issues under EPA (1986) and Water Prevention and Control and Pollution Act, 1974.
3. Centre can regulate and develop inter-state rivers.

Correct ones are

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

70. Consider the following about Atlantic Conveyor belt:

1. It is part of Thermohaline Circulation.
2. It helps in absorbing and storing atmospheric carbon.
3. Indian Ocean warming is intensifying this circulation.

Correct ones is/are

- (a) All of them (b) 1 and 2
(c) 2 and 3 (d) 1 and 3

71. Consider the following:

1. India has reduced emission intensity of GDP by 21%.
2. Bharat Standard VI compliance for vehicle emissions from April 2020
3. 83 Giga Watts of renewables achieved,

Which among these are the achievements highlighted by India in COP25 Chile 2019?

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

72. Recently urban India has been declared Open Defecation Free (ODF). Consider the following in this regards:

1. **Swachh Bharat Mission ODF** – when not a single person is found defecating in open.
2. **Swachh Bharat Mission ODF**– when public toilets are functional and well maintained + protocol
3. **Swachh Bharat Mission ODF**– when complete sludge management is done ++ protocol

Correct pairs of protocols is/are

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

DIRECTION

73. Which among the following is/are correct for W-SHARP towards SDG6?

1. Mobilized in Marathwada, Maharashtra
2. Aims at mobilizing women leadership
3. UNICEF is the key technical partner.

- (a) 1 and 2 (b) All of them
(c) 1 and 3 (d) 2 and 3

74. In regards to Land Degradation Neutrality, which among the following are included as global indicators?

1. Land cover changes trend
2. Land productivity dynamics
3. Carbon stock measures as soil organic carbon

Correct ones are/is

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

75. Consider the following:

1. Ranthambore - Kuno, Madhav
2. Similipal - Satkosia
3. Bhitarkanika - Gahirmatha
4. Kanha - Pench

Which among these are included as tiger corridor in India?

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

76. In the first Indian State of Birds Report 2019, which among the following Vulture species in India have suffered severe most declines?

- (a) Egyptian Vulture
(b) White-rumped Vulture
(c) Indian Vulture
(d) Griffon Vulture

77. Consider the following statement;

1. Eaglenest reserve of 217 sq km
2. Bugun Liiochicla, the critically endangered rare bird
3. The Community Reserve and tourism spot

The Singchung Village Sanctuary mentioned above is located in

- (a) Mizoram
(b) Meghalaya
(c) Tripura
(d) Arunachal Pradesh

78. Consider the following in regards to Anshupa Lake which was in news recently as successful example of Integrated Coastal Zone Management and revival of lake. It is located in

- (a) West Bengal
(b) Odisha
(c) Andhra Pradesh
(d) Tamil Nadu

DIRECTION

79. Which among the following is included in the 2015 status of World Soil Resource highlights?

1. Carbon residues in soil are more than that in atmosphere and plants.
2. Soil degradation is leading to loss of soil organic carbon.
3. Capturing carbon includes a major climate mitigating step.

Codes:

- (a) All of them (b) 1 and 2
(c) 2 and 3 (d) 1 and 3

80. Which among the following rivers that forms home to Indus Dolphins and gharials is the first river in India to be declared as Conservation Reserve?

- (a) River Jhelum
- (b) River Beas
- (c) River Sutlej
- (d) River Chenab

81. Towards sustainable conservation of water, Atal Bhujal Yojana has been launched recently. Consider the following in this regard:

1. Implemented over period of 5 years (2020-25)
2. Pan Indian implementation

3. Aims at ground water management through community participation

Correct ones is/are

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

82. Consider the following in regards to Energy Trilemma Index:

1. It is released by World Energy Council
2. Sweden and Denmark are the top performers.
3. India and its neighbours are among the laggards.

Correct ones are

- (a) All of them
- (b) 2 and 3
- (c) 1 and 2
- (d) 1 and 3

83. The migratory locusts have largest distribution area among all locusts and grasshoppers worldwide. These have been known for decimating the crops. The recent massive locusts attack have been in

- (a) Rajasthan and Gujarat
- (b) Gujarat and Maharashtra
- (c) Punjab and Haryana
- (d) Madhya Pradesh and Maharashtra

DIRECTION

84. The Transboundary Conservation of Threatened Fresh water Fauna on the highly susceptible flooding challenge of Sunderbans includes which of the following species?

