SAMPLE CONTENT

MHT-CET 2021

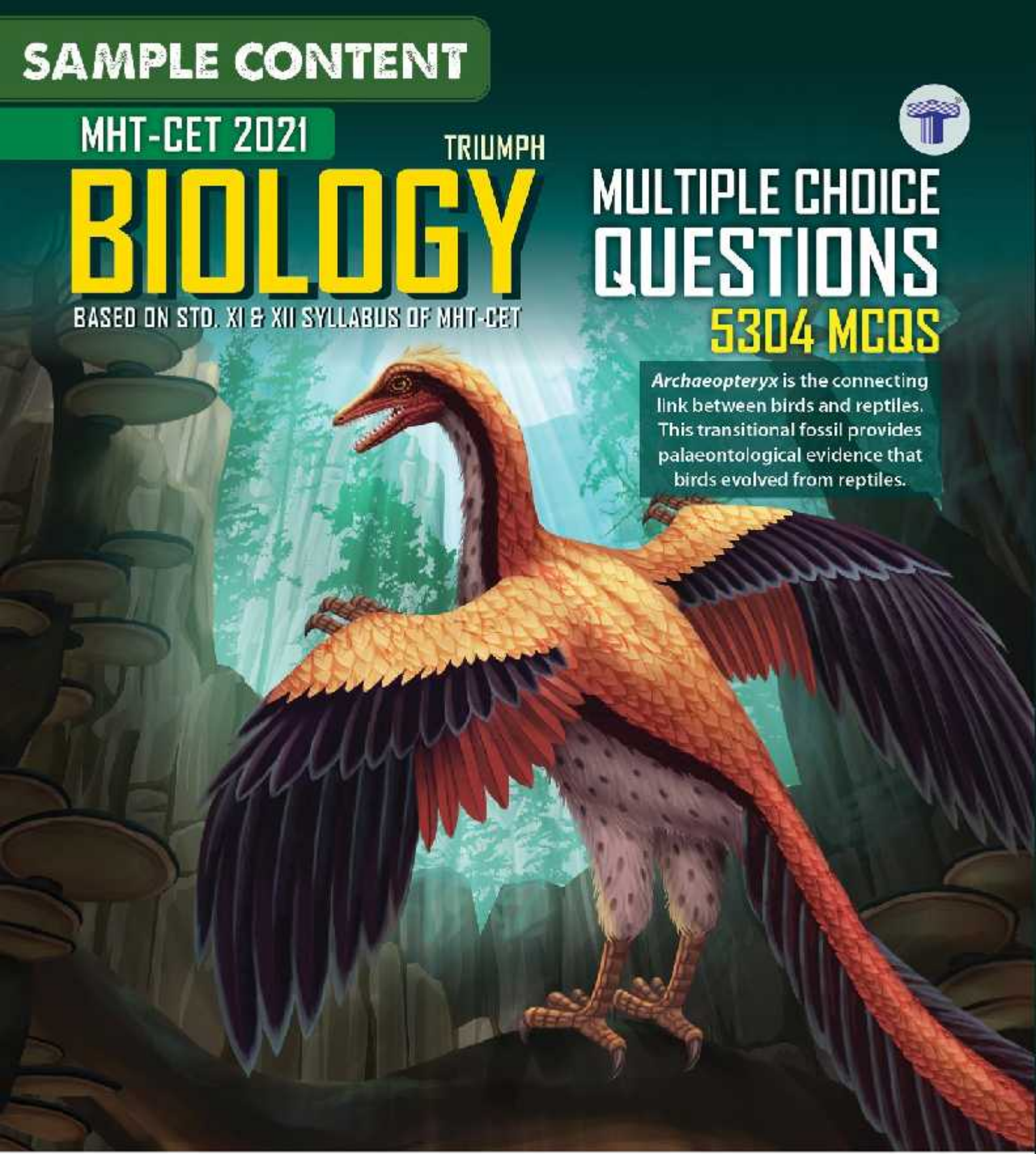
TRIUMPH

# BIOLOGY

## MULTIPLE CHOICE QUESTIONS

BASED ON STD. XI & XII SYLLABUS OF MHT-CET

5304 MCQS




Target Publications® Pvt. Ltd.

**Written in accordance with the latest MHT-CET Paper Pattern which includes topics based on Std. XII Sci. and relevant chapters of Std. XI Sci. (Maharashtra State Board)**

# MHT-CET TRIUMPH 5304 BIOLOGY MULTIPLE CHOICE QUESTIONS

**Based on Std. XI & XII Syllabus of MHT-CET**

## Salient Features

- Includes chapters of Std. XII and relevant chapters of Std. XI as per latest MHT-CET Syllabus
- '5304' MCQs including questions from various competitive exams
- Exhaustive subtopic wise coverage of MCQs
- Quick review provided for each chapter
- Exhaustive coverage of various competitive exam questions till the latest year
- Evaluation test provided at the end of each chapter
- Two Model Question Papers with Answer Keys and Solutions provided in the form of QR Code

| | | |
|---|---|---|
| *Scan the adjacent QR code to download Model Paper I and Solution.* | *Scan the adjacent QR code to download Model Paper II and Solution.* | *Scan the adjacent QR code to download Hints for relevant questions and Solutions to Evaluation Test in PDF format.* |

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# PREFACE

"Don't follow your dreams; chase them!"- a quote by Richard Dumbrill is perhaps the most pertinent for one who is aiming to crack entrance examinations held after std. XII. We are aware of an aggressive competition a student appearing for such career-defining examinations experiences and hence wanted to create books that develop the necessary knowledge, tools and skills required to excel in these examinations.

For the syllabus of **MHT-CET 2021**, 80% of the weightage is given to the syllabus for XII standard while only 20% is given to the syllabus for XI standard (with inclusion of only selected topics).

Although the syllabus for Std. XI - XII and MHT-CET is aligned, the outlook to study the subjects should be altered based on the nature of the examination. To score in MHT-CET, a student has to be not just good with the concepts but also quick to complete the test successfully. Such ingenuity can be developed through sincere learning and dedicated practice.

