Ravi Maths Tuition

13 Biodiversity and Conservation

12th Standard

Biology

Multiple Choice Question 153 x 1 = 153

1) In 1984, the Bhopal gas tragedy took place because methyl isocyanate

(a) Reacted with ammonia (b) Reacted with CO_2 (c) Reacted with water (d) Reacted with DDT

2) Lead conc. in blood is considered alarming if it is

(a) 30 μg/100 ml (b) 4 - 6 μg/100 ml (c) 10 μg/100 ml (d) 20 μg/100 ml

3) Blood analysis of a patient reveals an usually high quantity of carboxyhaemoglobin content. Which of the following conclusions is most likely to be correct? The patient has been inhaling polluted air containing unusually high content of

(a) Chloroform (b) Carbondioxide (c) Carbon monoxide (d) Carbon disulphide

4) Common indicator organism of water pollution is

(a) Eichhornia crassipes (b) Escherchia coli (c) Entamoeba histolytica (d) Lemna pancicostata

5) The noise produced in office is normally at the level of

(a) 20 db (b) 30 db (c) 40 db (d) 60 db

6) Nitrogen oxides produced from the emission of automobiles and power plants, are the source of fine air born particles which lead to

(a) Photochemical ring (b) Dry acid deposition (c) Industrial smog (d) Wet acid deposition

7) A lake with an inflow of domestic sewage rich in organic waste may result in

(a) Drying of the lake very soon due to algal bloom

(b) An increased production of fish due to lot of nutrients (c) Death of fish due to lack of oxygen

(d) Increased population of aquatic food web organisms.

8) Minamata disease was caused due to the consumption of

(a) Sea food containing lot of cadmium (b) Fish contaminated with mercury

(c) Oysters with lots of pesticide (d) Sea food contaminated with selenium

9) The world environment day is celebrated on

(a) 6th of June (b) 5th of June (c) 6th of August (d) 5th of May

10) Bhopal gas tragedy 1984 was caused by the leakage of gas__

(a) Hydrogen cyanide (b) Ammonia (c) 2, 4-Dichlorophenoxy acetic acid (d) Methyl isocyanate

11) The term 'Bio-magnification' refers to the

(a) Growth of organisms due to food consumption (b) Increase in population size

(c) Blowing up of environmental issues by man

(d) Increase in conc. of non-degradable pollutants as they pass through food chain.

12) Expand BOD

(a) Biological oxygen demand (b) Biosynthetic oxygen (c) Biogeochemical oxygen destroyer

(d) Biogeochemical oxygen dimension

13) This acts as bioindicator of air pollution

(a) Alga (b) Lichen (c) Pinus (d) Mustard (e) Fern

14) Which one of the following is not used for disinfection of drinking water?

(a) chlorine (b) ozone (c) chloramine (d) phenyl

15) Prolonged libral irrigation of agricultural fields is likely to create the problem of

(a) acidity (b) aridity (c) salinity (d) metal toxicity

16) Identify the correct matched pair

(a) Basal convention : Biodiversity conservation (b) Kyoto protocol : Climatic change

(c) Montreal protocol : Global warming (d) Ramsar convention : Ground water pollution

17) More than 70% of world's fresh water is contained in

(a) polar ice (b) glaciers and mountains (c) Antarctica (d) Greenland

18) Which one of the following pairs is mismatched?

(a) fossil fuel burning : release of CO_2 (b) nuclear plant : radioactive wastes

(c) solar energy : greenhouse effect (d) becomes burning : release of CO_2

19) Formation of non-functional methaemoglobin causes blue-baby syndrome. This is due to

(a) excess of arsenic concentration in drinking water (b) excess of nitrates in drinking water

(c) deficiency of iron in food (d) increased methane content in the atmosphere

20) Which one of the following statements pertaining to pollutants is correct?

(a) DDT is a non-biodegradable pollutant (b) excess fluoride in drinking water causes osteoporosis.

(c) excess cadmium in drinking water causes black foot disease.

(d) methyl mercury in water may cause 'Itai Itai' disease.

21) Which of the following is biogas?

(a) CO_2 (b) N_2O (c) CH_4 (d) N_2

22) Which of the following is secondary pollutant?

(a) NO (b) NO_2 (c) SO_2 (d) PAN

23) Limit of BOD prescribed by Central Pollution Control Board for the discharge of industrial and municipal waste waters into natural surface waters, is

(a) < 30 ppm (b) < 3.0 ppm (c) < 10 ppm (d) < 100 ppm

24) Montreal protocol which calls for appropriate action to protect the ozone layer from human activities was passed in the year

(a) 1985 (b) 1986 (c) 1987 (d) 1988

25) The 'blue baby syndrome' results from

(a) excess of TDS (total dissolved solids) (b) excess of chloride (c) methaemoglobin

(d) excess of dissolved oxygen

26) Photochemical smog pollution does not contain

(a) PAN (peroxy acyl nitrate) (b) ozone (c) nitrogen dioxide (d) carbon dioxide

27) Effect of pollution is observed first on

(a) microorganisms (b) food crop (c) green vegetable (d) herbivores

28) Which is always present in photochemical smog ?

(a) ozone (b) CO_2 (c) SO_2 (d) CH_4

29) Pollution from animal excreta and organic waste from kitchen can be most profitably minimized by

(a) storing them in underground storage tanks (b) using them for producing biogas (c) vermiculture

(d) using them directly as biofertilizers

30) Which one of the following is an environment related disorder with the correct main cause?

(a) block lung disease (pneumoconiosis) found mainly in workers in stone quarries and crushers.

(b) blue baby disease (methaemoglobinaemia) due to heavy use of nitrogenous fertilizers in the area.

(c) Non-hodgkin's lymphoma found mainly in workers involved in manufacture of neem based pesticides

(d) skin cancer mainly in people exposed to benzene and methane

31) The Montreal protocol refers to

(a) persistent organic pollutants (b) global warming and climatic change

(c) substances that deplete the ozone layer (d) biosafety of genetically modified organisms

32) In which one of the following the BOD (Biochemical oxygen Demand) of sewage (S), distillery effluent (DE), paper mill effluent (PE) and sugar mill effluent (SE) have been arranged in ascending order?

(a) SE < PE < S < DE (b) PE < S < SE < DE (c) S < DE < PE < SE (d) SE < S < PE < DE

33) In a coal fired power plant electrostatic precipitators are installed to control emission of

(a) NO_X (b) SPM (c) CO (d) SO_2

34) Which of the following is being utilized as a source of biodiesel in the Indian countryside?

(a) beetroot (b) sugarcane (c) Pongamia (d) Euphorbia

35) A genetically engineered microorganism used successfully in bioremediation of oil spills is a species of

(a) Trichoderma (b) Xanthomonas (c) Bacillus (d) Pseudomonas

36) Increased asthmatic attacks in certain seasons are related to

(a) eating fruits preserved in tin containers (b) inhalation of seasonal pollen (c) low temperature

(d) hot and humid environment

37) Which one of the following is not a bioindicator of water pollution?

(a) blood worms (b) stone flies (c) sewage fungus (d) sludge worms

38) Aerosols reduce primary productivity by

(a) decreasing O_2 conc. in atmosphere (b) reducing photosynthesis (c) competing with CO_2

(d) being toxic to chloroplast

39) Greenhouse effect is due to

(a) CO_2 (b) CO (c) NO (d) PO_4

40) Effect of pollution is first marked on

(a) microorganism (b) green vegetation of an area (c) food crop (d) none of these

41) Ozone hole results in

(a) UV radiation reaching the earth (b) Cataract (c) increase in skin cancer (d) all the above

42) Checking of reradiating heat by atmospheric dust, O_3, CO_2 and water vapours is

(a) green house effect (b) solar effect (c) ozone layer effect (d) radioactive effect

43) Which of the following are the indicators of pollution?

(a) lichen (b) fungi (c) algae (d) none of these

44) Ultra violet radiations from sunlight causes a reaction that produces

(a) fluorides (b) carbon monoxide (c) sulphur dioxide (d) ozone

45) Which of the following metals causes harmful effects?

(a) lead (b) cobalt (c) uranium (d) all of these

46) Ozone is spread in the swimming pool because

(a) it acts as disinfectant (b) it absorbs UV radiations (c) ozone is easily available from O_2

(d) all of the above

47) Which one of the following is the correct percentage of the two green house gases that contribute to the total global warming?

(a) N_2O 6%, CO_2 86% (b) methane 20%, N_2O 18% (c) CFCs 14%, methane 20%

(d) CO_2 40%, CFCs 30%

48) Which one of the following is being tried in India as a biofuel substitute for fossil fuels?

(a) Musa (b) aegilops (c) Jatropha (d) Azadirichta

49) A lake near a village suffered heavy mortality of fishes within a few days. Consider the following reasons for this.

(a) lots of urea and phosphate fertilizers were used in the crops in the vicinity

(b) the area was sprayed with DDT by an aircraft

(c) the lake water turned green and stinky

(d) phytoplankton populations in the lake declined initially thereby greatly reducing photosynthesis

Which two of the above were main reasons of fish mortality in the lake?

(a) A, C (b) A, B (c) B, C (d) C, D

50) According to Central Pollution Control Board (CPCB), which particulate size in diameter (in μm) of theair pollutant is responsible for greatest harm to human health?

(a) 1.0 or less (b) 5.2 - 2.5 (c) 2.5 or less (d) 1.5 or less

51) Gaseous pollutants are controlled by

(a) arrestors (b) electrostatic precipitators (c) pyrolysis (d) incineration (e) adsorption

52) It is estimated that out of the total global warming the relative contribution of CO_2, CH_4, CFC_s and N_2O are

(a) 60%, 20% 14% and 6% (b) 6%, 14%, 20% and 60% (c) 20%, 60%, 14% and 6%

(d) 20%, 14%, 60% and 6% (e) 14%, 6%, 20% and 60%

53) Mercury pollution causes

(a) black foot disease (b) itai-itai disease (c) blue baby syndrome (d) minamata disease

(e) skeletal fluorosis

54) Which of the following element is responsible for minamata disease?

(a) Hg (b) Pb (c) Cd (d) Fe

55) Increase in BOD in water leads to

(a) increase in the disolved O_2 conc. (b) decrease in the dissolved O_2 conc.

(c) maintenance of disolved O_2 conc. at the same level (d) no effect on dissolved O_2 conc.

56) Freon gas causing stratospheric ozone depletion is mainly released from

(a) refrigerator (b) automobile (c) thermal power plant (d) steel industry

57) The environmental (Protection) Act to protect and improve the quality of environment (air, water and soil) was passed by the Government of India in the year

(a) 1971 (b) 1974 (c) 1981 (d) 1986

58) Methanogens, growing anaerobically on cellulose material, produce

(a) methane (b) methane and carbondioxide (c) methane and hydrogen

(d) methane, carbondioxide and hydrogen

59) Biomagnification of DDT in an aquatic food chain starting from water having a conc. of 0.003 ppb may go in fish eating birds upto

(a) 2 ppm (b) 25 ppm (c) 50 ppm (d) 100 ppm

60) Photochemical smog is caused by a light mediated reaction between

(a) NO_2 and unsaturated hydrocarbons (b) NO_2 and O_3 (c) SO_2 and unburnt hydrocarbons

(d) SO_2 and O_3

61) Which element is the cause of etaietai disease?

(a) Hg (b) Pb (c) Cd (d) As

62) The intensity levels of whispering noise is

(a) 10-15 dB (b) 20-40 dB (c) 45-50 dB (d) 50-55 dB

63) SO_2 pollution is indicated by

(a) Desmodium (grasses) (b) Sphagnum (mosses) (c) Usnea (lichens) (d) Cucurbita (Climbers)

64) Which one of the following is not a renewable, exhaustible natural resource?

(a) water (b) wildlife (c) soil fertility (d) minerals (e) equatic animals

65) Which one of the following is not an air pollutant?

(a) pollen from plants (b) phosphates (c) carbon monoxide (d) hydrocarbons (e) sulphurdioxide

66) Which one of the following is the most efficient device to eliminate particulate matter from the industrial emission?

(a) cyclone separators (b) trajectory separators (c) pyrolysis (d) incineration

(e) electrostatic precipitator

67) Which of the following are true?

(a) benzene hydrochloride is a non-biodegradable pollutant

(b) anthropogenic air pollutants are natural in origin

(c) carbon monoxide is a primary air pollutant

(d) sulphur dioxide causes brown air effect during traffic congestion in cities.

(a) A and C only (b) A and B only (c) B and C only (d) B and D only (e) A and D only

68) Match the following and choose the correct combination from the options given below :

Column I (Green House Gases)	**Column II** (Conc. in 200 A. D)
CO_2	282 ppt
CH_4	316 ppt
N_2O	368 ppm
CFC + HFC	1750 ppb

(a) A-3, B-4, C-2, D-1 (b) A-4, B-3, C-2, D-1 (c) A-2, B-3, C-4, D-1 (d) A-1, B-4, C-2, D-3

(e) A-1, B-2, C-3, D-4

69) Which of the following is not a green house gas?

(a) methane (b) oxygen (c) water vapour (d) carbon monoxide

70) Which one of the following acts as secondary pollutant?