1. Batagur Baska
2. Hilsa
3. Gangetic Dolphin

Correct ones are/is

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

85. Anthrax, recently highlighted in news is

- (a) Tidal inundation adversely affecting mangroves
- (b) Rare bacterial illness that affects animals
- (c) Water management strategy in rural areas
- (d) Conservation of gene pool

86. Which among the following are National Faunal repositories of Zoological Survey of India?

1. Port Blair
2. Solan
3. Kozhikode

Correct ones is/are

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

87. Consider the following statements:

- 1 India has added 10 more wetland to sites protected by Ramsar Convention.
2. Nandur Madhmeshwar is first Ramsar site in State of Maharashtra.

Which among these is/are correct?

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

88. Consider the following for Sloth Bear:

1. It is schedule I animal in India.
2. Habitat includes India, Nepal and Sri Lanka
3. Have nocturnal adaptation

Correct ones are

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

89. Consider the following in regards to Comprehensive Environment Pollution Index:

1. White category industries do not require to attain environment clearance.
2. It includes all the textile industries.
3. There are four colour-based categories of industries.

Correct ones are

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

DIRECTION

90. Amongst all the protected areas in India, which among the following has highest density of Sambar population?

- (a) Ranthambore Tiger Reserve
- (b) Desert National Park
- (c) Keoladeo National Park
- (d) Rann of Kutch

91. Which among the following pairs of most common oil crops for biodiesel production of region is/are correct?

- 1. Rapeseed – Europe
- 2. Soyabean – USA
- 3. Palm Oil – Tropical Asia

Codes:

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

92. Which among the following forms the constituents of Zero Energy Buildings concept promoted by Government of India?

- 1. Net Zero Energy Cost
- 2. Net Zero Energy Emission
- 3. Net Zero Source Energy

Codes:

- (a) All of them
- (b) 1 and 2
- (c) 2 and 3
- (d) 1 and 3

93. Consider the following about threats faced by Civet:

- 1. Hunted for bush meat and fur
- 2. Habitat loss
- 3. Hunted for scent glands

Which among these are recognized as the challenges by IUCN?

- (a) All of them (b) 1 and 2
- (c) 2 and 3 (d) 1 and 3

94. Consider the following islands:

- 1. Baratang
- 2. Kamorta
- 3. Teresa

Which among these islands of Andaman and Nicobar are recommended for oil palm plantation?

- (a) All of them (b) 1 and 2
- (c) 2 and 3 (d) 1 and 3

95. Consider the following:

- 1. Single Window Integrated system for Environment Clearance
- 2. Works under National Green Tribunal
- 3. It monitors environmental clearances from Central, State and District levels.

Which among these are correct for PARIVESH?

DIRECTION

- (a) All of them (b) 1 and 2
(c) 1 and 3 (d) 2 and 3

96. Which among the following pairs of National Parks and animals famous for are correct?

1. Nagarjunasagar - Tiger
2. Periyar - Elephant
3. Manas - Lion
4. Gir - Rhinoceros

Codes:

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

97. Which among the following is responsible for expansion of water in the ocean?

- (a) Carbon dioxide
(b) Nitrous oxide
(c) Carbon monoxide
(d) Sulphur dioxide

98. Consider the following lost species categories by IUCN:

1. Glaucous Macaw
2. Catarina Pupfish
3. Java Lapwing
4. Bishop's Oo

Which among these are birds?

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

99. Ecotone is best described as

- (a) Dense forest ecosystem
(b) Ecosystem of grassland
(c) Transition between two ecosystem
(d) Temporal change between two seral stages

100. Which among the following is correct

sequence of ecosystem in order of decreasing productivity?