Having thorough knowledge of theory and its applications is a prerequisite for solving MCQs of Biology. Students must know the important processes and mechanisms that formulate the basis of the chapter. Biology is conveyed using diagrams and figures; therefore, students should study and understand them well. Students should aim to study integrated concepts and relate them to their real - life applications in order to visualize a clear map of the entire concept. It should be kept in mind that every single line of text has potential of generating several MCQs.

As a first step to master MCQ solving, students should start with elementary questions. Once a momentum is gained, complex MCQs with higher level of difficulty should be practised. Relevant questions from previous years as well as from other similar competitive exams should be solved to obtain an insight about plausible questions.

Competitive exams challenge the understanding of students about subject by combining concepts from different chapters in a single question. To figure these questions out, cognitive understanding of the subject is required. Therefore, students should put in extra effort to practise such questions.

Such a holistic preparation is the key to succeed in the examination!
To quote Dr. A.P.J. Abdul Kalam, "If you want to shine like a sun, first burn like a sun."

Our Triumph Biology book has been designed to achieve the above objectives. Commencing from basic MCQs the book proceeds to develop competence to solve complex MCQs. It offers ample practice of recent questions from various competitive examinations. While offering standard solutions in the form of concise hints. Each chapter ends with an Evaluation test to allow self-assessment.

Features of the book presented on the next page will explicate more about the same!

*We hope the book benefits the learner as we have envisioned.*

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we've missed something or want to applaud us for our triumphs, we'd love to hear from you.

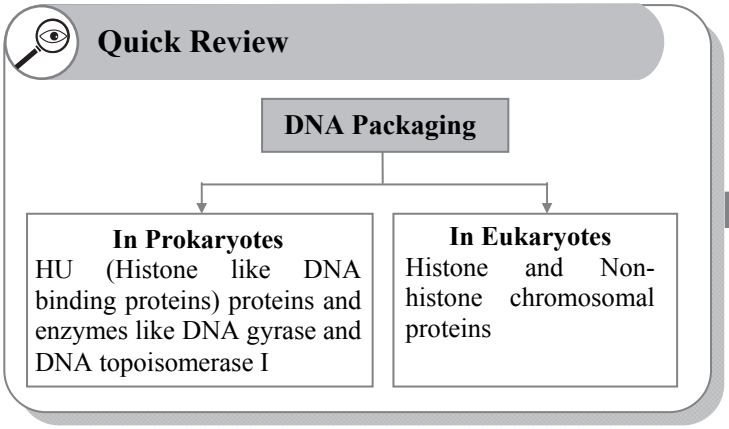
Please write to us on: mail@targetpublications.org

*Best of luck to all the aspirants!*

Yours,
Publisher

**Edition:** First

# FEATURES

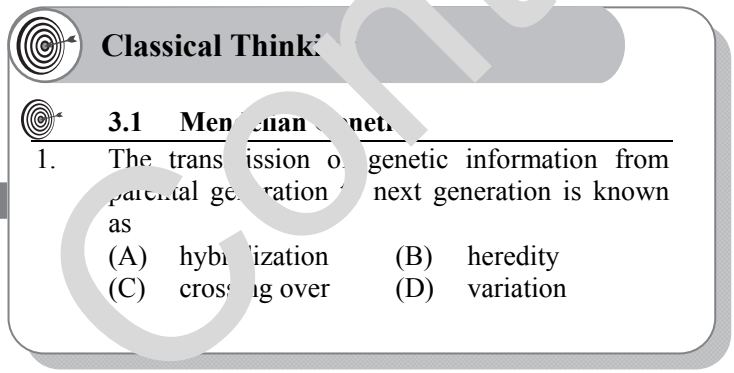


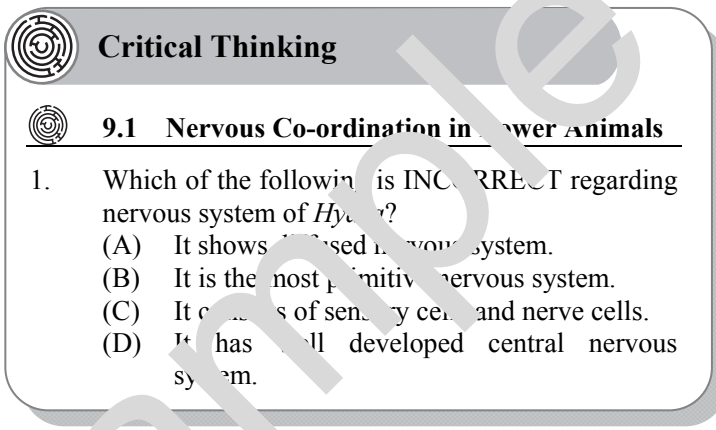

**Quick Review**

**Quick Review** includes tables/ flow charts to summarize the key points in the chapter.
*This is our attempt to help students to reinforce key concepts.*

**Classical Thinking**

**Classical Thinking** section encompasses straight forward questions including knowledge based questions.
*This is our attempt to revise the chapter in its basic form and warm up the students to deal with complex MCQs.*



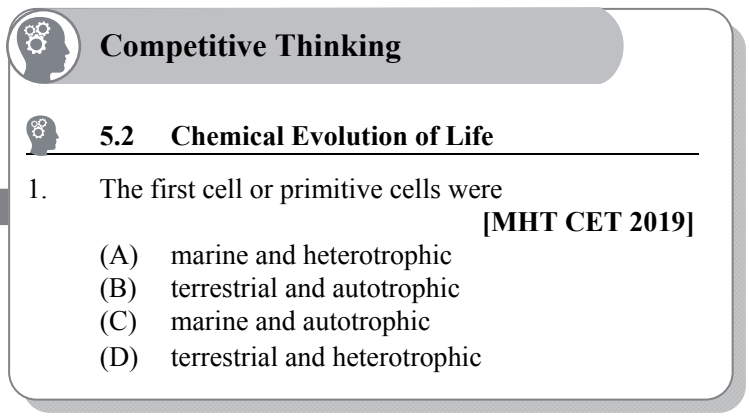




**Critical Thinking**

**Critical Thinking** section encompasses challenging questions which test understanding, rational thinking and application skills of the students.
*This is our attempt to take the students from beginner to proficient level in smooth steps.*