(a) Br_2 (b) Cl_2 (c) NO_2 (d) HNO_3

71) A sewage treatment process in which a part of decomposer bacteria present in the wastes is recycled into the starting of the process is called

(a) cyclic treatment (b) activated sludge treatment (c) primary treatment (d) tertiary treatment

72) If global warming continues, the organism which may face more severe threat is

(a) cow (b) banana (c) snow leopard (d) dolphin

73) An inexhaustible nonconventional universal source of energy is

(a) wind energy (b) solar energy (c) hydrothermal energy (d) tidal energy

74) Catalytic converters are fitted into automobiles to reduce emission of harmful gases. Catalytic converters change unburnt hydrocarbons into:

(a) carbon dioxide and water (b) carbon monoxide (c) methane (d) carbon dioxide and methene

75) Why is it necessary to remove sulphur from petroleum products?

(a) To reduce the emission of sulphur dioxide in exhaust fumes

(b) To increase efficiency of automobiles engines

(c) To use sulphur removed from petroleum for commercial purposes

(d) To increase the life span of engine silencers

76) Which one of the following impurities is easiest to remove from waste water?

(a) Bacteria (b) Colloids (c) Dissolved solids (d) Suspended solids

77) Which one of the following diseases is not due to contamination of water?

(a) Hepatitis-B (b) Jaundice (c) Cholera (d) Typhoid

78) Nuisance growth of aquatic plants and bloom-forming algae in natural waters is generally due to high concentration of:

(a) carbon (b) sulphur (c) calcium (d) phosphorus

79) Algal blooms impart a distinct colour to water due to:

(a) their pigments (b) excretion of coloured substances

(c) formation of coloured chemicals in water facilitated by physiological degradation of algae.

(d) absorption of light by algal cell wall.

80) Match the items column I and column II and choose the correct option:

Column I	Column II
(a) UV	(i) Biomagnification
(b) Biodegradable Organic mater	(ii) Eutrophication
(c) DDT	(iii) Snow blindness
(d) Phosphates	(iv) BOD

(a)

A	B	C	D
ii	i	iv	iii

(b)

A	B	C	D
iii	ii	iv	i

(c)

A	B	C	D
iii	iv	i	ii

(d)

A	B	C	D
iii	i	iv	i

81) In the textbook, you came across there Mile Island and Chernobyl disasters associated with accidental leakage of radioactive wastes. In India we had Bhopal gas tragedy. It is associated with which of the following?

(a) Co_2 (b) Methyl Iso-Cyanate (c) CFC's (d) Methyl Cyanate

82) Carbon dioxide is called green house gas because it is

(a) used in green-house to increase plant growth (b) transparent to heat but traps sunlight

(c) transparent to sunlight but traps heat (d) transparent to both sunlight and heat

83) Minamata disease is caused due to contamination of

(a) fish with mercury (b) mustard oil with argemone oil (c) fish with DDT (d) none of these

84) The abbreviation B.O.D stands for

(a) Biological oxygen dificit (b) Biological oxygen demand (c) Biochemical oxygen dificit

(d) Biological oxygen derivative

85) Green house effect is mainly due to

(a) SO_2 (b) CO_2 (c) CO (d) O_2

86) Maximum ozone depletion is caused by

(a) CO_2 (b) SO_2 (c) CFC (d) CH_4

87) Montreal Protocol aims at

(a) Control of CO_2 emission (b) Reduction in ozone depleting substances

(c) Biodiversity conservation (d) Control of water pollution

88) Steps taken by the Government of India to control air pollution include:

(a) use of non-polluting Compressed Natural Gas (CNG) only as fuel by all buses and trucks

(b) Compulsory mixing of 20% ethyl alcohol with petrol and 20% biodiesel with diesel.

(c) Compulsory PUC (Pollution Under Control) certification of petrol driven vehicles which tests for carbon monoxide and hydrocarbons

(d) Permission to use only pure diesel

89) DDT residues are rapidly passed through food chain causing biomagnification because DDT is

(a) water soluble (b) lipid soluble (c) moderately toxic (d) non-toxic to aquatic animals

90) Global agreement in specific control strategies to reduce the release of ozone depleting substances was adopted by:

(a) The Vienna Convention (b) Rio de Janeiro conference (c) The Montreal Protocol

(d) The Koyoto Protocol

91) the two gases making highest relative contribution to the green house gases are

(a) CO_2 and N_2O (b) CO_2 and CH_4 (c) CH_4 and N_2O (d) CFCs and N_2O

92) Select the correct statements from the following:

(a) Activated sludge-sediment in settlement tanks of sewage treatment plant is a rich source of aerobic bacteria.

(b) Biogas is produced by the activity of aerobic bacteria on animal waste

(c) Methanobacterium is an aerobic bacterium found in rumen of cattle.

(d) Biogas, commonly called gobar gas, is pure methane

93) dB is a standard abbreviation used for the quantitative expression of

(a) a certain pesticide (b) the density of bacteria in a medium (c) a particular pollutant

(d) the dominant Bacillus in a culture

94) Stirred-tank bioreactors have been designed for

(a) availability of oxygen throughout the process (b) addition of preservatives to the product

(c) purification of the product (d) ensuring anaerobic conditions in the culture vessel

95) When domestic sewage mixes with river water

(a) small animals like rats will die after drinking river water

(b) the increased microbial activity releases micronutrients such as iron

(c) the increased microbial activity uses up dissolved oxygen

(d) the river water still suitable for drinking as impurities are only about 0-1%.

96) Which of the following disease is related to cadmium pollution?

(a) Minamata (b) Pneumoconiosis (c) Anaemia (d) Itai itai

97) Lichens are described as indicator of

(a) air pollution (b) water pollution (c) soil pollution (d) agriculture productivity

98) The Air(Prevention and control of pollution) Act was amended in 1987 to include one of the following as pollutant

(a) water (b) noise (c) dust (d) none of these

99) One of the following is not a green house gas:

(a) CO_2 (b) CH_4 (c) Ethane (d) N_2O

100) During the past 150 years, the conc.of CO_2 has increased approximately from

(a) 200 ppm to 300 ppm (b) 120 ppm to 280 ppm (c) 280 ppm to 370 ppm

(d) 350 ppm to 450 ppm

101) Eutrophication is often seen in

(a) deserts (b) fresh water lakes (c) oceans (d) mountains

102) The green scum seen in the fresh water bodies is:

(a) blue green algae (b) red algae (c) green algae (d) both (a) and (c)

103) The loudness of a sound that a person can withstand without discomfort is about

(a) 150 dB. (b) 215 dB. (c) 30 dB. (d) 80 dB.

104) The major source of noise pollution world wide is due to:

(a) office equipment (b) transport system (c) sugar, textile and paper industries

(d) oil refineries and thermal power plants.

105) Match correctly the following and choose the correct option:

Environment Protection Act.	1974
Air Prevention & Control of Pollution Act	1987
Water Act	1986
Amendment of Air Act to include noise	1981

(a) i-C, ii-D, iii-A, iv-B (b) i-A, ii-C, iii-B, iv-D (c) i-D, ii-A, iii-B, iv-C (d) i-C, ii-D, iii-B, iv-A

106) Which one of the following pairs of gases are the major cause of 'green house effect'?

(a) CO_2 and O_3 (b) CO_2 and CO (c) CFCs and SO_2 (d) CO_2 and N_2O

107) Secondary sewage treatment is mainly a

(a) physical process (b) mechanical process (c) chemical process (d) biological process

108) Which one of the following is mainly produced by the activity of anaerobic bacteria on sewage?

(a) laughing gas (b) propane (c) mustard gas (d) marsh gas

109) Organisms called methanogens are most abundant in a

(a) sulphur rock (b) cattle yard (c) polluted stream (d) hot spring

110) Which one of the following statements is incorrect in case of Bhopal tragedy?

(a) methyl isocyanate gas leakage took place (b) thousands of human beings died

(c) radioactive fall out engulfed Bhopal (d) it took place in the night of December 2/3,1984.

111) 'Good ozone' is found in the

(a) mesosphere (b) troposphere (c) stratosphere (d) ionosphere

112) In an area where DDT had been used extensively, the population of birds declined significantly because

(a) birds stopped laying eggs (b) earthyworms in the area got eradicated

(c) cobras were feeling exclusively on birds (d) many of the birds laid, did not hatch

113) Which one of the following is a wrong statement?

(a) Most of the forests have been lost in tropical areas

(b) Ozone in upper part of atmosphere is harmful to animals.

(c) Greenhouse effect is a natural phenomenon.

(d) Eutrophication is a natural phenomenon in freshwater bodies.

114) Measuring Biochemical Oxygen Demand (BOD) is a method used for

(a) estimating the amount of organic matter in sewage water.

(b) working out the efficiency of oil driven automobile engines.

(c) measuring the activity of Saccharomyces cerevisae producing curd on a commercial scale.

(d) working out the efficiency of R.B.Cs. about their capacity to carry ocygen.

115) The domestic sewage in large cities

(a) has a high BOD as it contains both aerobic and anaerobic bacteria.

(b) is processed by aerobic and then anaerobic bacteria in the secondary treatment in Sewage Treatment Plants(STPs).

(c) when treated in STPs does not really require the aeration step as the sewage contains adequate oxygen.

(d) has very high amount of suspended solid and dissolved salts.

116) In gobar gas, the maximum amount is that of

(a) butane (b) methane (c) propane (d) carbon dioxide

117) The range of biomagnification of DDT in an aquatic food chain, if starting from 0.003 ppm level in water may go at eating bird level upto

(a) 0.5 ppm (b) 5.0 ppm (c) 15.0 ppm (d) 25.0 ppm

118) In domestic sewage, impurities in the form of suspended solids, colloidal materials and dissolved materials, are about

(a) 0.1% (b) 2.1% (c) 5.0% (d) 10.0%

119) Environment Protection Act, to protect and improve the quality of our environment air, water and soil was passed in the year

(a) 1971 (b) 1974 (c) 1981 (d) 1986

120) Which one of the following green house gases contributes about 20% of the global warming?

(a) Methane (b) CFCs (c) CO_2 (d) N_2O

121) If a water body is contaminated with a toxicant, its biomagnification will be more marked in

(a) water (b) planktons (c) small fishes (d) birds

122) $\log S = \log C + Z \log A$
In the given equation of species-area relationship,the value of regression coefficient for a whole continent, would be

(a) 0.1 - 0.2 (b) 0.5-0.7 (c) 0.6 - 1.2 (d) 0.3 - 0.5

123) Which of the following organisation is responsible for maintaining the Red Data Book?

(a) IDRI (b) IUCN (c) UNESCO (d) USDA

124) From his long term ecosystem experiments, David Tilman showed that

(a) decreased diversity contributed to higher productivity

(b) decreased diversity contributed to decreased productivity

(c) increased diversity contributed to increased productivity

(d) increased diversity contributed to decreased productivity

125) Which of the following is a hot-spot of biodiversity in India?

(a) Western Ghats (b) Indo-gangetic plain (c) Eastern Ghats (d) Aravalli Hills

126) Which among the following is not a method of in-situ conservation?

(a) National Park (b) Botanical garden (c) Wildlife sanctuary (d) Ramsar sites

127) The World Summit on Sustainable Development (2002) was held in

(a) Brazil (b) South Africa (c) Sweden (d) Argentina

128) The most important cause of extinction of animals and plants, especially in tropical rain forests is

(a) habitat loss (b) afforestation (c) pollution (d) soil erosion

129) The enormous number of varieties of mango in India represents

(a) genetic diversity (b) species diversity (c) ecological diversity (d) hybridisation programmes

130) Which one of the following is not a major characteristic feature of biodiversity hot spots?

(a) Large number of species (b) Abundance of endemic species (c) Large number of exotic species

(d) Destruction of habitat

131) Which of the following is not a cause for loss of biodiversity?

(a) Destruction of habitat (b) Invasion by alien species (c) Keeping animals in zoological parks

(d) Over-exploitation of natural resources

132) The extinction of passenger pigeon was due to

(a) increased number of predatory birds (b) over exploitation by humans.

(c) non-availability of the food. (d) bird flu virus infection.

133) Which of the below mentioned regions exhibit less seasonal variations?

(a) Tropics (b) Temperates (c) Alpines (d) Both (a) & (b)

134) Match the items in Column I with those in Column II.

Column I	**Column II**
A. Cryopreservation	1. Hotspot
B. Tropical forests	2. In situ conservation
C. Endemism	3. Ex situ conservation
D. Lantana	4. Coevolution
E. Plant-pollinator	5. Habitat loss
mutualists	6. Alien species
F. Wildlife sanctuary	7. Stellar's Sea cow

(a)

A	B	C	D	E	F
3	5	1	6	4	2

(b)

A	B	C	D	E	F
4	5	2	3	6	1

(c)

A	B	C	D	E	F
1	2	3	4	5	6

(d)

A	B	C	D	E	F
1	6	2	5	3	4

135) Match the items in Column I with those in Column II.

Column I	**Column II**
A. Narrowly utilitarian	1. Passenger pigeon
B. Broadly utilitarian	2. Tannins, Resins of plants
C. The Earth Summit	3. Pollination of plants
D. Over-exploitation	4. Rio de Janeiro, in 1992
	5. Ethical Arguments.

(a)

A	B	C	D
3	1	2	4

(b)

A	B	C	D
2	3	4	1

(c)

A	B	C	D
2	4	3	1

(d)

A	B	C	D
1	4	3	2

136) Genetic diversity is the measure of

(a) varieties of the species and their relative abundance present within a region

(b) variety in the genetic information contained in the organisms

(c) diversity of the genes at community and ecosystem levels (d) All of the above

137) The term 'alpha diversity' refers to

(a) species diversity (b) genetic diversity (c) community diversity (d) diversity among the plants

138) The greatest threat to genetic diversity in agriculture crop is

(a) extensive use of insecticides and pesticides (b) extensive mixed cropping

(c) introduction of high yield varieties (d) extensive use of fertilisers

139) The IUCN Red Data List (2004) in the last 500 years documents the extinction of nearly 784 species including

(a) 330 invertebrates (b) 338 invertebrates (c) 359 invertebrates (d) 362 invertebrates

140) The Western Ghats have a greater amphibians diversity than the Eastern Ghats. It is an example of

(a) species diversity (b) genetic diversity (c) ecological (d) None of these

141) Sacred groves in India are related with

(a) cultural tradition (b) it is the place where threatened species are protected

(c) it is the place where only artificial animal breeding is allowed

(d) forest patches around the places of worship

142) Ecological diversity exists at community level and is of three types. Select the correctly matched option for ecological diversity.