- (a) Mangrove, oceans, grassland, lakes
(b) Ocean, lakes, grassland, mangrove
(c) Mangrove, grassland, lake, ocean
(d) Oceans, mangroves, lakes, grassland

DIRECTION

Answer with Explanation

A1 c) Ecology is a subject which studies interactions among organisms and its physical environment. This interaction results in grouping of organism called ecological hierarchy. This includes

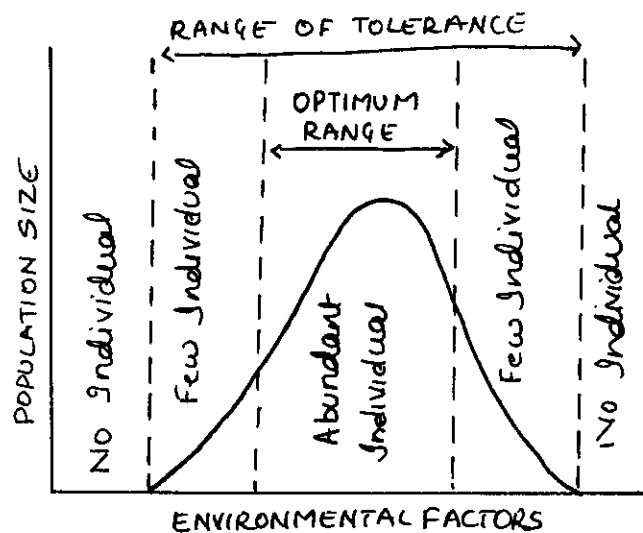


A2 a) Ecology at organism level is essentially physiological ecology, which attempts to understand how organisms are adapted to their environment to survive and reproduce. The key elements that influences these includes temperature, water, light and soil.

A3 b) Shelford's law of tolerance is principle developed by American zoologist V. Ernest Shelford in 1913. It states -

- distribution of species is controlled by envtal factor for which organism

has lowest range of tolerance, the organisms which have wide range of tolerance will be well distributed

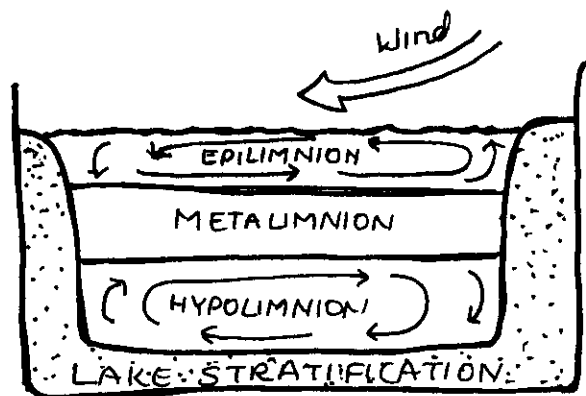


A4 d) Adaptation is evolutionary process where an organism become better suited to its habitat. This process takes place over many generations

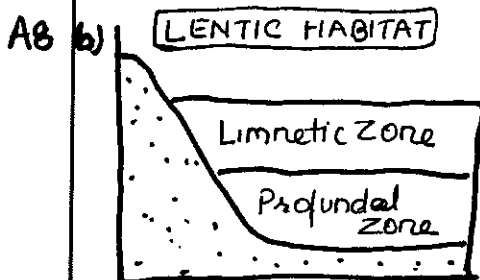
Adaptive variation/radiation is relatively fast evolution of many species from a single common ancestor.

A5 c) Heliophytes are plants that best grows in full sunlight. These have thicker stem, short internodes many branches, well developed roots, thick leaves. Intense light favours formation of flowers, fruits and seeds.

A6 d) A Thermocline, called Metalimnion in lakes is a thin, distinct layer of water in which temperature changes rapidly



A7 c) Large expanse of tropical, subtropical land receives seasonal annual rain between 60-120 cm, thus do not support extensive trees



The Profundal zone of an inland water body as lake/pond, is located below the range of effective light penetration, thus primary production do not prevail

A9 d) Sciophytes - grows in shade
 Psamophytes - grows in sandy surface
 Both the given statements are incorrect.