**Competitive Thinking**

**Competitive Thinking** section encompasses questions from various competitive examinations like MHT CET, AIPMT/NEET-UG, etc.
*This is our attempt to give the students practice of competitive questions and advance them to acquire knack essential to solve such questions.*



# FEATURES

## *Subtopics*

1.1 Asexual Reproduction
1.2 Sexual Reproduction
1.3 Microsporogenesis
1.4 Structure of Anatropous Ovule
1.5 Megasporogenesis

### Subtopic wise segregation

Every section is **segregated sub-topic wise.**

*This is our attempt to cater individualistic pace and preferences of studying a chapter and enabling easy assimilation of questions based on the specific concept.*

### Miscellaneous

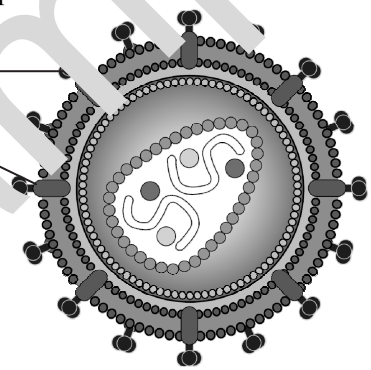
The **Miscellaneous** section incorporates MCQs whose solutions require knowledge of concepts covered in different sub-topics of same chapter or from different chapters.

*This is our attempt to develop cognitive thinking in the students essential to solve questions involving fusion of multiple key concepts.*

**Miscellaneous**

75. Read the following statements with respect to gene library and select the correct option.
    i. Gene library is a collection of different DNA sequences from an organism where each sequence has been cloned into a vector.
    ii. Gene library is created for ease of purification, storage and analysis of desired gene
    (A) Statement i is correct whereas statement ii is incorrect.
    (B) Statement ii is correct whereas statement i is incorrect.
    (C) Both statements i and ii are incorrect.
    (D) Both statements i and ii are correct.

41. Identify the labels i and ii in the given diagram of HIV particle.




(A) i – gp120, ii – gp 41
(B) i – Capsid protein, ii – gp 41
(C) i – gp 120, ii – Capsid protein
(D) i – gp 41, ii – gp120

### Diagram Based Questions

**Diagram based questions** *include challenging questions based on important diagrams/ figures in the chapter.*

*This is our attempt to facilitate students' conceptual understanding and enhance their spatial thinking ability.*

# FEATURES

**Evaluation test**

**Evaluation Test** covers questions from chapter for self-evaluation purpose.
*This is our attempt to provide the students with a practice test and help them assess their range of preparation of the chapter.*

**Evaluation Test**

12. During pregnancy test, _____ is detected in the urine.
(A) LH (B) hCG
(C) FSH (D) ACTH

# MHT-CET PAPER PATTERN

- There will be three papers of Multiple Choice Questions (MCQs) i.e. 'Mathematics', 'Physics and Chemistry' and 'Biology' of 100 marks each.
- Duration of each paper will be 90 minutes.
- Questions will be based on the syllabus prescribed by Maharashtra State Board of Secondary and Higher Secondary Education with approximately 20% weightage given to Std. XI and 80% weightage will be given to Std. XII curriculum.
- Difficulty level of questions will be at par with JEE (Main) for Mathematics, Physics, Chemistry and at par with NEET for Biology.
- There will be no negative marking.
- Questions will be mainly application based.
- Details of the papers are as given below:

| Paper | Subject | Approximate No. of Multiple Choice Questions (MCQs) based on | | Mark(s) Per Question | Total Marks |
|---|---|---|---|---|---|
| | | Std. XI | Std. XII | | |
| Paper I | Mathematics | 10 | 40 | 2 | 100 |
| Paper II | Physics | 10 | 40 | 1 | 100 |
| | Chemistry | 10 | 40 | | |
| Paper III | Biology | 20 | 80 | 1 | 100 |

- Questions will be set on
  i. the entire syllabus of Std. XII of 2021 of Physics, Chemistry, Mathematics and Biology subjects of exceeding portion which is deleted by Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune and
  ii. chapters / units from Std. XI curriculum as mentioned below:

| Sr. No. | Subject | Chapters / Units of Std. XI |
|---|---|---|
| 1 | Physics | Motion in a plane, Laws of motion, Gravitation, Thermal properties of matter, Sound, Optics, Electrostatics, Semiconductors |
| 2 | Chemistry | Some Basic Concepts of Chemistry, Structure of Atom, Chemical Bonding, Redox Reactions, Elements of Group 1 and Group 2, States of Matter: Gaseous and Liquid States, Basic Principles and techniques of Chemistry, Adsorption and Colloids, Hydrocarbons |
| 3 | Mathematics | Trigonometry - II, Straight Line, Circle, Measures of Dispersion, Probability, Complex Numbers, Permutations and Combinations, Functions, Limits, Continuity |
| 4 | Biology | Biomolecules, Respiration and Energy Transfer, Human Nutrition, Excretion and osmoregulation |

# CONTENTS



**Note:** ***Subtopics belonging to the reduced syllabus for year 2020-21 are represented with (R) mark. Questions of Standard XI are indicated by '*' in each Model Question Paper.***

Textbook Chapter No.

# 15 Biodiversity, Conservation and Environmental Issues

## *Subtopics*



***Great Indian Bustard***

*Once widely spotted across 11 states, the Great Indian Bustard is currently listed under the category of, 'Critically Endangered birds', in the 2013 'Threatened bird' list by IUCN.*

## Quick Review

**Causes of Biodiversity Loss**
- Habitat destruction and fragmentation.
- Over-exploitation
- Alien species invasion
- Coextinction of species.