(a) Alpha diversity-diversity between communities

(b) Beta diversity - diversity of organisms within same community

(c) Gamma diversity diversity of organisms over the entire geographical area (d) None of the above

143) Match the Column I with Column II and choose the correct option from codes given below.

Column I	**Column II**
A. Rivet popper hypothesis	1. Paul Ehrlich
B. Communities with more species	2. Edward Wilson
C. Communities with less species	3. Less stable
D. Term biodiversity	4, more stable

(a)

A	B	C	D
2	4	3	1

(b)

A	B	C	D
1	4	3	2

(c)

A	B	C	D
1	3	4	2

(d)

A	B	C	D
1	4	2	3

144) Match the Column I with Column II and choose the correct option from codes given below.

Column I	**Column II**
A. Hotspots	1. Areas maintained by government for the betterment of wildlife.
B. Protected areas	2. Areas of high endemism and high level of species richness.
C. National parks	3. Biogrographical areas where biological diversity along with natural and cultural resources is protected, maintained and managed.
D. Biosphere reserves	4. Multipurpose protected areas, which are meant for preserving genetic diversity in the ecosystem of various natural biomass and unique biological communities.

(a)

A	B	C	D
1	2	3	4

(b)

A	B	C	D
3	1	2	4

(c)

A	B	C	D
2	3	1	4

(d)

A	B	C	D
4	2	3	1

145) Which of the following is an examplc of ex-situ conservation?

(a) Sacred groves (b) National park (c) Biosphers reserve (d) Seed bank

146) Which of the following is not an invasive alien species in the indian context?

(a) Lantana (b) Cynodon (c) Parthenium (d) Eichhornia

147) Match the Column I with Column II and choose the correct option from codes given below.

Column I	**Column II**
A. Dodo	1. Rauwolfia
B. Reserpine	2. Mauritius
C. Nile perch in lake Victoria	3. Habitat destruction
D. Main cause for biodiversity loss	4. Alien species

(a)

A	B	C	D
4	2	1	3

(b)

A	B	C	D
2	1	4	3

(c)

A	B	C	D
2	4	3	1

(d)

A	B	C	D
3	2	1	4

148) The one-horned rhinoceros shown below is specific to which of the following sanctuary?

(a) Bhitarkanika (b) Bandipur (c) Kaziranga (d) Corbett park

149) Which of the following statements describe natural extinction?

I. Extinctions abetted by human activities.

II. Slow replacement of existing species,

III. Also known as background extinction.

IV. A small population is most likely to be extinct.

(a) I and II (b) I, II and III (c) II, III and IV (d) All of these

150) The organisation which publishes the Red List of species is

(a) ICFRE (b) IUCN (c) UNEP (d) WWF

151) Dodo passenger pigeon and Steller's sea cow became extinct in the last 500 years due to

(a) habitat destruction (b) over-exploitation (c) bird flu virus infection (d) pollution

152) The historic convention on biological diversity held in Rio de Janeiro in 1992 is known as

(a) CITES convention (b) The Earth summit (c) G-16 summit (d) MAB progamme

153) World sumuit on sustainable development was held in

(a) USA (b) South Africa (c) South Korea (d) UK

Fill up / 1 Marks 10 x 1 = 10

154) India now has _____ wildlife sanctuaries.

155) 70 per cent of the animal species recorded are _____.

156) _____ places the global species biodiversity at about 7 million.

157) The maximum diversity of amphibians in India is observed in _____.

158) The recent introduction of Clarias gariepinus is posing threat to our indigenous _____ in our rivers.

159) _____ introduced into Lake Victoria caused extinction of 200 species of cichlid fishes.

160) Thylacine from _____ and quagga from Africa are examples of recent extinctions.

161) _____ popularised the term Biodiversity.

162) India's share of global biodiversity is about _____ per cent.

163) _____ the last refuges of a number of threatened species of plants, are found in Aravalli Hills of Rajasthan and Jaintia Hills of Meghalaya.

True or False 5 x 1 = 5

164) Parthenium is an endemic species of our country.

(a) True (b) False

165) Stellar's sea cow is an extinct animal.

(a) True (b) False

166) India is one of the mega diversity countries of the world.

(a) True (b) False

167) 20 per cent of the total oxygen in the earth's atmosphere is produced by temperate forests like Amazon forest.

(a) True (b) False

168) Endemic species are those which are distributed in almost all parts on the globe.

(a) True (b) False

1 Marks 143 x 1 = 143

169) Name the type of biodiversity represented by the following:
(a) 50,000 different strains of rice in India.
(b) Estuaries and alpine meadows in India

170) India has more than 50,000 starins of rice. Mention the level of biodiversity it reprasents.

171) Name the type of biodiversity represented by the following:
(a) 1000 varieties of mango in India.
(b) variations in terms of potency and concentration of reserpine in Rauwolfia vomitoria growing in different regions of himalayas.

172) Why is india said to have grater ecosystem diversity than Norway?

173) Write the importance of cryopreservation in conservation of biodiversity.

174) The Amazon rain forest is referred to as 'the lungs of the planet'. Mention any one human activity which causes loss of biodiversity in this region.

175) About 200 species of Cichlid fish became extinct when a particular fish was introduced in lake Victoria of Africa Name the invasive fish.

176) What accounts for greater ecological diversity in India?

177) According to David Tilman, grater the diversity, greater is the primary productivity. Can you think of a very low diversity man-made ecosystem that has high productivity?

178) Why is genetic variation important in the plant Rauwolfia vomitoria?

179) What is the difference between endemic and exotic species?

180) What is expandend form of IUCN?

181) Who coined the term biodiversity?

182) Write the scientific name of the plant that yields reserpine.

183) Which region in india has the maximum number of amphibian species?

184) What is the global species diversity according to Robert May?

185) Name the indian hot spots that extend into other countries.

186) Why is it said that ecosystems with diversity can withstand environmental changes better than others?

187) What is common about Eichhornia, Lantana and parthenium with reference to threat to our biodiversity?

188) What is the main reason for the extinction of passenger pigeon?

189) How much area of earth's land surface is covered by hot spots?

190) How many biosphere reserves are three in india?

191) How many potential gardens are there in india?

192) Name any two conventional methods of ex situ conservation.

193) What are seed banks?

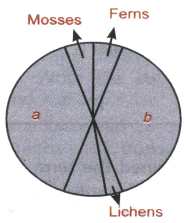
194) How is the historic convention on Biologicalk diversity held in Rio de Janeiro known as?

195) When was Ramsar convention on Biological diversity held in Rio de Janeiro known as?

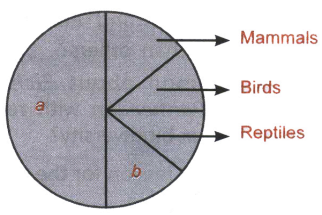
196) What is the mission of Ramsae Convention?

197) Name the country that has the
(a) highest number of Ramsar sites
(b) greatest area of listed wetlands in the world, as on November 2013.

198) What is the number of Ramsar sites in the world as on November 2013?

199) 

Name the unlabelled areas 'a' and 'b' of the pie chart representing the biodiversity of plants showing their proportionate number of species of major taxa.

200) 

Name the unlabelled areas 'a' and 'b' of the pie chart representing biodiversity of vertebrates showing the proportionate number of species of major taxa.

201) What is Red Data Book?

202) What does the term frugivorous mean?

203) Define (i) Bioprospecting (ii) Endemism.

204) What is advantage of genetically uniform crop plants?

205) What is disadvantage of genetically uniform crop plants?

206) At present what is the major challenge to science?

207) What is the total number of species discover and described present on earth? What is the predicted number?

208) What is advantage to a species having more genetic diversity?

209) What are the consequences of lower genetic diversity?

210) Coin a term for following:
(i) Within community diversity
(ii) Between community diversity.

211) Name the two most bio-diversity rich zones and the geographical areas they occupy in India.

212) From high to low altitudes, broadly speaking the biological diversity…

213) What is the approximate drop out of temperature with a corresponding increase/decrease of about 1000 m in altitude?

214) Name an exotic predatory fish which damaged the native cichlid fish to lake Victoria.

215) How many plant species are used as food?

216) How many plant species are source of medicines?

217) How many species are being lost from tropical forests?

218) List two use of Red list.

219) Expand WWF.

220) Name the two basic strategies of conservation of biodiversity.

221) Name a sacred lake of Sikkim.

222) What is in vitro conservation?

223) How many botanical gardens are presented in world?

224) What are hot spots?

225) Expand WPSI.

226) What are the 5 main types of pollution?

227) Name the major surface water pollutant from farm run-off and bathroom water.

228) What photochemical oxidants pollute air?

229) What is PAN?

230) What are aerosoles?

231) Which pollutants are contributed by aeroplanes?

232) How can SO_2 pollution of air be checked?

233) What is BOD?

234) Give the source of pathogens into water

235) Name the types of pollutants according to their natural disposal.

236) Mention the kinds of pollutants regarding the form in which they persist after release into the environment.

237) What is eutrophication?

238) What is nuclear fallout?

239) Which is a greater air pollutant, man or nature?

240) Can useful materials cause pollution? Cite on example

241) Does nature produce pollutants? Give two examples

242) What are biodegradable pollutants? Give one example

243) Name three nondegradable pollutants.

244) What are secondary pollutants? Mention 2 examples.

245) How much pollution of air is due to human activities?

246) How does CO cause giddiness and exhaustion?

247) Why does NO_2 irritate eyes and nose?

248) Which is the sure indicator of air pollution?

249) At what intervals jhuming can be harmful to forests?

250) What do you mean by biological magnification?

251) Define noise.

252) What are point sources of pollution?

253) What is ozone hole?

254) Which one of the following is not a green house gas? CO_2, CH_4, O_2, CFC_s.

255) What do you mean by e-waste?

256) Expand the term CNG.

257) Name the city where whole public transport system (buses) run on CNG

258) Between amphibians and birds, which will be able to cope with global warming? Give reason.

259) In which year the AIR (Prevention and control of Pollution) Act amended to include noise as air pollution?

260) It is a common practice to undertake desilting of the overhead water tanks. What is the possible source of silt that gets deposited in water tanks?

261) Name one device for controlling air pollution

262) List two advantages of the use of unleaded petrol in automobiles as fuel.

263) Name of greenhouse gases that contribute to global warming.

264) One of the control measures employed by the Government is application/enforcement of Euro II norms > Whate does it stipulate?

265) Why is Eichhornia crassipes nicknamed as 'Terror of Bengal'?

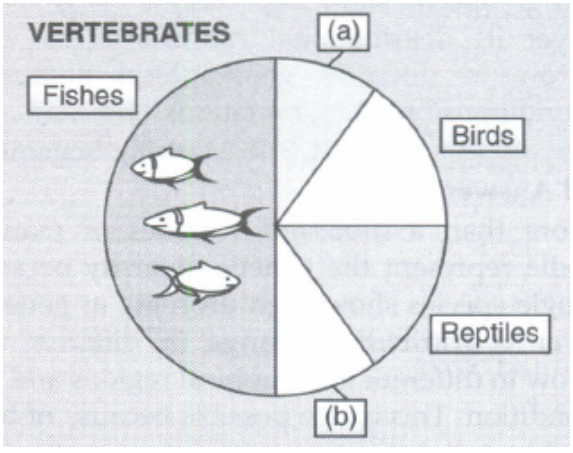
266) In global warming real, only a theory or speculation?

267) Will climate change bring benefits to some areas?

268) Where is good ozone present? Why is it called so?

269) Write the level of biodiversity represented by mangrove. Give another example falling in the same level.

270) Identify 'a' and 'b' in the figure given below representing proportionate number of major vertebrate taxa.



271) Why is tropical environment able to support greater species diversity?

272) Eichhornia crassipes is an alien hydrophyte introduced in India. Mention the problems posed by this plant.

273) Why have Western Ghats in India been declared as biological hot-spots?

274) Give an example of a plant which came into India as a contaminant and is a cause of pollen allergy.

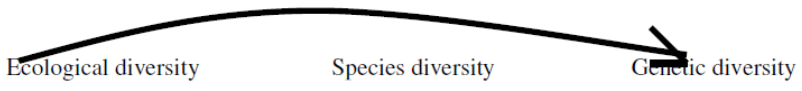
275) India is one of the twelve mega biodiversity countries Countries of the world. what are the various levels of biodiversity observed in India?

276) India has only 2.4% of the land area of the world but it has 8.1% of the species diversity. what are the favorable environmental condition that has favoured speciation in india?

277) What is the scientific term for measurement of species diversity if (i) number of species per unit area are measured (ii) relative abundance with which each species is represented in an area is measured.

278) 20 parrots, 50 sparrows and 150 crows are found in one part of seven senses garden which has large number of trees. Which parameter- species richness or species evenness can be easily assessed from this information?

279)



What conclusion can be drawn from the above mentioned depiction?

280) Species extinction is accelerating at a fast speed mainly due to human activities. Group such activities under four major heads and explain.