DIRECTION

Answer with Explanation

3

A10 b) The flow of energy in the ecosystem is unidirectional because the energy lost as heat from the living organisms of food chain cannot be reused by plants in photosynthesis

A11 a) • The ecological efficiency is ratio of net productivity (amount of energy) at one trophic level to net productivity at level below

$$NPP(\text{Trophic level } x) : NPP(\text{trophic level } x - 1)$$

- Ecological efficiency varies depending on organisms involved, but usually range from 5-20%.
- This means that 80-95% of energy at one level never transfers to the next

A12 c) • The Lincoln Index provides way to measure population size of individual species developed by F. Charles Lincoln

- The ability of population to increase under ideal environmental condition is called biotic potential

A13 d) A biocenosis, coined by Karl Möbius (1877), describes the interacting organisms living together in a habitat. It is an association of different organisms forming a closely integrated community

A14 e) Underneath frozen (fresh) upper layer, the water remains in its liquid form and does not freeze. Also oxygen is trapped beneath the layer of ice.

A15 a) Standing state/quality is amount of nutrients present in soil.

Standing crop is amount of total biomass present in an ecosystem.

DIRECTION

Answer with Explanation

- A16 a) The number of organisms in a food chain can be represented graphically in a pyramid. Each bar representing the number of individuals in each trophic level of food chain.
It can be upright and inverted.
- A17 b) Bergmann's Rule: Species of larger size is found in colder areas
- Allen's Rule : Limbs of species in colder climate will be shorter
 - Gloger's Rule : heavy pigmented forms are found in humid environment
 - Rensch's Rule : biological rule concerning the relationship between sexual size
- A18 a) A climax community is final stage of succession, remaining relatively unchanged until destroyed by an extreme event.
- A19 a) Chemotrophs are producers, producing food energy and matter by process of chemosynthesis
- A20 a) All the given pairs are correct
- A21 c) Shikari Devi - Himachal Pradesh
Bhadra - Karnataka
Tikarpara - Odisha
Panchmarhi - Madhya Pradesh
- A22 b) Bioaccumulation - entry of pollutants in food chain
Biomagnification - tendency of increasing concentration of pollutants from one trophic level to other

If pollutants are short lived, it will be broken down before it becomes dangerous

- A23 c). A nutrient cycle may be referred as perfect/ imperfect cycle
- Perfect cycle is one in which nutrients are replaced as fast as they are utilised. as gaseous cycle
 - Imperfect cycles are sedimentary cycle where some nutrients are lost or locked and are not available for immediate recycling
- A24 b). Majority of world's supply of water is in the oceans - 97.6%.
- Ice sheets and glaciers hold a large amount of fresh water - 1.86%.
 - Ground water, River, lakes, soil moisture, and atmosphere accounts for rest of share with decreasing order.
- A25 a). Habitat Niche - where it lives
- Food Niche - what is consumed or decomposes
 - Reproductive Niche - how and when it reproduces
 - Physical & Chemical Niche - temperature, land, humidity and other requirements
- A26 c). Eutrophic - lakes rich in nutrients and high in productivity
- Oligotrophic - lakes with limited nutrient and limited productivity
 - Hydarch - aquatic succession
 - Xerarch - barren land succession

DIRECTION

Answer with Explanation

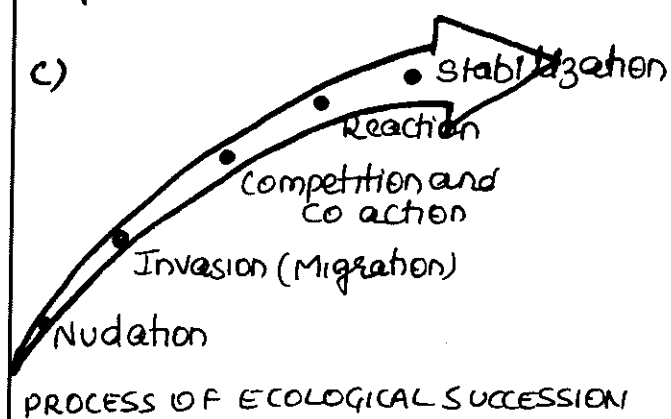
- A27 c) Based on adaptive characters xerophytes are classified as -
- Ephemerals - are drought escapers, these plants complete their life cycles in one season
 - Succulents - are drought enduring plants, they have capacity to store water
 - Non succulents - are drought resistant plants, are true xerophytes
- A28 a) • Epiphytes grow perched on supporting plants
- Tropicophytes are plant adapted to climate conditions with periods of heavy rain followed by drought
- A29 d) Autecology is ecology of an individual species that is also called species ecology
- A30 c) Capillary water held between pore spaces of soil particles and angles between them is the most important form of water available to the plants
- A31 b) Charles Elton was first to use the term niche, that is not only where the organism lives, but the sum total of its environmental requirements.
- Taxonomically different species occupying similar habitats in different geographical regions are called ecological equivalents
 - Group of species with comparable role and niche dimensions within a community is called guilds.