**BIODIVERSITY**

**Red List or Red Data Book**

Published by IUCN (International Union for Conservation of Nature and Natural Resources) containing list of endangered plant and animal species.

**Extinct Species**
- Species in which the last individual has died or is not recorded

**Extinct in wild**
- Species whose members survive only in captivity

**Endangered Species**
- Species that possess a very high risk of extinction as a result of rapid population decline of 50 to more than 70 percent over the previous 10 years (or three generations)

**Vulnerable Species**
- Species that possess a very [illegible] risk of extinction as a result of rapid population decline of 30 [illegible] more than 50 percent over the previous 10 years (or three generations).

**Near Threatened**
- Species that are close to becoming threatened or may meet the criteria for threatened status in the near future.

**Least concern**
- Species that are pervasive and abundant after careful assessment

**Data deficient**

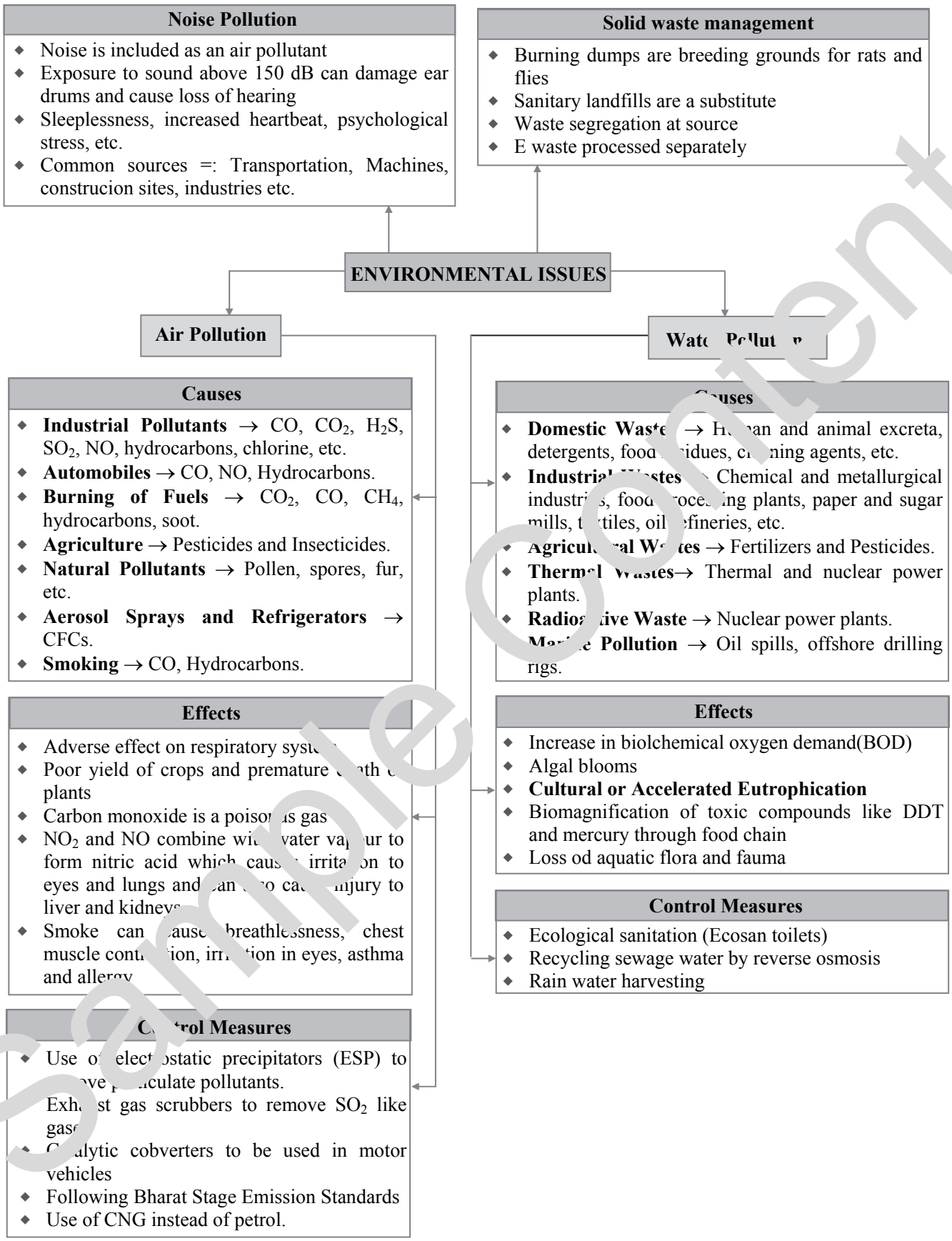
Species in which the amount of available data related to its risk of extinction, is lacking in some way.

**Not evaluated**
- Any of the nearly 1.9 million species described by scientists, but not assessed by the IUCN

**Conservation**

***in situ* Conservation**
- Conservation of species in their natural habitats.
  eg. National Parks, Wildlife Sanctuaries, Natural reserves, Biosphere Reserves, sacred groves

***ex situ* Conservation**
- Conservation of endangered species outside their natural habitats.
  eg. Botanical gardens, Culture collections, Zoological Parks.



## GLOBAL WARMING

### Greenhouse Effect and Global Warming

- Greenhouse effect is the heating-up of the earth's atmosphere due to trapped infra-red rays reflected from the earth's surface by atmospheric gases.
- Gases responsible for global warming → $CO_2$, $N_2O$, $CH_4$, CFCs.
- Global warming results in hotter summers, desertification, change in rainfall pattern, flooding, melting of polar ice-caps and glaciers.
- Control measures to check global warming include growing more trees, minimizing use of fossil fuels, use of organic manure and biofertilizers, and developing substitutes for CFCs.