281) Why is the number of prokaryotic species not yet estimated till now?

282) Who are the Ecologists associated with the following works:
(i) The sociologist who popularized the term Biodiversity
(ii) Developed the River Popper hypothesis.
(iii) Gave the estimate of global species diversity
(iv) Performed experiments to show that increased diversity contributed to higher productivity

283) Human activities had lead to progression of Sixth extinction at a faster rate than the previous five episodes of extinction. How does the sixth extinction differ from the previous episodes of extinction?

284) If we apply May's globabeenl estimates of species in indian context, how many species of animal gave recorded?

285) Write the expanded form of IUCN.

286) What do you mean by the term 'alien species' ?

287) Give the names of some invasive species in India.

288) Give the name of a bird, which recently became extinct.

289) Apart from conserving individual plants and animals, what else needs to be conserved?

290) Which rainforest is called as 'Lungs of planet'?

291) Give the names of biodiversity rich zones in India.

292) Why Western Ghats in India have been declared as biological hotspots?

293) What are protected areas?

294) How many biosphere reserves have been established in India?

295) Name the historic convention on biological diversity held at Rio in 1992.

296) Why is India said to have greater ecosystem diversity than Norway?

297) Define species diversity.

298) Which region of the earth has the greatest biodiversity on earth?

299) What is the general range of the value of slope of the line of regression for any taxa in any region?

300) Name one animal species that has become extinct recently each in (a) Australia and (b) Mauritius, respectively.

301) What per cent of the earth's surface was covered by tropical rain forests at
(a) the beginning of 20th century and
(b) now, respectively?

302) What is meant by threatened species?

303) What is the total number of hot spots in the world?
How many of them are there in India?

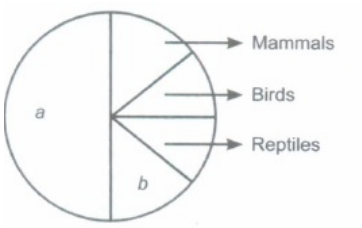
304) When was Ramsar Convention developed and adopted and when did it come into force?

305) What is the mission of Ramsar Convention?

306) How many national parks and wildlife sanctuaries are there in India?

307) Mention the two important measures of species diversity in a region.

308) Write the scientific name of the plant that produces reserpine.

309) 

Name the un labelled areas 'a' and 'b' of the pie chart representing biodiversity of vertebrates showing the proportionate number of species of major taxa.

310) What per cent of all bird species and mammal species, respectively face the threat of extinction?

311) Mention any two intangible benefits that nature provides to which no price tag can be attached.

Find the odd one 4 x 1 = 4

312) Parthenium, Mangifera, Lantana Eichhornia

313) Bali, Javan, Caspian, Dodo

314) Seed banks, Tissue culture, Sacred groves, Cryopreservation.

315) Aravalli Hills, Chanda and Bastar, Khasi Hills, Zoological park

Assertion and reason 27 x 1 = 27

316) **Assertion:** The rate of extinction of organisms have increased in recent years.
Reason: Human activities like deforestation, industrialisation, etc., have destroyed the natural habitat of plants and animals.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

317) **Assertion:** Species diversity decreases as we ascend towards high mountains.
Reason: Due to drop in temperature, no seasonal variability occurs in high mountains.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

318) **Assertion:** Communities with more species tend to be more stable than those with less species.
Reason: Communities with more species is not able to resist occasional disturbances.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

319) **Assertion:** Dodo, Passenger pigeon, Steller's'sea cow have become extinct due to over exploitation.
Reason: Excessive exploitation of a species, whether animal or plants reduces size of its population so that it becomes vulnerable to extinction.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

320) **Assertion:** Maximum biodiversity occurs in temperate areas.

Reason: Temperate areas have favourable conditions for speciation and for supporting variety and number of organisms.

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

321) **Assertion:** The introduction of Nile perch in lake Victoria caused cichlids to become extinct.

Reason: Nile perch is an indigenous species of East Africa.

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

322) **Assertion:** Coral reefs are found in temperate forests.

Reason: Minimum diversity of biota are found in the reefs

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

323) **Assertion:** Many endemic species are seen to flourish in sacred forests.

Reason: Sacred forests are undisturbed forest patches and biodiversity rich areas.

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

324) **Assertion:** Buffer zone surrounds the core area and limited human activities like resource use strategies, research and education are allowed here.

Reason: There is no biotic interference except in buffer zone.

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

325) **Assertion:** Alpha diversity refers to species diversity present in a given community or habitat.

Reason: Alpha diversity is expressed by species richness and species evenness in a community or habitat.

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

326) **Assertion:** Biodiversity loss is now one of the world's most pressing crisis.

Reason: Lower diversity in a species leads to non-uniformity.

Codes:

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

327) **Assertion:** Alpha diversity is said to be higher if the dissimilarity between communities is higher.
Reason: Alpha diversity is a measure of diversity between the communities.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

328) **Assertion:** Indiscriminate exploitation of economically important wild plants may lead to their extinction.
Reason: Non-conservation of their germplasm is responsible for this.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

329) **Assertion:** There are 36 biodiversity hotspots in the world.
Reason : High level of species richness is a criteria for selection of a biodiversity hotspot.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

330) **Assertion:** Non-native or exotic species are often introduced in a region for their economic uses.
Reason: Exotic species are considered to be a major cause of extinction of indigenous species.
Codes:
(a) Both assertion and reason are true and reason is the correct explanation of assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Both assertion and reason are false.

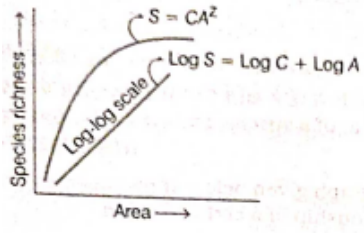
331) Assertion (A) : Diversity observed in the entire geographical area is known as gamma diversity.
Reason (R) : Biodiversity decreases from high altitude to low altitude.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

332) Assertion (A) : Species with low genetic variability are usually at a great risk of extinction.
Reason (R) : Low genetic variability increases vulnerability to diseases, environmental changes and predators
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

333) Assertion (A) : Tropical rainforests are disappearing fast from developing countries such as India
Reason (R) : No value is attached to these forest because are poor in diversity.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

334) Assertion (A) : Tropical latitudes have greater biological diversity than temperate latitudes.
Reason (R) : Tropical regions remain relatively undisturbed for millions of years
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

335) Given below is the graph showing species-area relationship. Alexander van Humbolt observe the relationship between species richness and area for a wide variety of taxa, turns out to be hyperbola. Observe the graph and answer the question

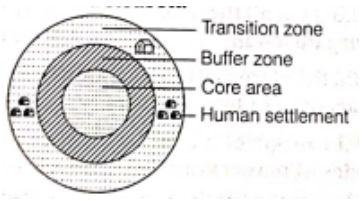


Assertion (A) : If the species-area relationhips are analysed among very large areas like the entire continents, the value of 2, i.e. slope of line lies in the range of 0.1 to 0.2.
Reason (R) : Larger is the explored area more is the steepness of slope of line.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

336) Assertion (A) : Communities that comprise of more species tend to be more stable.
Reason (R) : A higher number of species results in less year-to-year variation in total biomass.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

337) Assertion (A) : A sanctuary is formed for the conservation of animals only.
Reason (R) : Restricted human activities are allowed in sanctuaries.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

338) The figure given below is showing the zonation in a terrestrial biosphere reserve. It consists of core buffer and transition zones. Study the figure and comment upon the appropriatness of Assertion and Reason.



Assertion (A) : Biosphere reserve is a specified area in which multiple use of land is permitted by dividing it into zones.
Reason (R) : These are the spaces where sustainable economic practices are developed.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

339) Assertion (A) : The great Indian bustard is a critically endangered bird found in India.
Reason (R) : It is vulnerable to extinction the future.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

340) Assertion (A) : The presently occurring species extinction is different from the earlier mass extinction.
Reason (R) : Present species extinction is due to natural causes, whereas the earlier extinction was due to the man-made causes.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

341) Assertion (A) : In case, a species becomes extinct, the plant and animal species associated within an obligatory way also become extinct.
Reason (R) : When a host fish species becomes extinct, its unique assemblage of parasites also become extinct.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

342) Assertion (A) : Currently the sixth extinction is in progress.
Reason (R) : The current species extinction rates are estimated to be 100 to 1000 times faster than in the pre human times and our activities are responsible for the faster rates.
(a) If both A and R are true and R is the correct explanation of the A
(b) If both A and R are true, but R is not the correct explanation of the A
(c) If A is true, but R is false
(d) If A is false, but R is true

2 Marks 171 x 2 = 342

343) Name the three important components of biodiversity.

344) What is the significance of the slope of regression in a species-area relationship?

345) What are the major causes of species losses in a geographical region?

346) What are sacred groves? What is their role conservation?

347) Among the ecosystem services are control of floods and soil erosion. How is this achieved by the biotic components of the ecosystem?

348) The species diversity of plants (22 per cent) is much less than that of animals (72 per cent). What could be the explanations to how animals achieved greater diversification?

349) Can you think of a situation where we deliberately want to make a species extinct? How would you justify it?

350) Is it true that there is more solar energy available in the tropics? Explain briefly.

351) 'Stability of a community depends on its species riches'. Write how David Tilman showed this experimentally.

352) What is meant by 'alien species' invasion? Name one plant and one animal alien species that are a threat to our Indian native species.

353) With the help of an example, explain how alien speciesinvasion causes biodiveristy loss.

354) Alien species are a threat to native species. Justify taking examples of an animal and a plant alien species.

355) Sometimes alien species affect the indigenous organisms leading to their extinction. Substantiate this statement with the help of any two examples

356) Why are certain regions of the earth called hot-spots? Name any two hot-spots in India.

357) Why have certain regions been declared as biodiversity ' hot spots' by environmentalist of the wpold? Name any two hot spot regions of india.

358) Why should biodiversity be conserved? List any two eithical arguments in its support.

359) Justify with the help of an example where a deliberate attempt by humans has led to the extinction of a particular species.

360) State the use of biodiversity in modern agriculture.

361) Differentiate between in situ and and ex situ approaches of conservation of biodiversity?

362) Explain taking one example, the effect of co-extinction on biodiversity.

363) How does over-exploitation of beneficial species affect biodiversity?

364) Biodiversity must be conserved as it plays an important role in many ecosystem services that nature provides.Explain any two services of the ecosystem.

365) Name the sociobiologist who popularised the term biodiversity.Identify the levels of biodiversity in india represented by
(i) Diversity amoung amphibians in ERastern and Western Ghats.
(ii) 50000 strains of rice in india
(iii) Presence of deserts, mangroves and coral reefs in India.

366) What does the term genetic diversity refer to? What is the dignificance of large genetic diversity in a population?

367) What are endangered species? Give an example of an endangered plant animal species, each

368) Name the two measures of species diversity

369) Biodiversity decreased as one moves from eqyator towards poles.Justify with an example

370) Name any four recent extinctions of animals.

371) Enumerate the aesthetic benefits of biodiversity.

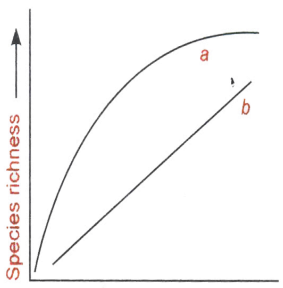
372) What is mass of extinction? Give an example. How many species of the Red List face extinction?

373) Name any four regions in India, where sacred groves are found.

374) When and where was Earth Summit held? What was its objective?

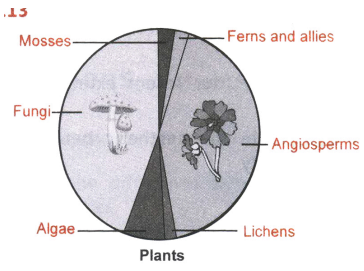
375) What is Ramsar convention? How was it called previously?

376)



The above graph shows Species-Area relationship. Write the equation of the curve 'a' and explain.

377)



Observe the global biodiversity distribution of major plant taxa in the above diagram and answer the questions that follow.
(a) Which group of plants are the most endangered?
(b) Why are mosses/ferns so few? Give reason.
(c) How do fungi that are heterotrophs sustain themselves as a large population?
(d) Which group of plants is most advanced and which one is most primitive?

378) How is presently occurring species extinction differ from the earlier mass extinctions?

379) Of the major cause for the loss of biodiversity (Alien species invasion habitat loss and fragmentation, over-exploitation and co-extinction) which according to you is the major cause for the loss of biodiversity? Give reason in support.

380) Discuss one example, based on your day-to-day observations, showing how loss of one species may lead to the extinction of another.

381) A species area curve is drawn by plotting the number of species against the area. How is it that when a very large area is considered the slpoe is steeper than for smaller areas?

382) It is possible that productivity and diversity of natural community remain constant over a time peroid of, say one hundred years?

383) There is greater biodiversity in tropical/subtropical regions than in temperate region.Explain.

384) Why are the conventional methods not suitable for the assessment of biodiversity of bacteria?

385) What criteria should one use in categorising a spacies as threatened?

386) What could be the possible explanation for greater vulnerability of amphibians to extinction as compared to other animal groups?

387) How do scientists explain the total number of species on earth?

388) List any two major causes other than anthropogenic causes of the loss of biodiversity.

389) What are sacred groves? Discuss their role in biodiversity conservation.

390) Suggest a place, where one can go to study coral reefs, mangrove vegetation and estuaries.

391) What is co-extinction? Explain with a suitable example?

392) What is biodiversity? Why has it become important recently?