- A32 c) All the pairs are correct.
Phototropism of plant/organism in response to light is positive phototropism → towards light
negative phototropism → away from light.
- A33 b) Top forest cover gain Worst forest cover loss
- | | |
|--|--|
| <ul style="list-style-type: none"> • Karnataka • Andhra Pradesh • Kerala • Jammu & Kashmir • Himachal Pradesh | <ul style="list-style-type: none"> • Manipur • Arunachal Pradesh • Mizoram • Meghalaya • Nagaland |
|--|--|
- Russia accounts for highest 20% of global forest area, followed on by Brazil 12% of global forest area.
- A34 c) 4 wheels of Zero Budget Natural Farming are
- Bijamitra - seed treatment
 - Jiwamitra - soil treatment
 - Mulchug - soil protection
 - Kapaasa - soil enrichment
- A35 d) All four are ecosystem services
- A36 a) Green Rating for Integrated Habitat Assessment GRIHA is promoted by Ministry of New and Renewable Energy for green rating for houses
- A37 b) All are considered to be the major air pollutants
- A38 c) India became signatory of UNCCD in 1994.
Reversing land degradation and accelerating positive achievements for people formed the core agenda of COP14 held in New Delhi (Sept 2019)

- A39 d) Reef types found in country
- Fringing reef - Gulf of Mannar, Gulf of Kutch
Andaman & Nicobar islands
 - Oceanic Atolls - Lakshadweep group of islands
 - Platform Reef - Gulf of Kutch
- Corals do not thrive where water transparency levels are low, thus Gulf of Khambat do not have coral reefs.

- A40 c) Soil impoverishment relates to removal of nutrients from soil. It is also called reverse fertilization.

A41 c)



Nudation - initiation of new plant succession by major environmental disturbances as caused by volcanic eruption.

- A42 b) Oxisol, typical to rainforests of tropics are characterized with low nutrient reserves, extremely leached thus infertile.

- A43 d) The leaves perform three main functions -
Manufacturing of food, interchanging of gases between atmosphere and plant body and evaporation of water.

- A44 b) When water is lost from aerial parts of plants in form of vapour - transpiration

DIRECTION

TEST - 3

Answer with Explanation

9

When water is lost in form of liquid from margins of leaves - Guttation

A45 c) Dudhwa - Uttar Pradesh

Panna - Madhya Pradesh

Pench - Madhya Pradesh

Indravati - Chhattisgarh.

A46 d) An ecosystem is interaction of living and non living things in an environment.
A biome is a specific geographic area known for species living there

A47 b) Biogas is mixture of gases produced by the breakdown of organic matter in absence of oxygen
Biogas is primarily methane and carbon dioxide.

A48 b) In oceanography a halocline (salt slope) is characterised with salinity gradient vertically within a body of water

A49 a) MOEFCC migratory birds action plan is to provide protection to 20 wetlands

- The Action plan will demarcate boundaries of wetland cluster under Wetland Rules 2017
- India includes three flyways - Central Asian, East Asian - Australasian and Asian East African
- Of approximate 370 migratory species 310 are water birds.