### Ozone Depletion

- Ozone layer acts as a protective shield for life on the earth from the harmful UV rays of the sun.
- A large area of thin ozone layer is formed in the Antarctica region which is commonly called Ozone hole.
- Chlorofluorocarbons (CFCs) are mainly responsible for the depletion of ozone layer.
- Depletion of ozone layer results in damage to skin cells, skin cancer, cataract, permanent damage to cornea and snow blindness.

### Deforestation

- Deforestation is the permanent removal, decrease or deterioration of forests and woodlands.
- It results in loss of biodiversity, reduced soil fertility, soil erosion, global warming, global climatic changes and increased accident of landslides.

## Classical Thinking

### 15.0 Introduction

1. Biodiversity includes
   (A) microorganisms, plants, algae, fungi and animals
   (B) only microorganisms, algae and fungi
   (C) only plants and animals
   (D) only animals

2. Diversity is with respect to
   (A) colour, form, size and shape of organisms only
   (B) mode of nutrition and type of habitat only
   (C) reproductive cycle, duration of life span, type of habitat only
   (D) size, shape, colour, form, mode of nutrition, type of habitat, reproduction, mobility, duration of life span, etc.

3. Part of nature which includes the differences in the genes among the individuals of species, the variety and richness of all plants and animal species at different scales in a space and the types of ecosystem within a defined area is called
   (A) ecology (B) biodiversity
   (C) habitat (D) niche

4. The term biodiversity was coined by
   (A) Walter Rosen
   (B) Gregor Mendel
   (C) Oparin and Haldane
   (D) Huxley

### 15.1 Levels of Biodiversity

5. Which of the following is/ are a level(s) of biodiversity?
   (A) genetic diversity
   (B) species diversity
   (C) ecosystem diversity
   (D) all of these

6. Complete the analogy.
   Intraspecific diversity: Genetic diversity:: Interspecific diversity: _____
   (A) Species diversity
   (B) Ecosystem diversity
   (C) Ecological diversity
   (D) Allelic diversity

7. The number of species of plants and animals that are present in a region, constitutes its
   (A) species diversity
   (B) community diversity
   (C) interspecific diversity
   (D) all of these

8. Variety of species is known as species
   (A) richness
   (B) evenness
   (C) unevenness
   (D) both (A) and (B)

9. Species diversity deals with
   (A) species richness
   (B) species evenness
   (C) intraspecific diversity
   (D) both (A) and (B)

10. _____ diversity is related to the different types of ecosystems/ habitats within a given geographical area.
(A) Ecological (B) Species
(C) Community (D) Genetic

## 15.2 Patterns of Biodiversity

11. Which of the following habitat(s) show latitudinal and altitudinal gradient?
(A) arid (B) aquatic
(C) semiarid (D) all of these

12. Species richness is high at
(A) lower latitudes (B) higher latitudes
(C) higher altitudes (D) both (A) and (C)

13. Species richness is maximum in the
(A) Amazon rainforest
(B) Polar regions
(C) Temperate zone
(D) Australian continent

14. Who gave the species – area relationship?
(A) Alexander Von Humboldt
(B) Walter Rosen
(C) Edward Wilson
(D) Charles Darwin

15. For many species the graph of species – area relationship is generally
(A) rectangular parabola
(B) rectangular hyperbola
(C) sigmoid
(D) J shaped

16. What is the formula of species area relationship?
(A) $\log S = \log C + Z \log A$
(B) $\log A = \log S + C \log Z$
(C) $\log S = \log C + A \log Z$
(D) $\log Z = \log C + \log A$

17. The species area relationship equation is given as $\log S = \log C + Z \log A$. For smaller area, the value of Z ranges from _____.
(A) 0.1 to 0.2 (B) 10 to 20
(C) 0.2 to 0.6 (D) 0.6 to 1.2

18. Rich species diversity leads to lesser variation in biomass production over a period of time. This is called
(A) Productivity – Stability Hypothesis
(B) Rivet Popper Hypothesis
(C) Productivity – Biomass Hypothesis
(D) RNA world hypothesis

19. The significance of diversity is explained by __(i)__ in the __(ii)__ hypothesis.
(A) i – Paul Ehrlich, ii – Rivet Popper
(B) i – Walter Rosen, ii – Productivity-Stability
(C) i – Edward Wilson, i – Rivet Popper
(D) i – Paul Ehrlich, ii – Productivity-Stability

20. According to the Rivet Popper hypothesis which of the following analogy is INCORRECT?
(A) Rivets – Species
(B) Aeroplane – Ecosystem
(C) Rivets in key positions – Key species
(D) None of these

21. Loss of _____ species will cause a direct to the ecosystem in a very short span of time.
(A) key
(B) endangered
(C) invasive
(D) apex predator

## 15.3 Biodiversity: Current Scenario

22. _____ million species have been documented as per IUCN data (2004)
(A) 1.5 (B) 2.5
(C) 1.7 (D) 6.2

23. Out of the 18,00,000 known species, _____ occupies the largest portion.
(A) Eubacteria (B) Animals
(C) Plants (D) Fungi

24. Which of the following is the most abundant among the different known species of animals?
(A) Vertebrates (B) Invertebrates
(C) Molluscs (D) Insects

25. Out of the total number of known plant species, which of the following is most in number?
(A) Monocots (B) Dicots
(C) Ferns (D) Conifers

26. India has about _____ of the total land area of the world.
(A) 2.4% (B) 1.5%
(C) 3.0% (D) 0.5%

27. According to Robert May, we have recorded only _____ % of our natural wealth.
(A) 14 (B) 22
(C) 5 (D) 18

## 15.4 Loss of Biodiversity

28. Identify the type(s) of extinction of species.
(A) Mass extinction
(B) Natural extinction
(C) Anthropogenic extinction
(D) All of these

29. All of the following are natural reasons of extinction of species, EXCEPT
(A) Earthquakes
(B) Hunting
(C) Volcanic eruptions
(D) Forest fires

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To see complete chapter buy **Target Notes** or **Target E-Notes**

21. CFCs released in the atmosphere
(A) move upwards to the mesosphere
(B) are acted upon by UV rays to release fluorides
(C) form $Cl^-$ molecules that degrade ozone
(D) both (A) and (B)

### 15.10 Deforestation

22. The National Forest Policy, 1988 recommends _____ % forest cover for plains and _____% forest cover for hills.
(A) 33, 67 (B) 67, 33
(C) 20, 44 (D) 30, 15

23. The following statements about deforestation are true except,
(A) deforestation has caused extinction of species and soil erosion.
(B) deforestation has led to the development of suitable environment.
(C) deforestation has caused shrinking of fuel wood and shortage of timber.
(D) deforestation has increased the incidents of landslides.