393) Define biodiversity. What will be consequences of loss of biodiversity?

394) What are the causes of loss of biodiversity?

395) How many genes are present in mycoplasma, E. coli, Drosophila, Oryza sativa and homo sapiens?

396) Explain what is mean by species diversity?

397) What is genetic diversity? Explain.

398) What is the basis speciation?

399) Write a note on ecological diversity.

400) Describe ecological role of biodiversity.

401) Write a short note on three perspectives of community and ecosystem level of diversity.

402) List the Natural world Heritage sites of India.

403) Decipt with the help of sample sketches the representation of global biodiversity of major taxa of plants, invertebrates and vertebrates.

404) Explain patterns of biodiversity.

405) Explain biodiversity as source of food and improved varieties.

406) List a few drugs and medicines obtained from biodiversity.

407) Briefly explain role of biodiversity in Industry.

408) What kinds of threats to the biodiversity may lead to its loss?

409) Give a brief account of loss of biodiversity at global level.

410) Broadly classify the extinction processes.

411) What are three major threat categories of species? Give example.

412) How is diversity at all levels generally conserved?

413) Write an explanation note on the efforts for conservation of biodiversity in India.

414) List the benefits of protected area or conservation of biodiversity.

415) What is biosphere reserve? Show the zonation of biosphere reserves.

416) List the biosphere reserves of India.

417) Write a critical note on the following:
(i) Hotspots of biodiversity.
(ii) Ex-situ conservation.
(iii) India's effort in biodiversity

418) What is EI Nino effect? Explain how it accounts for biodiversity loss.

419) What are Ramsar sites? What is Ramsar mission? Explain 'wise use concept"?

420) Make a list of Ramsar Sites in India.

421) Mention the kind of biodiversity of more than a thousand variety of mangoes in India represent. How is it possible.

422) How did pollution of environment start?

423) What is synergism?

424) Differentiate between contamination and pollution.

425) What are quantitative pollutants?

426) Name a few pollutants added to air by nature.

427) Which is the major air pollutant? Give its source.

428) Give the ill effect of benzpyrene. Mention its sources also.

429) What is meant by biochemical oxygen demand (BOD)?

430) What is senescence of a water body?

431) Explain the phenomenon of biological magnification

432) What are radioactive elements. Give a few examples.

433) How do radiations affect the cells?

434) What is pyrolysis?

435) How does nature depollutes the air?

436) What is nuclear fall out? How does it reach living organisms?

437) Name the 5 main types of pollutants.

438) List the gaseous pollutants of atmosphere.

439) Name 3 types of particulate pollutants of air.

440) All the 3 kinds of water are polluted, Name them

441) What are index species?

442) What is thermal pollution?

443) What is minimata disease?

444) Which plant can absorb heavy metals? How is this useful?

445) What are the 2 types of source of water pollution?

446) What temperature range fishes can tolerate?

447) Sound of what intensity is harmful for ears?

448) Give advantages of CNG over petrol or diesel.

449) DDT content in the lake water that supplies drinking water to nearby villages, is found to be 0-003 ppm. The king fishers of that area are reported to have 2ppm of DDT. Why has the conc. increased in these birds? What harm will this cause to the bird population? Name the phenomenon.

450) Mention the major cause of air pollution in metro cities. Write any three ways by which it can be reduced.

451) What is hybrid vehicle technology?Explain its advantages with a suitable example?

452) Is it true that if the DO level drops to zero, the water will become septic? Give an example which could lower the DO content of the water body.

453) It is a common practice to plant trees and shrubs near the boundary walls of buildings. What purpose do they serve?

454) Explain accelerated eutrophication. mention any two consequences of this phenomenon

455) A crane had DDT level as 5 ppm in its body. What would happen to the population of such birds? explain giving reasons.

456) During the secondary treatment of the primary effluent how does the significant decreases in BOD occur?

457) Explain the cause of algal bloom in a water body. How does it affect an ecosystem?

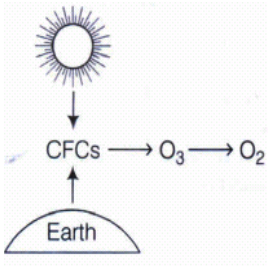
458) Match the items given in column I with items (one or more) given in column II.

Column I	**Column II**
(i) Biodegradable pollutants	(a) D,D.T.
(ii) Non-biodegradble pollutants	(b) PAN
(iii) Secondary pollutants	(c) Low temperature
(iv) Photochemical smog	(d) Organic wastes (Sewage)
(v) Classical smog	(e) High temperature
	(f) Ozon
	(g) Cadmium

459) Match the Column I with Column II

Column I	**Column II**
1. Disel automobile	(i) Nitrogen
2. Methemoglobinaemia	(ii) SO_2/SO_3
3. Ozone hole	(iii) Suspended particulate matter
	(iv) Excess fluoride in water
	(v) Excess nitrate in water
	(vi) CFC_s
	(vii) 100 km wide hole
	(viii) Can be fatal to infant

460)



(a) Expand CFC.

(b) How does it reduces ozone to oxygen?

461) Write, what was the percentage of forest cover of India at the beginning and at the end of twentieth century.How different it is from the one recommended by National Forest Policy?

462) Write what was the percentage of forest cover of India at the beginning and at the end of the twentieth century. How different is it from the one recommended by the National Forest Policy of our country?

463) Where would you expect more species diversity in tropics or in polar regions? Give reasons in support of your answer.

464) List any two causes of biodiversity loss and explain anyone of them.

465) In the biosphere immense biological diversity exists at all levels of biological organisation. Explain any two levels of biodiversity.

466) List the features that make a stable biological community.

467) Giving two reasons explain why there is more species biodiversity in tropical latitudes than in temperate ones.

468) Why certain regions have been declared as biodiversity 'hot spots' by environmentalists of the world? Name any two (hotspot) regions of India.

469) Why are sacred groves highly protected?

470) Why are the plants that inhabit a desert are not found in a mangrove? Give reason?

471) Plants that inhabit a rain-forest are not found in a wetland. Explain.

472) List any four techniques where the principle of ex-situ conservation of biodiversity has been employed.

473) Differentiate between in-situ and ex-situ approaches of conservation of biodiversity.

474) The tropics (between 23.5 ^{0} N to 23.5^{0} ^{S}) harbours more species than temperate and polar regions. Explain the probable reasons for difference in biodiversity between tropical and temperate regions.

475) Biodiversity decreases as one move from equator towards pole. Justify this statement with a suitable example.

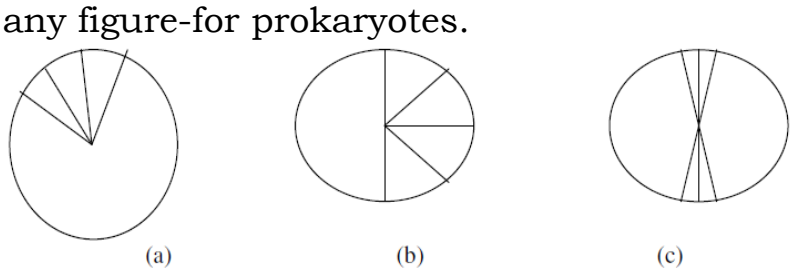
476) Amazonian rain forests in South America have the greatest biodiversity on earth, what can be the reason for it?

477) On a log scale, species area relationship becomes linear and can be represented by equation logS = logC + z logA. What is represented by S, z,a & c in this equation. What is the average value of Z-line irrespective of the taxonomic group or the region? The z value for frugivorous birds and mammals in the tropical forests of different continents is found to be 1.15. Why is it so?

478) Ecologists believe that communities with more species tend to be more stable than those with less species. What attributes are taken into account while defining a stable community. Mention the observation of David Tilman ecological experiments using outdoor plots.

479) Name a scientist who proposed that species richness increases with increased explored area but only up to a limit. What is the shape of a graph if species richness is plotted against area for a wide variety of taxa.

480) What is depicted by the following representation of species diversity? Why these estimates do not give any figure-for prokaryotes.



481) The invasion of alien species is responsible for extinction of the indigenous species. Give 2 examples to support this statement.

482) If a spices of fish becomes extinct, all those parasites, specific to that fish also face extinction. Which of the major cause describe as the evil Quintet's is being accounted?

483) Categorize the followings statement into narrowly utilitarian, broadly utilitarian and ethical reason:-
i) Every species in biodiversity has an intrinsic value even if it not of value to us.
ii) Human beings device a number of economic benefits like food, fiber etc from biodiversity.
iii) Biodiversity provides ecosystem services which can not be given price tag. Justify your categorization also.

484) Which strategy of Bioconversation is being taken care of if the endangered species are removed from the unsafe or threatened habitat and placed under the care of humans? How is this strategy different from the other strategy of bio-conservation?

485) Categorize the following into in-situ and ex-situ approaches of biodiversity conservation.
i) Botanical gardens
ii) Wild life sanctuaries
iii) Gene bank
iv) Biosphere reserves
v) Sacred forests/lakes
vi) Pollen banks
vii) Tissue culture
viii) Cryo-preservation

486) Western Ghats & Srilanka, Indo-Burma and Himalaya are three hot spots of India. Why are these places named so? What are the criteria of determining hot spots?

487) Conservation of bio-diversity is a collective responsibility of all nations. Mention the steps taken by various countries in this direction.

488) Loss of key species that drive major ecosystem functions is the most serious threat to species diversity found in any ecosystem. How is it explained by Paul Ehalich through the "rivet popper hypothesis" analogy.

489) Alien species are threat to native species. Justify

490) You find that a lake in your neighboring area has been covered by Water hyacinth. You have contacted your friends to remove this weed. Nobody agrees to support you. How will you explain the necessity of this?

491) A well- known personality killed a black buck during hunting in sacred groves of Aravali Hills in Rajasthan. Local people caught him and lodged a case in court against him. He argued that court that killing a human being is a crime but killing an animal is not crime. What is your opinion?

492) Students were taken for excursion to Arabari Joint forestry Project in Midnapore district, West Bengal .The various observations done by the students were as follows
(i) Village people using forest products without causing harm to forest.
(ii) Village people helping in plantation in deforestation areas.
(iii) A core area under the forest is not disturbed by anybody. State the various inference which the students draw from the observations

493) A sudden decline in fruits and seeds were seen in an area where regular heavy use of insecticides was done for the past few years. Give reasons for such an outcome.

494) A debate was conducted on school on the need to conserve biodiversity. One student felt. that there are so many species on the earth, why will it matter if we lose a few. Do you feel the same. Justify your answer.

495) Study-1. A forest that is rich in biodiversity seems to decline in animal population. The government declared it as a biodiversity hotspot and the forest regained its species richness in few years. Study-2. A lake that is rich in marine fishes seems to decline in its species population due to overexploitation. A wise man in the area decided to worship the lake. The species population f the lake again became normal.
(a) Which values are been promoted in the above studies.
(b) Suggest some ways by which you can contribute to this concern.
(c) What would be the effect if the forest was not declared hotspot?

496) List four causes of biodiversity loss.

497) With an example explain lattitude gradient, as a pattern of biodiversity.

498) What do you mean by fragmented habitat? Give one example.

499) Suggest two practices giving one example of each, that help to protect rare or threatened species.

500) Mention the three zones of a biosphere reserve.

501) Write in brief about Ramsar convention.

502) Explain any two most important levels of biological organisation showing biodiversity with the help of an example each.

503) Identify the areas labelled (i), (ii), (iii) and (iv) in the pie chart given below representing the biodiversity of plants showing their proportionate number of species of major taxa.

504) Alien species invasion is one of the causes of biodiversity loss. Explain with the help of an example.

505) With the help of an example, explain how alien species invasion causes biodiveristy loss.

506) What is the contribution of biodiversity to medical field?

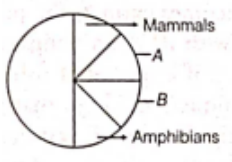
507) Hot-spots occupy less than 2% of earth's land surface. Yet, they are given priority for conservation of biodiversity. Give two reasons for this.

508) State how ex situ conservation helps in protecting biodiversity.

509) Suggest four advanced ex situ methods to conserve the threatened biodiversity.

510) What is mass extinction? Give an example.

511) Name the unlabelled areas 'a' and 'b' of the pie chart representing biodiversity of vertebrates showing the proportionate number of species of major taxa.



512) Name the sociobiologist who popularised the term biodiversity.

513) Western Ghats have a greater amphibian diversity than the Eastern Ghats. What can be inferred from this statement?

3 Marks 95 x 3 = 285

514) How do ecologists estimate the total number of species present in the world?

515) Give three hypotheses for explaining why tropics show greatest levels of species richness.

516) How is biodiversity important for ecosystem functioning?

517) The sacred groves of Aravalli hills and ooty botanical garden,both aim at biodiversity conservation.How do they differ in their approaches? Explain.

518) Alien species are highly invasive and are a threat to indigenous species. Substantiate this statement with any three examples.

519) List the reasons that account for the greater biological diversity in tropics.

520) Explain giving one example,how co-extinction is one of the causes of loss of biodiversity.List the three other causes also (without description).

521) Explain 'rivet popper' hypothesis. Name the ecologist who proposed it.

522) Give three reasons as to why the prokaryotes are not given any figures for their diversity by the ecologist.

523) Write an account on biodiversity in India.

524) Describe with an example the latitudinal gradients of biodiversity

525) Mention the three attributes that a stable community has.

526) When and where was the world summit on sustainable development held? How many countries signed the convention? What was the objective?

527) What is the ' wise use' concept of Ramsar convention? Name four types of wetlands included in its mission.