DIRECTION

TEST - 3

Answer with Explanation

10

- A50 c) Northern Terrapin - Sunderbans
 Clouded Leopard - Eastern & North Eastern India
 Humpback Whale - Arabian Sea
 Red Panda - Sub Himalayas in NE India

Under Integrated development of Wildlife Habitat
21 recovery programs are active

- Asian wild buffalo
- Asiatic Lion
- Antelope Deer
- Dugong
- Edible Nest Swiftlet
- Great Indian Bustard
- Hangul
- Indian Rhino
- Jerdon's Courser
- Malabar Civet
- Marine turtles
- Nilgiri Tahr
- Nicobar Megapode
- Snow Leopard
- Swamp deer
- Vultures
- Gangetic Dolphin

- A51 d) Eco sensitive zones are notified under Environment Protection Act.

It aims at regulating activities around Protected Areas, to minimize negative impacts on environment.

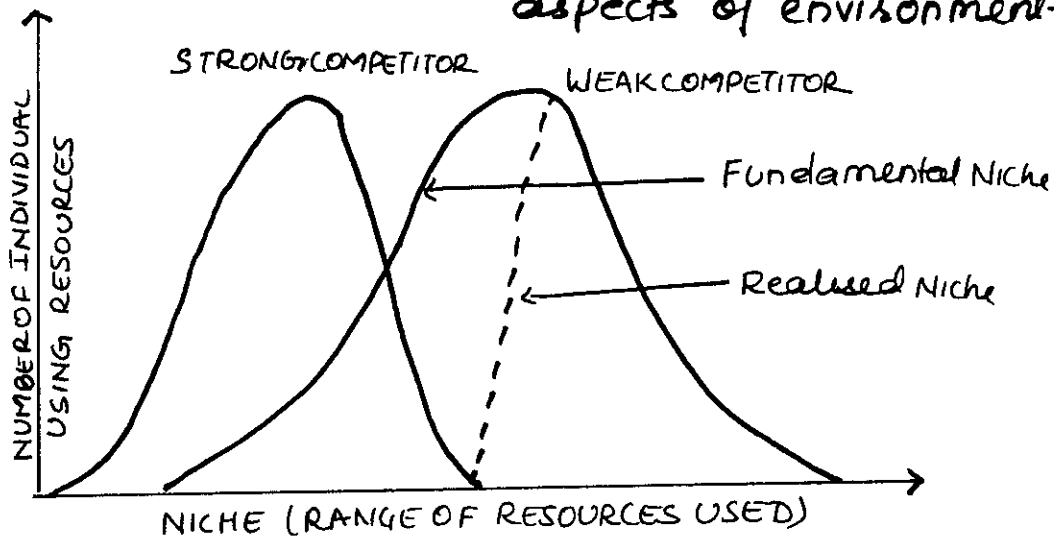
- Permitted Activities - Organic farming
- Regulated Activities - resorts, commercial agr.
- Prohibited Activities - mining, manufacturing

- A52 a) At UNCCD COP13, New Road Map of 2018-2030 Strategic Framework was agreed upon to improve livelihoods of more than 1.3 billion people.

- A53 a) The Special Report on Global Warming of 1.5°C published in 2018 highlights increasing risks to health, livelihood and food security. World has already warmed up by 1°C since pre industrial times.

DIRECTION

- A54 a) Spatial/habitat Niche - physical space occupied by an organism
Trophic Niche - trophic position of an organism in ecosystem
Multi dimensional/Hypervolume Niche - range of activity of organism depends on all aspects of environment-



A55 b) Under Air Quality Index (real time web monitoring)

8 Pollutants - PM_{10} , $PM_{2.5}$, NO_2 , O_3 , CO , SO_2
 NH_4 , Pb are monitored

6 health Categories 1 Good, 3 Moderate, 5 Very Poor
2 Satisfactory 4 Poor 6 Severe

A56 a) Ninety percent flamingoes that migrate to Mumbai are Lesser flamingoes
Sewer, Uran, Mahul, Bhandup, Mulund are important habitats in Thane Creek Flamingo Sanctuary.