24. Moirangthem Loiya is famous for all these contributions, EXCEPT
(A) Restoring Punshilok Forest
(B) Planting 385 banyan trees in Hulikal and Kudur
(C) Restoring a forest cover of over 250 varieties of plants
(D) Planting bamboo, oak, ficus, teak, jackfruit and *Magnolia* on large scale

## Competitive Thinking

### 15.2 Patterns of Biodiversity

1. Alexander Von Humboldt described for the first time **[NEET (UG) 2017]**
(A) Ecological Biodiversity
(B) Laws of limiting factor
(C) Species area relationships
(D) Population Growth equation

### 15.4 Loss of Biodiversity

2. One of the chief reasons among the following for the depletion in the number of species making it endangered is **[KCET 2014]**
(A) Over-hunting and poaching
(B) Greenhouse effect
(C) Competition and predation
(D) Habitat destruction

3. Which of the following is the most important cause of animals and plants being driven to extinction? **[NEET P-I 2016]**
(A) Habitat loss and fragmentation
(B) Co-extinction
(C) Over-exploitation
(D) Alien species invasion

4. Which of the following is the most important cause for animals and plants being driven to extinction? **[NEET (UG) 20**
(A) Economic exploitation
(B) Alien species invasion
(C) Habitat loss and fragmentation
(D) Drought and floods

5. Decline in the population of Indian native fishes due to introduction of *Clarias gariepinus* in river Yamuna can be categorized as **[NEET Odisha 2019]**
(A) Alien species invasion
(B) Co-extinction
(C) Habitat fragmentation
(D) Over exploitation

### 15.5 Conservation of Biodiversity

6. The Organization which publishes the Red List of species is **[AIPMT 2014]**
(A) ICFRE (B) IUCN
(C) UNEP (D) WWF

7. Red List contains data or information on **[NEET P-II 2016]**
(A) marine vertebrates only
(B) all economically important plants
(C) plants whose products are in international trade
(D) threatened species

8. The 'Red Data Book' records **[WB JEEM 2015]**
(A) species diversity of wetlands.
(B) list of water pollutants.
(C) list of threatened species.
(D) rate of population decline.

9. A Red list of endangered species is maintained by **[MH CET 2015]**
(A) CSIR (B) IUCN
(C) NEERI (D) WLS

10. How many hot spots of biodiversity in the world have been identified till date by Norman Myers? **[NEET P-II 2016]**
(A) 43 (B) 17 (C) 25 (D) 34

11. Cryopreservation of gametes of threatened species in viable and fertile condition can be referred to as: **[AIPMT 2015]**
(A) *In situ* conservation of biodiversity.
(B) Advanced *ex-situ* conservation of biodiversity.
(C) *In situ* conservation by sacred groves.
(D) *In situ* cryo-conservation of biodiversity.

12. Which one of the following is NOT the *in situ* conservation of biodiversity? **[MHT CET 2018]**
(A) Zoological parks
(B) Wildlife sanctuaries
(C) National parks
(D) Biosphere reserves

13. Which one of the following is NOT a method of *in situ* conservation of biodiversity? **[NEET (UG) 2019]**
(A) Botanical garden
(B) Sacred grove
(C) Biosphere reserve
(D) Wildlife sanctuary

14. All of the following are included in '*ex-situ* conservation' except **[NEET (UG) 2018]**
(A) Botanical gardens
(B) Sacred groves
(C) Wildlife safari parks
(D) Seed banks

15. An example of *ex situ* conservation is **[AIPMT 2014]**
(A) National Park (B) Seed Bank
(C) Wildlife Sanctuary (D) Sacred grove

16. Which one of the following is related to *ex-situ* conservation of threatened animals and plants? **[NEET (UG) 2017]**
(A) Wildlife Safari parks
(B) Biodiversity hot spots
(C) Amazon rainforest
(D) Himalayan region

17. Which of the following is NOT an *ex-situ* conservation? **[KCET 2015]**
(A) Cryopreservation
(B) Seed bank
(C) Biosphere reserve
(D) Botanical garden

18. Which one of the following is NOT an example of *ex-situ* conservation of endangered species? **[MHT CET 2017]**
(A) Zoological park
(B) National park
(C) Culture collection
(D) Botanical garden

19. In which of the following, both pairs have CORRECT combination? **[AIPMT 2015]**
(A) *In situ* conservation: National Park
*Ex situ* conservation: Botanical Garden
(B) *In situ* conservation: Cryopreservation
*Ex situ* conservation: Wildlife Sanctuary
(C) *In situ* conservation: Seed Bank
*Ex situ* conservation: National Park
(D) *In situ* conservation: Tissue culture
*Ex situ* conservation: Sacred groves

## 15.6 Biological Diversity Act 2002

20. The historic convention related to conservation of biological diversity is also known as **[KCET 2019]**
(A) Earth Summit
(B) Kyoto Summit
(C) World Summit
(D) Montreal Protocol

21. The Earth Summit held in Rio de Janeiro in 1992 was called: **[NEET (UG) 2019]**
(A) to assess threat posed to native species by invasive weed species
(B) for immediate steps to discontinue use of CFCs that were damaging the ozone layer.
(C) to reduce $CO_2$ emissions and global warming.
(D) for conservation of biodiversity and sustainable utilization of its benefits.