528) What are characteristics that make a community stable?

529) What could have triggered mass extinction of species in the past?

530) What does 'red' indicate in the IUCN red list (2004)?

531) Explain as to how protection of diversity hot spots alone can reduce up to 30% of the current rate of species extinction.

532) How does species diversity differ from ecological diversity?

533) Sanctuaries are tracts of land where animals are protected from all types of exploitation. Private ownership is permitted. Collection of minor sanctuaries are present in India?
(i) How many sanctuaries are present in India?
(ii) How much land area they cover?
(iii) Name any three sanctuaries.
(iv) List any three human activities are allowed in sanctuaries.

534) What is particulate matter? How do particulate matters harm human health?

535) What is photochemical smog? How does smog affect the biological world?

536) What is acid rain? What are its effects on plants?

537) What is meant by environmental pollution?

538) What for the following abbreviation stand?
CFC, PCB, HC, PAN, BOD, dB, ppm

539) Particulate and gaseous pollutants along with harmless gases are released from the thermal power plants.
(i) Name any two harmless gases released.
(ii) Name the most widely used device of removing particulate pollutants from the air. Explain how the device is used.

540) What would be the impact on the environment around a thermal power plant if its electrostatic precipitator stops functioning? Give a reason.

541) Microbes play a dual role when used for sewage treatment as they not only help to retrieve usable water but also generate fuel. Write in points how this happens?

542) (a) How does activated sludge get produced during sewage treatment?
(b) Explain how this sludge is used in biogas production.

543) What are flocs? State their role in effluent treatment and their ultimate fate in sewage treatment tank.

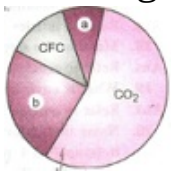
544) (a) A decade back, the enormous vehicular traffic in Delhi had made Delhi rank 4th among most polluted cities of the world.Two measures taken by the Delhi government brought marked improvement in air quality by 2005.What were these two measures and how did they reduce air pollution?
(b) What is the norm set by Euro-II for petrol and diesel vehicles?

545) (a) Why are people living in West Bengal prove to Black foot disease?
(b) What is blue baby syndrome? Explain.

546) Why is thermal pollution harmful to aquatic animals?

547) Why are cloudy, dusty and humid nights warmer than the clear, dust-free and dry nights?

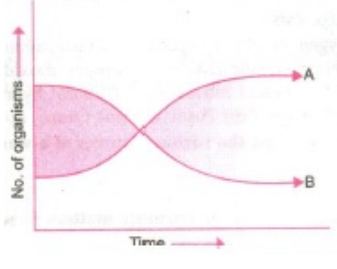
548) The figure is given shows relative contributions of various greenhouse gasses to the total global warming.



(i) Name the gasses (a) and (b)

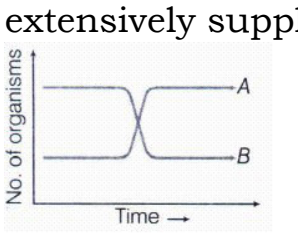
549) Create an aquatic food chain in a water body into which effluents flow from a pesticide factory. Diagrammatically represent and answer the following questions:
What is the phenomenon called?

550) The graph below represents the growth patterns of types of aquatic organisms over a brief period of time in a water body surrounded by an agricultural land extensively supplied with fertilizers. Identify what would represent(i) A and (ii) B.



551) Name any one greenhouse gas and its possible source of production on a large scale. What are the harmful effects of it?

552) Two types of aquatic organisms in a lake show specific growth patterns as shown below, in a brief period patterns as shown, in a brief period of time. The lake is adjacent to an agricultural land extensively supplied with fertilizers.



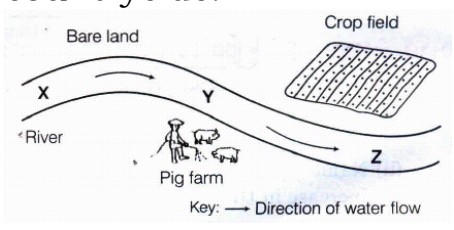
Answer the questions based on the facts given above.
(i) Name organisms depicting patterns A and B.
(ii) State the reason for the growth patterns seen in A.
(iii) Write effect of growth patterns each above

553) 'Determination of Biological Oxygen Demand (BOD) can help in suggesting the quality of a water body'.Explain.

554) How have human activities caused desertification? Explain

555) Biological Oxygen Demand or BOD increases with increases in water pollution. In this reference, answer the questions that follow.
(i) At a particular segment of the river near a sugar factory, the BOD is much higher than the normal level. What is it indicative of?
(ii) What will happen to the dissolved oxygen and living organisms in this part of the river?

556) The diagram given below shows a river and the types of land uses on two sides of the river in a countryside.



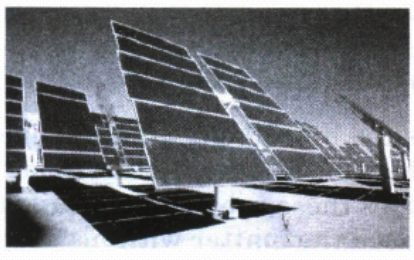
The water quality of the river was studied by measuring the amount of dissolved oxygen and ammonia in the water, collected at sites X, Y and Z. The result is presented in the table below:

Site	Dissolved oxygen cm^3/liter	Ammonia(ppm)
X	8.9	0.02
Y	0.3	0.62
Z	1.6	5.30

(i) Explain why site Y has the lowest content of dissolved oxygen
(ii) Why are very few fishes found at site 'Z'?
(iii) Which organism will thrive just after site Z?

557) With the help, a flow chart exhibits the events of eutrophication.

558) 1. Observe the figure A and B given below and answer the following questions.

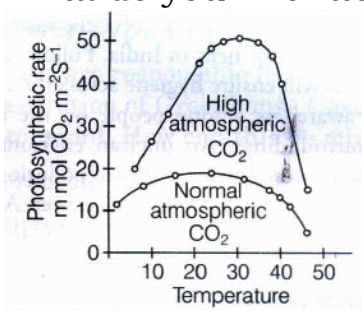


A

B

(i) The power generation by the above two methods is non-polluting. True/false;
(ii) List any two applications of solar energy.
(iii) What is a photovoltaic cell?

559) Increased levels of atmosphere CO_2 result in the 'greenhouse effect' and thus global warming.The graph shows the effect of these changes on photosynthesis.
What do you infer about the effect of CO_2 and temperature on the rate of photosynthesis in plants?

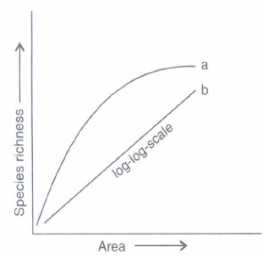


560) The gradual increase in the temperature of the world is cause of major climatic changes. These climatic changes affect the different aspects of human physiology. Explain the impact of climate change causing various human diseases with the help of flowchart

561) Explain, giving three reasons, why tropics show greatest levels of species diversity.

562) Since the origin of life on the earth, there were five episodes of mass extinction of species.
(i) How is the 'Sixth Extinction', presently in progess, different from the previous episodes?
(ii) Who is mainly responsible for the 'Sixth Extinction'?
(iii) List any four points that can help to overcome this disaster.

563) The following graph shows the species-area relationship. Answer the following question as directed.
(a) Name the naturalist who studied the kind of relationship shown in the graph. Write the observation made by him.
(b) Write the situations as discovered by the ecologists when the value of 'Z' (slope of the line) lies



(i) 0.1 and 0.2
(ii) 0.6 and 1.2
What does 'Z' stand for?
(c)When would the slope of the line 'b' become steeper?

564) What is the source/cause of biodiversity. Name the region with maximum biodiversity?

565) A snake charmer smelt the presence of a cobra in a particular house of a residential locality. Residents were living there in fear because of its presence. The snake charmer convinced the residents and assured them that he could remove the cobra from the locality so that the residents may get rid of it. The residents therefore allowed the snake charmer to search the cobra to kill it. However one of the residents objected to such type of thinking of the residents and the action of the snake charmer. Based on this information answer the following questions:
(i) Do you think that the objection raised by the resident was right & justified?
(ii) How is snake important in the ecosystem?
(iii) What value was shown by the resident?

566) Why should biodiversity be conserved? Explain giving three reasons.

567) Explain the level of biodiversity at genetic, specific and ecological levels with the help of one example for each of the three.

568) Narrowly utilitarian arguments are put forth in support of biodiversity conservation. Explain the other two arguments that are put forth in support of the same cause.

569) Many plant and animal species are on the verge of their extinction because of loss of forest land by indiscriminate use by the humans. As biology student what method would you suggest along with its advantages that can protect such threatened species from getting extinct?

570) There are many animals that have become extinct in the wild but continue to be maintained in Zoological parks.
(i) What type of biodiversity conservation is observed in this case?
(ii) Explain any other two ways that help in this type of conservation.

571) (a) Why is there a need to conserve biodiversity?
(b) Name and explain any two ways that are responsible for the loss of biodiversity.

572) Regions with high endemism are chosen as hot spots. Why?

573) How is the presently occurring species extinction different from earlier mass extinction.

574) Western ghats have greater amphibian diversity than the eastern ghats. What do you infer from the above two statements?

575) Differentiate between National parks and sanctuaries.

576) Since the origin of life on earth and evolution there have been 5 episodes of mass extinction, but the current rate of extinction is 100-1000 times. What are the main causes of high extinction rate and how is it going to harm human beings?

577) Explain giving three reasons why tropics show, greatest level of species diversity.

578) Write the importance of species diversity to the ecosystem. Support your answer with the finding of Tilman.

579) Name and describe any three causes of biodiversity losses.

580) (i) Explain two approaches of biodiversity conservation.
(ii) Which conservation method is used to maintain the species of wildlifein their natural habitats?

581) Explain how biodiversity is important for human.

582) Humans benefit from diversity of life. Give two examples.

583) In situ conservation can help endangered / threatened species. Justify the statement.

584) What are sacred groves? Where are they found in India? Explain their importance in conservation.

585) Express your opinion on removal of tribal people out of forest due to developmental activities in the forest.

586) Write a note on cultural and religious importance of biodiversity.

587) Which type of conservation measures, in situ or ex situ will help the larger number species to survive? Explain.

588) During her tour to a renowned forest, Sakshi saw a highway being constructed, which passes through the middle of the forest. She was unhappy seeing that and on return, she I contacted the local eco-club and approached the concerned department to stop the work.
(i) What would be the effect on biodiversity, if the highway is constructed?
(ii) Howforests are useful to mankind?
(iii) What values of Sakshi reflect here?

589) Seeing a crowd of students in one corner of the school: the principal rushed to see the matter and found some children beating and chasing a small lizard. On seeing the principal, all the children fled to their classes except Alok who requested the principal to arrange for some medical assistance for the injured animal. The principal rewarded Alok for his attitude to save guard our biodiversity.
(i) What do you understand by biodiversity?
(ii) Mention the factors resulting in loss of biodiversity.
(iii) Was Alokan indisciplined boy,who did not run to the class on seeing the principal? What values does the act promote?

590) During an excursion to a botanical garden, the teacher shows an old tree, which was on the verge of extinction. As soon as the teacher advanced with the students, some enthusiastic students climbed up the tree and started cutting the branches, collecting its leaves as precious collection. Rajesh instead took photographs of the tree from various angles. The boys mocked at Rajesh while the teacher appreciated him.
(i) Why should we conserve biodiversity?
(ii) Howcan biodiversity be conserved?
(iii) What international initiatives were taken to conserve biodiversity?
(iv) What values did Rajesh possess?

591) On his visit to a national park; Harshendra was very angry as the forest authorities did not allow him to enter a specified area. On returning back, he discussed the matter with his friend, who explained him the reason.
(i) Which category of conservation strategy does national park belong?
(ii) Name India's first national park.
(iii) At present, there are how many national parks in India?
(iv) Whatvalues are shownby Harshendra's friend?

592) Explain the levels of biodiversity at genetic, specific and ecological levels with the help of one example each.

593) Compare narrowly utilitarian and broadly utilitarian approaches to conserve biodiversity, with the help of suitable examples.

594) List six advantages of "ex-situ" approach to conservation of biodiversity.

595) (a) Why is Amazon rain forest referred to as lungs of the planet earth?
(b) Name any four industrial products obtained from nature.

596) How did Dr. David Tilman relate experimentally. the stability of a community and its species richness?

597) Explain the concept of "coextinction" by taking two examples.

598) Enumerate the reason for the conservation of biodiversity.

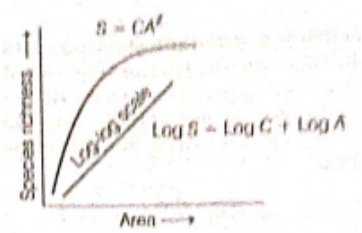
599) (i) Explain the concept of endemism.
(ii) Name four regions around our country that are considered hotspots.

600) Biodiversity plays a major role in many ecosystem services that nature provides.
(i) Describe any two broadly utilatarian arguments to justify the given.
(ii) State one ethical reason of conserving blodiversity.

601) plain the levels of biodiversity at genetic, specific and ecological levels with the help of one example each.

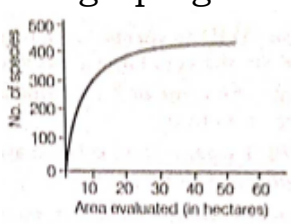
602) Give three hypothesis for explaining why tropics show greatest level of species richness.