DIRECTION

TEST - 3

Answer with Explanation

12

- A57 b) ISRO's Space Application Centre in collaboration with Kurukshetra University outlined the causes of Mass bleaching of Corals in Indian coral reef region - Sea Surface Temperature i.e. heat stress.
- A58 a) All the given pairs are correct
- A59 a) The episodic nature of Earth's glacial and interglacial periods within the present geological age have been caused primarily by variations in Earth's eccentricity, Axial tilt (Obliquity) and Precession collectively called Milancovitch Cycles (proposed by Siberian astronomer Milthun Milancovitch)
- A60 b). Rice and water hyacinth are examples tolerance to toxicity caused by Cadmium
- Phytoremediation is the process of using plants to remove Cadmium from contaminated soil
 - Stenohaline are organisms that withstand small range of salinity.
- A61 d) Based on pedogenesis (soil formation) soils are divided into
- Residual soil formed by weathering
- Transported soil deposited by transporting agents
- A62 d) Holoparasites - are total parasites
- Hemiparasites - are partial parasites

DIRECTION

TEST - 3

Answer with Explanation

13

- A63 a) Responses of animals to abiotic factors include
- Regulate - maintain homeostasis
 - Conform - failing to maintain homeostasis
 - Migrate - escape from stressful habitat
 - Suspend - when unable to escape stressful habitat organism becomes inactive
 - Hibernation - long winter sleep
 - Aestivation - avoiding summer related problem
 - Diapause - temporary pause in growth or development
- A64 d) The amount of light available for photosynthesis of plants is called Photosynthetically Active Radiation (PAR). It is essential for plant growth
- A65 c). Autogenic - occurs as a result of biotic factors
eg in forest ecosystem tall plants provides growth possibilities to sciophytes
- Allogenic occurs as a result of abiotic factors
eg replacement of existing community due to soil erosion.
- A66 a) Edward Wilson popularized the term Biodiversity
Species diversity refers to number and richness of species in a habitat.
- A67 a) Stupendemys is prehistoric, freshwater, side necked turtle. Its fossils have been found in northern South America, in rocks dating from late Miocene to Pliocene

- A68 b) The global Public health emergency (PHEIC) of International Concern is an extraordinary event which can create health emergencies at international levels.
 Since last 10 years declared PHEIC includes
 SARS - 2002/12
 H1N1 Influenza - 2009
 MERS - 2012
 Ebola - 2014/19
 Zika - 2016
 2019-nCoV
- A69 c) There is the National Water Policy in pipeline to regulate this overpressured resource.
 Many countries like Australia, South Africa and Israel have the national policies of water planning
- A70 a) Also called Atlantic Meridional Overturning Circulation (AMOC) is influenced by rising temp. in Indian Ocean.
 Warming of Indian Ocean generates additional precipitation, which in turn draws more air from Atlantic. This reduces precipitation in Atlantic increasing salinity thus circulation.
- A71 d) • Reduced emission intensity of GDP by 21% - target 35%.
 • 83 Gigawatts of renewables - target 450 GW

DIRECTION

TEST - 3

Answer with Explanation

15

- A72 c) As Graded approach to scale up and urban sanitation ODF protocol have been launched. It is third party certification with validity of 6 months.
- A73 b) Women-led Water, Sanitation, Hygiene and Resilient Practices Project - LI-SHARP was implemented in 2018 to test the effectiveness of local participation.
- A74 b) Refer UNCCD details.
- A75 c) The National Tiger Conservation Authority in collaboration with Wildlife Institute of India has published document titled Connecting Tiger populations for Long term Conservation, has mapped 32 major corridors through a Tiger Conservation Plan.
- A76 b) The White Rumped vulture has suffered the most severe decline, followed by Indian Vulture and Egyptian vulture.
- A77 d) The eaglenest Wildlife Sanctuary is home of red panda, clouded leopard and over 500 birds species.
- A78 b) Originally stretching to 230 hectares, encroached by paddy cultivators and excessive use of chemicals as cause of concern.
- A79 a) All statements are correct.
- A80 b) Sand mining and overfishing were the causes of concern.