## 15.7 Environmental Issues

22. Which one of the following represents natural pollutants? **[MHT CET 2019]**
(A) dusts , pollen and carbon monoxide
(B) pollen, dusts from desert and hydrocarbons from vegetation
(C) smog , fog and dust
(D) pollen fibres and sulphur dioxide

23. A scrubber in the exhaust of a chemical industrial plant removes **[AIPMT 2014]**
(A) gases like sulphur dioxide.
(B) particulate matter of the size 5 micrometer or above.
(C) gases like ozone and methane.
(D) particular matter of the size 2.5 micrometer or less.

24. High value of BOD (Biochemical Oxygen Demand) indicates that **[AIPMT 2015]**
(A) Water is pure.
(B) Water is highly polluted.
(C) Water is less polluted.
(D) Consumption of organic matter in the water is higher by the microbes.

25. Phenomenon involving increase in concentration of non-degradable pollutants from lower to higher trophic levels is called **[WB JEEM 2015]**
(A) biomagnification (B) bioaccumulation
(C) biodegradation (D) bioinvasion

26. Increase in the concentration of a pollutant on successive trophic levels in an aquatic food chain is called **[TS EAMCET 2019]**
(A) Biodegradation
(B) Eutrophication

(C) Bioremediation
(D) Biomagnification

27. The highest DDT concentration in aquatic food chain shall occur in **[NEET P-II 2016]**
(A) eel
(B) phytoplankton
(C) seagull
(D) crab

### 15.8 Greenhouse Effect and Global Warming

28. Which one of the following is NOT caused by global warming? **[MHT CET 2018]**
(A) Melting of glacier
(B) Change in rainfall pattern
(C) Increase in sea level
(D) Increase in crop production

29. Which of the following pairs of gases is mainly responsible for greenhouse effect? **[NEET (UG) 2019]**
(A) Nitrogen and sulphur dioxide
(B) Carbon dioxide and methane
(C) Ozone and ammonia
(D) Oxygen and nitrogen

30. Match the items given in Column I with those in Column II and select the correct option given below:

| | Column I | | Column II |
|---|---|---|---|
| i. | Eutrophication | a. | UV-B Radiation |
| ii. | Sanitary landfill | b. | Deforestation |
| iii. | Snow blindness | c. | Nutrient enrichment |
| iv. | Jhum cultivation | d. | Waste disposal |

**[NEET (UG) 2018]**
(A) i-c, ii-d, iii-a, iv-b
(B) i-a, ii-c, iii-d, iv-b
(C) i-b, ii-a, iii-c, iv-d
(D) i-a, ii-b, iii-d, iv-c

### 15.9 Ozone Depletion

31. The zone of atmosphere in which the ozone layer is present is called **[AIPMT 2014]**
(A) Ionosphere (B) Mesosphere
(C) Stratosphere (D) Troposphere

32. Maximum ozone layer depletion is caused by _____ **[MHT CET 2019]**
(A) $NO_2$ (B) CO
(C) $CH_4$ (D) CFC

33. In stratosphere, which of the following elements acts as a catalyst in degradation of ozone and release of molecular oxygen? **[NEET (UG) 2018]**
(A) Fe (B) Cl
(C) Carbon (D) Oxygen

34. An international treaty known as Montreal Protocol was signed to control emission of **[MH CET 2015]**
(A) UV rays (B) Ozone
(C) CFC (D) Oxygen

35. Which of the following is not one of the prime health risks associated with greater UV radiation through the atmosphere due to depletion of stratospheric ozone? **[AIPMT 2015]**
(A) Increased cancer
(B) Reduced immune system
(C) Damage to eyes
(D) Increased liver cancer

36. Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancers? **[NEET P-I 2016]**
(A) Ammonia (B) Methane
(C) Nitrous oxide (D) Ozone

37. Which of the following protocols did aim for reducing emission of chlorofluorocarbons into the atmosphere? **[NEET (UG) 2019]**
(A) Gothenburg Protocol
(B) Geneva Protocol
(C) Montreal Protocol
(D) Kyoto Protocol

### 15.10 Deforestation

38. Joint Forest Management Concept was introduced in India during: **[NEET P-I 2016]**
(A) 1980s (B) 1990s
(C) 1960s (D) 1970s

39. Afforestation is **[MH CET 2014]**
(A) restoring a forest
(B) plantation in barren lands
(C) cultivation under agriculture
(D) jhum cultivation

40. Which one of the following human activity has contributed to deforestation in north – eastern states of India? **[KCET 2019]**
(A) Urbanisation
(B) Industrialisation
(C) Mono cropping
(D) Jhum cultivation

## Answer Key

### Classical Thinking

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | (A) | 2. | (D) | 3. | (B) | 4. | (A) | 5. | (D) | 6. | (A) | 7. | (D) | 8. | (A) | 9. | (D) | 10. | (A) |
| 11. | (D) | 12. | (A) | 13. | (A) | 14. | (A) | 15. | (B) | 16. | (A) | 17. | (A) | 18. | (A) | 19. | (A) | 20. | (D) |
| 21. | (A) | 22. | (A) | 23. | (B) | 24. | (B) | 25. | (B) | 26. | (A) | 27. | (B) | 28. | (D) | 29. | (B) | 30. | |
| 31. | (C) | 32. | (D) | 33. | (A) | 34. | (D) | 35. | (A) | 36. | (D) | 37. | (D) | 38. | (D) | 39. | (B) | 40. | (A) |
| 41. | (B) | 42. | (A) | 43. | (A) | 44. | (A) | 45. | (B) | 46. | (C) | 47. | (D) | 48. | (C) | 49. | (D) | | (B) |
| 51. | (C) | 52. | (D) | 53. | (B) | 54. | (B) | 55. | (A) | 56. | (B) | 57. | (D) | 58. | (B) | 59. | (D) | 60. | |
| 61. | (A) | 62. | (A) | 63. | (D) | 64. | (C) | 65. | (B) | 66. | (B) | 67. | (D) | 68. | (D) | 69. | (D) | 70. | (D) |
| 71. | (D) | 72. | (B) | 73. | (C) | 74. | (A) | 75. | (B) | 76. | (D) | 77. | (A) | 78. | (B) | 79. | | 80. | (C) |
| 81. | (B) | 82. | (A) | 83. | (D) | 84. | (C) | 85. | (D) | 86. | (D) | 87. | (D) | 88. | (A) | 89. | (C) | 90. | (A) |
| 91. | (B) | 92. | (D) | 93. | (A) | 94. | (A) | 95. | (A) | 96. | (D) | 97. | (A) | 98. | (D) | 99. | (A) | 100. | (B) |
| 101. | (D) | 102 | (A) | 103. | (D) | 104. | (A) | 105. | (D) | 106. | (C) | 107. | (D) | 108. | | 109. | (A) | 110. | (B) |
| 111. | (C) | 112. | (A) | 113. | (A) | 114. | (A) | 115. | (C) | 116. | (D) | 117. | (D) | 118. | (B) | 119. | | 120. | (C) |
| 121. | (A) | 122. | (B) | | | | | | | | | | | | | | | | |