603) (i) Write the inference drawn by Alexander von Humboldt after his extensive explorations of South American jungle.
(ii) Study the graph given below



As per Alexander von Humboldt, what do the symbols S, A, Z and Cin the graph stand for, in respect of a species and area relationship?

604) The graph given below shows species-area relationship of a certain region.



(i) Study the graph and explain what it represents.
(ii) After a while, a small area was taken for constructing a road which divided the region Into two. Write the impact of this construction would have on species richness of the region.

605) (i) 'India has greater ecosystem diversity than Norway. Do you agree with the statement? Give reasons in support of your answer.
(ii) Write the differences between genetic biodiversity and species biodiversity that exists at all the levels of biological organisation.

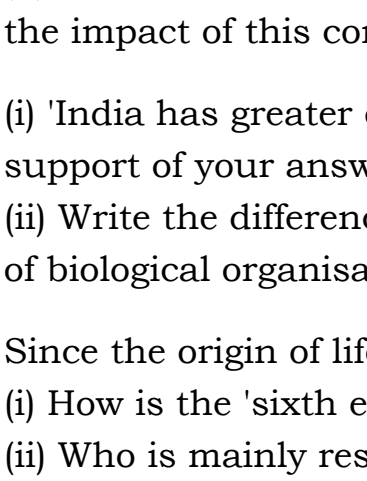
606) Since the origin of life on earth, there were five episodes of mass extinction of species,
(i) How is the 'sixth extinction', presently in progress, different from the previous episodes?
(ii) Who is mainly responsible for the 'sixth extinction'?
(iii) List any four points that can help to overcome this disaster.

607) Explain any three ways other than zoological parks, botanical gardens and wildlife safaries, by which threatened species of plants and animals are being conserved 'ex situ'.

608) Tropical regions harbour more species than the temperate regions. How have biologists tried to explain this in their own ways? Explain.

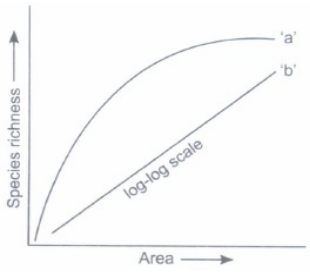
Case Study Questions 21 x 4 = 84

609) The global animal diversity is shown in the pie charts (A-Invertebrates and B-vertebrates) drawn below. Answer the questions that follow.



(a) Name the animal groups that are represented by the areas shaded black in A and B, respectively. Also, mention the kind of habitat, where you would find these groups of animals.
(b) Identify the following groups of animals in the pie diagrams: Crustaceans and Amphibians.

610) The following graph shows the species area relationship.



Answer the following questions as asked.
(i) Write the equations for the curves a and b.
(ii) Name the naturalist who showed this kind of relationship.
(iii) Name the region he explored.

611) When a graph showing species-area relationship on a logarithmic scale, the relationship is a straight line. Ecologists have discovered that the value of *z*-line lies in the range of 0.1 and 0.2 irrespective of the taxonomic group or the region.
(a) When will the stope become much steeper with higher Z-values? Give an example.
(b) What do steeper slopes mean in this context?

612) It is learnt from the study of the history of life on earth through fossil records that there were large scale losses of species. Since the orgin and diversification of life forms on the earth, there were five episodes of mass extinction. The 'Sixth Extinction' is presently in progress.
(a) Give two points as to how this sixth episode is different from the earlier episodes.
(b) What do the ecologists warn about the current trend?
(c) Mention the three effects of loss of biodiversity in a region.

613) Faced with conflict between development and conservation, many nations find it unrealistic and economically not feasible to conserve all their biological wealth. On a global basis, eminent conservationists have identified certain regions as 'Biodiversity hotspots' for maximum protection.
(a) Mention two criteria for a region to be called a 'biodiversity hotspot'.
(b) Name two biodiversity hotspots in India.
(c) Hotspots occupy less than 2 per cent of the earth's land area. Yet, they are given priority for conservation of biodiversity. Give two reasons.

614) In the ex-situ conservation approach, the threatened plants and animals are taken out from their natural habitat and placed in special settings, where they can be protected and given special care. In recent times, ex-situ conservation has advanced beyond keeping the threatened species in enclosures.
(a) Mention any four advanced techniques of ex-situ conservation.
(b) Name two International conventions held in relation to biodiversity conservation.

615) **Read the following and answer any four questions from (i) to (v) given below:**

The Kakapo is the world's largest and heaviest parrot, found only in New Zealand. It is unusual in that it is nocturnal, flightless and ground-dwelling. It is an excellent climber of trees, has strong legs that allow it to "jog" several kilometres in a single trip, and has mossy green plumage mottled with brown and yellow. The Kakapo is also critically endangered as of now, there were only few known living individuals left.

(i) Which could be the possible reason for Kakapo to be well-adapted to its environment prior to the arrival of humans in New Zealand?

(a) Kakapo was active only in the night when its potential predators would not be out for hunting.

(b) The Kakapo would likely be well-camouflaged among the forest foliage due to its greenish plumage.

(c) It was able to effectively hunt for food in the night.

(d) All of these

(ii) When humans started to settle in New Zealand, they took with them non-native animals, including mammals such as cats, dogs and stoats. By which of the following ways, human settlement likely contributed to a near decimation of Kakapo populations in New Zealand?

(a) Habitat destruction (b) Alien species invasion (c) Pollution (d) Both (a) and (b)

(iii) All known survived Kakapo have been relocated by the New Zealand government to three predator-free islands, where they are monitored year round by staffs and volunteers to ensure that the birds are safe, healthy and well-fed. The extremely low population of Kakapo is a hurdle to the species becoming viable in the long term, despite such dedicated conservation efforts. This is because

(a) the small population results in very small gene pool

(b) there would be very limited genetic diversity among the resulting offspring.

(c) of reduced capacity of the species to adapt and survive changes in the environment.

(d) All of these

(iv) The reasons behind conserving biodiversity have been grouped into which of the following categories?

(a) Narrowly utilitarian (b) Broadly utilitarian (c) Ethical (d) All of these

(v) One of the ex situ conservation methods for endangered species is

(a) wildlife sanctuaries (b) biosphere reserves (c) cryopreservation (d) national parks.

616) **Read the following and answer any four questions from (i) to (v) given below:**

Edward Wilson described diversity at all levels of biological organisation ranging from macromolecules inside the cells to biomes. It is of three inter-related hierarchial levels-genetic diversity, species diversity and community ecosystem diversity. Species diversity is the variety in the number and richness of the species of a region. For example, the Western ghats have a greater amphibian species diversity than the Eastern ghats.

(i) The number of species per unit area is called

(a) species evenness (b) species richness (c) species equitability (d) both (a) and (c).

(ii) The table below gives the population (in thousands) of ten species (A - J) in four areas (I - IV) consisting of the number of habitats given within brackets against each. Study the table and answer the question which follows:

Area and number of habitats	**Species and their population (in thousands) in the area**									
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
I(11)	23	12	0.52	6.0	-	3.1	1.1	9.0	-	10.3
II(11)	10.2	-	0.62	-	1.5	3.0	-	8.2	1.1	11.2
III(13)	11.3	0.9	0.48	2.4	1.4	4.2	0.8	8.4	2.2	4.1
IV(12)	3.2	10.2	1.1	4.8	0.4	3.3	0.8	7.3	1.3	2.1

Which are out of I to IV shows maximum species diversity?

(a) II (b) III (c) IV (d) I

(iii) Study the given populations and choose the correct answer in relation to species diversity.

Population	**Species**	**Group**	**Individuals**
Population A	I	Mammals	3
	II	Birds	2
	III	Amphibians	2
Population B	I	Mammals	2
	II	Mammals	2
	III	Amphibians	1
Population C	I	Mammals	3
	II	Mammals	2
	III	Mammals	1

Maximum diversity Minimum diversity

(a) Population B Population C

(b) Population A Population C

(c) Population A Population B

(d) Population B Population A

(iv) The concept of species diversity has two components : evenness and richness. Evenness is based on the relative abundance of species. Richness is based on the total number of species present. Diversity indices combine a measure of richness and evenness. The Simpson index (D) is calculated from the following equations:

$D = \sum_{i=1} (n_i/N)^2$

where, n = total number of organisms of particular species

N = total number of organisms of all species

Below are data collected in two terrestrial plant communities that represent part of a successional chronosequence. In this case the values were measured as percent cover.

Early Successional Community		**Late Successional Community**	
Species	Percent Cover	Species	Percent Cover
A	83	F	24
B	5	G	20
C	9	H	18
D	2	I	23
E	1	J	15

The data indicate that, relative to the early successional community, the late successional community has which of the following characteristics?

Species Richness Evenness

(a) Higher	**Higher**
(b) Higher	**Lower**
(c) Same	**Lower**
(d) Same	**Higher**

(v) Select the incorrect statement regarding species diversity.

(a) It results in polymorph formation and is useful in adaptation to changes in environmental conditions.

(b) Number of individuals of different species represent species evenness.

(c)It influences biotic interactions and stability of the community.

(d) It is a trait of the community.

617) **Read the following and answer any four questions from (i) to (v) given below:**

Non-native or alien species are often introduced in advertently for their economic and other uses. They often become invasive and drive away-the local species. Exotic species have proved harmful to both aquatic and terrestrial ecosystems. For example, water hyacinth (Eichhornia crassipes) was introduced in Indian waters to reduce pollution. It was clogged water bodies including wetlands at many places resulting in death of several aquatic plants and animals.

(i) Island water ecosystem are the most vulnerable due to

(a) small size (b) small number of species (c) increases reproductive capacity (d) both (a) and (b).

(ii) Which of the following is not an alien species?

(a) Lantana camara (b) Periplaneta americana (c) Nile Perch (d) Yucca moth

(iii) Second major cause of species extinction is

(a) habitat loss and fragmentation (b) over exploitation (c) alien species invasion (d) co-extinction.

(iv) **Assertion:** Eichhornia crassipes drains off oxygen from water and can be seen growing in standing water.

Reason: Eichhornia crassipes is an indigenous species of India.

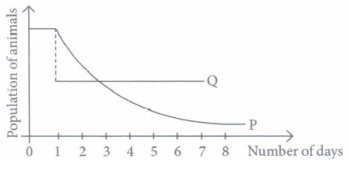
(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

(v) The population of species P in a certain community was constant until a population species Q from a distant land was subsequently introduced into that community. The interaction between the two populations is reflected in the graph below.



What could be the possible reason for the decrease in the population of species P over a number of days?

(a) Species Q is a predator of species P.

(b) Species Q.is a prey species which wiped out the population of species P.

(c) Species P and Q compete for space but feeds on different food.

(d) None of these

618) **Read the following and answer any four questions from (i) to (v) given below:**

IUCN maintains a Red Data Book or Red List which is a catalogue of taxa facing risk of extinction. The IUCN Red List (2004) documents the extinction of 784 species in the last 500 years. Some examples of recent extinctions include the dodo, quagga, thylacine and Steller's sea cow. The last twenty years alone have witnessed the disappearance of 27 species. Red List has eight categories of species.

(i) Dodo, an extinct taxon, belongs to which country?

(a) Mauritius (b) Africa (c) Australia (d) Russia

(ii) To which of the following categories of IUCN, Berberis nilghiriensis belongs?

(a) Extinct (b) Extinct in wild (c) Endangered (d) Critically endangered

(iii) Steller's sea cow and passenger pigeon became extinct due to

(a) alien species invasion (b) over-exploitation (c) coextinctions (d) intensive agriculture.

(iv) Bali, Javan and Caspian are

(a) species of tiger (b) species of cheetah (c) subspecies of cheetah (d) subspecies of tiger.

(v) Select the correct term for the following definitions (i, ii, iii, iv).

(i) The taxon is liable to become extinct 'if not allowed to realise its full biotic potential by providing protection from exotic species/human exploitation/habitat deterioration/depletion of food.

(ii) The taxon has been completely eliminated or died out from earth, e.g., Dodo.

(iii) The taxon is facing a high risk of extinction in the wild in the near future due to decrease in its habitat, excessive predation or poaching.

(iv) They are species with naturally small populations, either localised or thinly scattered, which are always at risk from pests/pathogens/predators/exotic species.

	(i)	(ii)	(iii)	(iv)
(a)	**Threatened**	**Extinct**	**Endangered**	**Rare**
(b)	**Endangered**	**Extinct**	**Threatened**	**Rare**
(c)	**Extinct**	**Rare**	**Threatened**	**Endangered**
(d)	**Threatened**	**Extinct**	**Rare**	**Endangered**

619) **Read the following and answer any four questions from (i) to (v) given below:**

Wetlands are called Ramsar sites because the first international convention on their conservation was held in Ramsar in Iran in 1971. Wetlands or Ramsar sites are low lying marshy areas which get filled up during rains due to runoff and overflow from other water bodies. They are often considered to be waste lands which are used as dumping area and filled up to recover land for various constructions activities. As a result, a large number of wetlands have disappeared.

(i) Select the incorrect match of wetland and its location.

Wetland	**Location**
(a) Harike	**Punjab**
(b) Chandra Tal	**H.P.**
(c) Bhoj	**M.P.**
(d) Ashtamudi	**Odisha**

(ii) Migratory bird flamingo breeds in which of the following wetlands?

(a) Bhitarkanika Mangroves (b) Rann of Kutch (c) Harike (d) Chandra Tal

(iii) Which of the following is not an importance of wetlands?

(a) They are an important source of recharging groundwater.

(b) They provide protection from floods.

(c) They are good source of siltation and purification of water.

(d) None of these

(iv) Which of the following wetland ecosystem is highly acidic and has a accumulation of decomposed plants known as peat?