- A81 c) Atal Bhujal Yojna is a centre sector scheme. Also called Atal Jal, will promote panchayat led ground water management. It is mobilised in seven states - Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh.
- A82 a) The World Energy Trilemma Index 2019, developed in partnership with the World Energy Council, provides an objective rating of national energy system performance across three dimensions -
- Energy Security
 - Energy Equity
 - Environmental sustainability of Energy Systems
- A83 a) Locusts are insects that under certain circumstances becomes abundant. The desert locusts is potentially most dangerous as have high ability to swarm and fly rapidly across great distances.
- A84 a) 'The Sunderbans and Climate Change' - Made public in Convention on Conservation of Migratory Species (CMS) highlighted need for long term coastal planning.
- The forum comprised scientists from Wildlife Institute of India, World Wildlife Fund for Nature, Wildlife Trust of India, Turtle Survival Alliance.
- A85 b) 5 Rhinos died in Jaldepara National Park due to anthrax (West Bengal Feb 2020)

DIRECTION

TEST - 3

Answer with Explanation

17

- A86 c) The National Zoological Collection (NZC) is also designated as repository under Biodiversity Act 2002 for Access and Benefit Sharing (ABS)
- A87 c) India has 37 Ramsar Sites covering 1,067,939 hectares. The 10 new sites are
- Nandur Madhameshwar - Maharashtra
 - Keshopur - Mirari
 - Beas Conservation Reserve
 - Nangal
 - Nawabganj
 - Parbati Agra
 - Saman
 - Samaspur
 - Sandi
 - Sarsai Nawar
- } Punjab
- } Uttar Pradesh
- A88 a) In India Western Ghats Daroji Sloth Bear Sanctuary (Karnataka)
- A89 a) There are 36 industries in White Category which includes biofertilizers, biopesticides, medical oxygen, cotton/wollen hosieries, organic manure etc.
- A90 Sambar deer is found almost in entire India but is mainly confined in central India. Kanha, Corbett, Ranthambore, Gir, Dudhwa are prominent Protected Areas

A91 b) The National Policy on Biofuels - 2018 promotes setting up of supply chain mechanism for biodiesel production from non edible oilseeds. The Policy categorises -

- Biofuels as basic biofuel - bioethanol, biodiesel (16)
- Advanced biofuel - ethanol, municipal solid waste (26)
- Third Generation biofuel - bio CNG (36)

A92 a) Net zero energy building combines energy efficiencies and renewable energy generation. It includes

- Net Zero Energy Cost Buildings - The electricity bill is covered every year by virtue of design and production of energy at the site.
- Net Zero Energy Emission Buildings - measured in a mass of carbon equivalent greenhouse gas emissions related to energy use in the building.
- Net Zero Source Energy Buildings - a building that purchases/produces as much energy for a year by accounting the energy produced at source.
- Net Zero Site Energy Buildings - building that produces at least as much renewable energy as it uses the energy.

A93 e) Indian Civets are also called Kaesturi billi because of scent gland.

In Indonesia these are captured from wild and fed on coffee beans for mass production of trendy coffee in world - Kopi Luwak

- A94 a) 17 years after Supreme Court banned monoculture plantation (oil Palm), there is reinitiation of its cultivation. Areas recommended
- Baratang - mainly inhabited by Jarawa Tribes
 - Komorta - tribal reserve (Aboriginals Regulation 1956)
 - Teressa - area of Nicobarese
 - Little Andaman - area of Orge Tribe
- A95 c) Pro Active and Responsive facilitation by Interactive and Virtuous Environmental Single Window Hub Works under Environment Protection Act 1986 (MOEFCC)
- A96 b) Manas - One horned Rhino
Gir - Lion
- A97 a) Higher amount of CO_2 in the atmosphere leads to higher global temperatures, which is absorbed by water leading to its expansion
- A98 a) Catarina Pupfish - Wetlands Mexico (Neckton)
- A99 c) Buffer between two ecosystems is ecotone
- A100 c) Average Net Primary Productivity ($\text{Kcal/m}^2/\text{yr}$)
1. Estuaries (Mangrooves)
 2. Tropical Rain forest
 3. Temperate forest
 4. Tunga
 5. Savanna
 6. Temperate grass
 7. Lakes/Stream
 8. Oceans