### Critical Thinking

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | (C) | 2. | (D) | 3. | (C) | 4. | (C) | 5. | (A) | 6. | (D) | 7. | (A) | 8. | (B) | 9. | (C) | 10. | (C) |
| 11. | (A) | 12. | (D) | 13. | (B) | 14. | (B) | 15. | (A) | 16. | (A) | | (C) | | 8. | (B) | 19. | (C) | 20. | (A) |
| 21. | (C) | 22. | (A) | 23. | (B) | 24. | (B) | | | | | | | | | | | | |

### Competitive Thinking

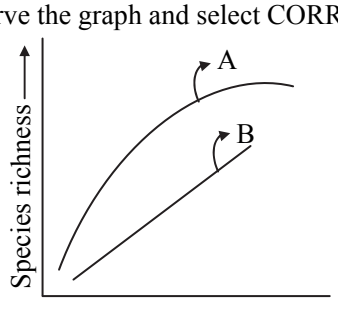
| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | (C) | 2. | (D) | 3. | (A) | 4. | (C) | 5. | (A) | 6. | (B) | 7. | (D) | 8. | (C) | 9. | (B) | 10. | (D) |
| 11. | (B) | 12. | (A) | 13. | (A) | 14. | (B) | 15. | (B) | 16. | (A) | 17. | (C) | 18. | (B) | 19. | (A) | 20. | (A) |
| 21. | (D) | 22. | (B) | 23. | (A) | 24. | (B) | | (A) | 26. | (D) | 27. | (C) | 28. | (D) | 29. | (B) | 30. | (A) |
| 31. | (C) | 32. | (D) | 33. | (B) | 34. | (C) | 35. | (D) | 36. | (D) | 37. | (C) | 38. | (A) | 39. | (B) | 40. | (D) |

## Evaluation Test

1. One of the *ex-situ* conservation methods for endangered species is
   (A) sacred grove
   (B) biosphere reserve
   (C) zoological park
   (D) national park

2. Which of the following leads to anthropogenic extinction?
   (A) Earthquakes
   (B) Volcanic eruptions
   (C) Overexploitation of resources
   (D) Forest fires

3. Observe the graph and select CORRECT option.




   (A) Line A represents, $S=CA^2$
   (B) Line B represents, $\log S = \log C + Z \log A$
   (C) Line A represents, $S=ZA^C$
   (D) Line B represents, $\log S = \log Z + C \log A$

4. The wavelengths of UV-B radiations range from
   (A) 100-280 nm (B) 280-322 nm
   (C) 350-450 nm (D) 140-350nm

5. In an aquatic food chain, the amount of nonbiodegradable pesticide will be the highest in
   (A) zooplanktons (B) small fishes
   (C) large fishes (D) birds

6. Select the ODD one out.
   (A) Dodo bird
   (B) Stellar sea
   (C) Water hyacinth
   (D) Passenger pigeon

R 7. The exhaust gases after passing through a catalytic converter does not include
   (A) NO (B) $CO_2$
   (C) $SO_2$ (D) CO

8. According to IUCN, EW species refers to species
   (A) whose members survive only in captivity
   (B) in which last individual has died
   (C) that are pervasive and abundant
   (D) that are close to becoming threatened

R 9. Which one of the following is NOT used to reduce air pollution?
   (A) Incinerator
   (B) Electrostatic precipitator
   (C) Exhaust Gas Scrubber
   (D) Catalytic converter

10. Harmful UV radiations of sun are absorbed by the ozone layer of the _____ before it reaches the earth's surface.
   (A) troposphere (B) stratosphere
   (C) mesosphere (D) thermosphere

11. Which of the following refers to 'Terror of Bengal'?
   (A) Algal bloom (B) Water hyacinth
   (C) Increased BOD (D) Eutrophication

R 12. Incomplete combustion of fuel such as coal and wood causes release of
   (A) $O_2$ (B) $CH_4$
   (C) CO (D) $SO_2$

R 13. Algal bloom results due to
   (A) presence of large amount of nutrients in water
   (B) presence of high oxygen content in water
   (C) presence of low organic compounds in water
   (D) low microbial activity and nutrients in water

R 14. Greenhouse gases
   (A) radiate heat energy back to the Earth's surface
   (B) include gases like $CO_2$ and $CH_4$
   (C) are responsible for global warming
   (D) all of the above

15. _____ is a designation applied to species that are close to becoming threatened.
   (A) EW (B) NT
   (C) LC (D) EN

## Answers to Evaluation Test

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. | (C) | 2. | (C) | 3. | (B) | 4. | (B) |
| 5. | (D) | 6. | (C) | 7. | (A) | 8. | (A) |
| 9. | (A) | 10. | (B) | 11. | (B) | 12. | (C) |
| 13. | (A) | 14. | (D) | 15. | (B) | | |

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