(a) Bog (b) Mangrove (c) Estuary (d) Watershed

(v) The mangroves of Bhitarkanika are famous for

(a) rare migratory waterbirds **(b) nesting sites for endangered olive ridley turtles** **(c) prawn cultivation** **(d) all of these.**

620) **Read the following and answer any four questions from (i) to (v) given below :**

Excessive exploitation of species, whether a plant or animal reduces the size of its population so it becomes vulnerable to extinction. Such as Dodo and passenger pigeon have become extinct due to over exploitation by humans. Thus the world is facing accelerated rates of species extinctions, largely due to human interference.

(i) Which of the following cause of biodiversity loss is not included in evil quartet?

(a) Coextinction (b) Pollution

(c) Alien species invasion (d) Habitat loss and fragmentation

(ii) Identify the species that have become extinct due to over exploitation

(a) Stellar sea cow (b) Yucca moth

(c) Blatta orientalis (d) Nile Perch

(iii) Factors which make species susceptible to extinction are

(a) large population size (b) lack of genetic variability

(c) lower status of trophic level (d) ability to switch over to alternate foods.

(iv) **Assertion:** Pollution reduces species biodiversity.

Reason: Spillover of oil in sea causes death of several marine animals.

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

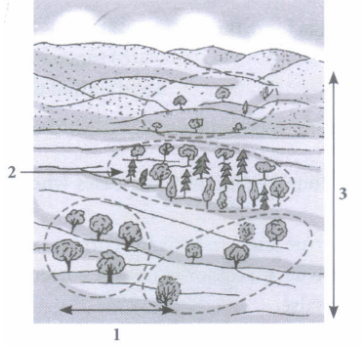
(d) Both assertion and reason are false.

(v) _____ is the first major cause of species extinction.

(a) Coextinction (b) Over exploitation (c) Habitat destruction (d) Alien species invasion.

621) **Read the following and answer any four questions from (i) to (v) given below:**

Ecosystem diversity is the variety of forms in the ecosystem due to diversity of niches, trophic levels and ecological processes like nutrient recycling, food webs, energy flow, etc. Study the given figure.



(i) Identify different types of diversity denoted by 1, 2 and 3 in the given figure.

	1	2	3
(a)	**Alpha diversity**	**Beta diversity**	**Gamma diversity**
(b)	**Gamma diversity**	**Alpha diversity**	**Beta diversity**
(c)	**Gamma diversity**	**Beta diversity**	**Alpha diversity**
(d)	**Beta diversity**	**Alpha diversity**	**Gamma diversity**

(ii) Alpha diversity is biodiversity present

(a) within community (b) between communities (c) in ranges of communities (d) none of these.

(iii) Diversity represented by diversity of habitats over a total landscape area is

(a) α - diversity (b) γ-diversity (c) β -diversity (d) δ - diversity

(iv) Concept of three types of ecological diversity was given by

(a) Elton (b) Odum (c) Edward Wilson (d) Whittaker.

(v) The diversity of organisms sharing the same habitat or community is termed as

(a) alpha diversity (b) beta diversity (c) gamma diversity (d) delta diversity.

622) **Read the following and answer any four questions from (i) to (v) given below:**

Ginkgo tree has been saved from extinction by selective breeding followed by channeling into trade of nature lovers. This is an ex-situ conservation, where endangered species are protected from all adverse factors. Offspring produced in captive breeding are released in natural habitat for acclimatisation.

(i) What is the Significance of offsite collections?

(a) Restock depleted populations (b) Protection of endangered species

(c) Reintroduce species in wild (d) All of these

(ii) Which of the following is not an ex-situ conservation?

(a) Wetlands (b) Orchards (c) Aquaria (d) Botanical gardens

(iii) Select the incorrect statements for ex-situ conservation.

(a) It is conservation of species outside their natural habitats.

(b) Endangered species are kept under human supervision and provided all the essentials.

(c) The species population recovers in natural environment.

(d) Both (b) and (c)

(iv) Conditions maintained in seed banks for orthodox seeds are

(a) low moisture content (b) anaerobic conditions (c) low temperature (d) all of these.

(v) **Assertion:** Animal species which have become extinct in wild continue to be maintained in zoological parks.

Reason: Captive breeding is the conservation of those cases where these is no realistic chance of in-situ survival.

(a) Both assertion and reason are true and reason is the correct explanation of assertion.

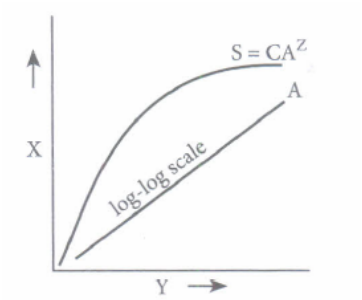
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.

(c) Assertion is true but reason is false.

(d) Both assertion and reason are false.

623) **Read the following and answer any four questions from (i) to (v) given below:**

Within a region, species richness increases with increasing explored area, but only upto a limit. The given graph explains this relationship.



(i) What does the given figure show?

(a) Rivet-popper hypothesis **(b) Species-area relationship**

(c) Proportionate number of species of major taxa **(d) α-ecological diversity**

(ii) Equation for relationship (A) between species richness and area is

(a) log S = log C + Z log A (b) log C = log S + Z log A

(c) Z log A = log S + log C (d) log S = log C + log A.

(iii) What is the value of slope of line or regression coefficient Z for frugivorous birds?

(a) 0.1-0.2 (b) 1.15 (c) 0.01-0.1 (d) 0.6-1.2

(iv) The shape of curve for relationship between species richness and areas for wide variety of taxa is

(a) straight line (b) parabola (c) rectangular hyperbola (d) bell shaped.

(v) Who gave this concept of increase in species richness with increasing offered area?

(a) Humboldt (b) Odum (c) Edward Wilson (d) Paul Ehrlich

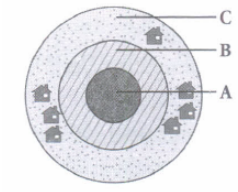
624) **Read the following and answer any four questions from (i) to (v) given below:**

Biosphere reserves are multipurpose protected areas which are meant for preserving genetic diversity in representative ecosystems of various natural biomes and unique biological communities by protecting wild populations, traditional life style of tribals and domesticated plant/animal genetic resources. Each biosphere reserve has three zones-core, buffer and transition zone.

(i) Which of the following is similar to biosphere reserve in terms of conservation?

(a) Gene banks (b) Offsite collection (c) Orchards (d) Hotspots

(ii) Refer to the given figure representing different zones of a biosphere reserve and select the correct option regarding it.



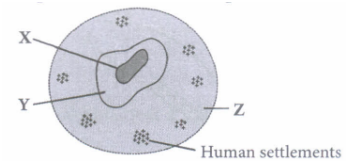
(a) A-Limited human activity is allowed such as for research and education.

(b) B-An active co-operation occurs between reserve management and local people for activities like cropping, settlements, etc.

(c) C-No human activity is allowed.

(d) None of these

(iii) Refer to the given diagrammatic representation of a biosphere reserve. Select the incorrect statement regarding X, Y and Z.



(i) X is devoted to strict protection of wildlife and no human activity is allowed in this zone.

(ii) In Y, only limited human activity (compatible with conservation) is allowed.

(iii) In Z, commercial exploitation of natural resources is allowed.

(iv) Tourism is allowed in Z zone only.

(v) Zone Y helps to maintain the lifestyle of the tribal people living in the area.

(a) (iii), (iv) and (v) only (b) (ii), (iii) and (v) only (c) (i), (iii) and (iv) only (d) (ii), (iii) and (iv) only

(iv) Biosphere reserves differ from national parks and wildlife sanctuaries because in the former.

(a) human beings are not allowed to enter

(b) people are an integral part of the system

(c) plants are paid greater attention than the animals

(d) living organisms are brought from all over the world and preserved for posterity.

(v) MAB Programme means

(a) Man and biosphere programme

(b) Man and biodiversity conservation programme

(c) Manually aided biosphere conservation programme

(d) none of these.

625) When we conserve and protect the whole ecosystem, its biodiversity at all levels is protected, we save the entire forest to save the tiger. This approach is called in situ (on-site) conservation. It includes biosphere reserves, national parks, wildlife sanctuaries and sacred groves. However, when these are situations where an animal or plant is endangered or threatened (organisms facing a very high risk of extinction in the wild in the near future) and needs urgent measures to save it from extinctions, ex situ (off-site) conservation is the desirable approach. It includes zoological parks, botanical gardens, gene banks, etc.

(i) The numbers of national parks, biosphere reserves and wildlife sanctuaries in India, respectively are

(a) 90, 14, 448 (b) 158, 62, 10

(c) 58, 412, 10 (d) 96, 412, 10

(ii) In your opinion, which isthe most effective way to conserve genetic diversity of the plant of an area?

(a) By tissue culture method

(b) By creating biosphere reserve

(c) By creating botanical garden

(d) By developing seed bank

(iii) Sacred groves in India are related with

(a) aesthetic pleasure

(b) the place where threatened species are protected

(c) the place where only artificial plant breeding is allowed

(d) forest patches around the places of worship

(iv) Cryopreservation of gametes of threatened species inviable and fertile condition can be referred to as

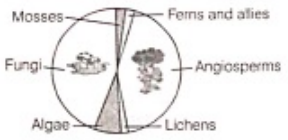
(a) in situ conservation of biodiversity

(b) advanced ex situ conservation of biodiversity

(c) in situ conservation by sacred groves

(d) in situ cryopreservation of biodiversity

626) Observe the global biodiversity distribution of the major plant taxa in the given diagram and answer the questions accordingly.



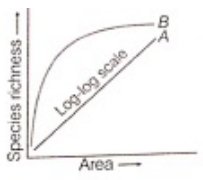
(i) Which group of plants are the most endangered?

(ii) Why are mosses/ferns so few? Give reason.

(iii) How do fungi that are heterotrophs status in themselves as a large population?

(iv) Which group of plants is most advanced and which one is most primitive?

627) The following graph shows the species-area relationship. Answer the following questions as directed.



(i) Name the naturalist who studied the kindof relationship shown in the graph. Write the observations made by him.

(ii) Write the situations as discovered by the ecologists when the value of Z (slope of the line) lies between (a) 0.1 and 0.2 (b) 0.6 and 1.2. What does Z stand for?

(iii) When would the slope of the line 'B' become steeper ?

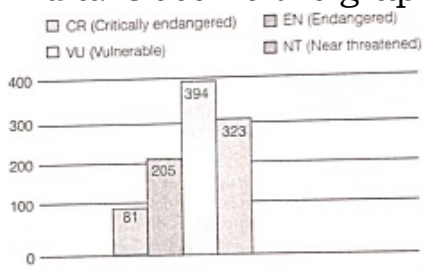
628) A man introduced Eichhornia in a water bodies near to the village. A biology student trying to stop the man to do so. But man does not listen student's advice. The student told them that it may cause biodiversity loss of the water bodies.

(i) Name the species which is extinct due to over exploitation

(ii) Which animal is affect due to the introduction of Nile perch into lake Victoria in East Africa?

(iii) The introduction of which animal threatened the population of indigenous catfishes in our rivers?

629) The graph given below represents the database of animal species that fall into different risk categories in India. Observe the graph and answer the following questions.



(i) What do you infer from vulnerable species? Why is the bar of such species high?
(ii) Give the names of two species (one plant and animal each) which fall into the category of near threatened worldwide.
(iii) What activities of the humans have led to a rise in the number of endangered animals in India?
or
(iii) What steps can be taken at individual levels in order to save species from getting endangered?

5 Marks 38 x 5 = 190

630) Describe in detail the species-area relationship of biodiversity

631) (a) What are the two types of desirable approaches to conserve biodiversity? Explain with examples bringing out the difference between the two types.
(b) What is the association between the bumble bee and its favourite orchid,Ophrys? How would extinction or change of one would affect the other?

632) (a) Taking one example each of habitatloss and fragmentation, explain how the two are responsible for biodiversity loss.
(b) Explain two different ways of biodiversity conservation.

633) Elaborate how invasion by an alien species reduce diversity of an area

634) Can you think of a scientific explanation, besides analogy used by paul Ehrlich, for the direct relationship between diversity and stability of an ecosystem?

635) Species diversity decrease as we move away from the equator towards the poles. what could be the possible reasons?

636) Explain briefly the 'rivet popper hypothesis' of Paul Ehrlich.

637) Give the approximate numbers of species which have been described and identified all over the world.

638) Give the Approximate number of plant and animal species recorded in India

639) Number of individuals among species may vary, resulting into differences in evenness or equatability; and consequently in diversity." Explain with an example.

640) Explain effects of habitat fragmentation on biodiversity.

641) How is introduction of Exotic species leading to endangering the species?

642) List the three types of extinction processes.

643) List the uses of biodiversity.

644) What are the uses of IUCN Red list categories?

645) Define the IUCN Red List categories.

646) Describe the main functions of biosphere reserves.

647) (a) Why should we conserve biodiversity? How can we do it?
(b) Explain the importance of biodiversity hot spots and sacred groves.

648) **Fill in the blanks:**

(i) In aeration tank, bacteria serve to _____ organic matter, and algae serve to _____for bacterial growth.

(ii) Effluent from secondary treatment contains_____which are killed by_____

(iii) Oxides of carbon that pollute air are ____and_____

(iv) Two oxides of nitrogen pollute air _____and____

(v) Oxides of sulphur which pollute air include_____and____

(vi) A highly toxic photochemical oxidant is PAN, i.e._____

(vii) PAN is formed by interaction of oxides of nitrogen and ____ in the presence of