Q1. The term "biodiversity hotspot" was coined by:

A. Norman Myers
B. Alexander von Humboldt
C. Charles Darwin
D. Paul Ehrlich

Answer: A. Norman Myers
Explanation: He introduced the concept of biodiversity hotspots to identify regions rich in endemic species and under threat.

Q2. Which of the following regions is not a biodiversity hotspot in India?

A. Indo-Burma
B. Western Ghats
C. Himalayas
D. Thar Desert

Answer: D. Thar Desert
Explanation: Thar Desert is not among the 4 recognized biodiversity hotspots of India.

Q3. The Amazon rainforest is called:

A. Earth's lungs
B. Cradle of biodiversity
C. Carbon sink
D. All of the above

Answer: D. All of the above
Explanation: Amazon forest plays all these roles due to its vast plant biomass and high productivity.

Q4. Match the following:

Column I	Column II
A. Alpha diversity	1. Between communities
B. Beta diversity	2. Within a community
C. Gamma diversity	3. Total landscape diversity

D. Endemism 4. Species unique to a region

Options:
A. A-2, B-1, C-3, D-4
B. A-1, B-2, C-4, D-3
C. A-3, B-2, C-1, D-4
D. A-2, B-3, C-1, D-4

Answer: A. A-2, B-1, C-3, D-4
Explanation: These are standard definitions of biodiversity measures and endemism.

Q5. Which type of biodiversity provides humans with oxygen, food, medicine, and fuel?

A. Genetic diversity
B. Species diversity
C. Ecosystem diversity
D. All of the above

Answer: D. All of the above
Explanation: Each level of biodiversity contributes directly or indirectly to human survival.

Q6. Assertion (A): In-situ conservation protects species in their natural habitat.

Reason (R): Ex-situ conservation involves on-site preservation in zoos and botanical gardens.

A. Both A and R are true, and R is the correct explanation of A
B. Both A and R are true, but R is not the correct explanation of A
C. A is true, but R is false
D. A is false, but R is true

Answer: C. A is true, but R is false
Explanation: Ex-situ conservation is off-site, not on-site.

Q7. Sacred groves are best examples of:

A. Agroforestry
B. Biodiversity destruction

C. Ex-situ conservation
D. In-situ conservation

Answer: D. In-situ conservation
Explanation: Sacred groves are preserved naturally due to religious or cultural beliefs.

Q8. Which organization publishes the Red Data Book?

A. UNEP
B. WWF
C. IUCN
D. UNDP

Answer: C. IUCN
Explanation: IUCN maintains the Red List for endangered species.

Q9. Which of the following is not a cause of biodiversity loss?

A. Habitat fragmentation
B. Pollution
C. Climate stability
D. Alien species invasion

Answer: C. Climate stability
Explanation: It's not a cause; climate instability is.

Q10. The Rivet Popper Hypothesis was proposed by:

A. Edward Wilson
B. Robert May
C. Paul Ehrlich
D. David Tilman

Answer: C. Paul Ehrlich
Explanation: He compared species to rivets in an airplane wing – losing too many causes collapse.

Q11. In which year was the Earth Summit held at Rio de Janeiro?

A. 1992
B. 1990
C. 1994
D. 1985

Answer: A. 1992
Explanation: The Convention on Biological Diversity was signed during the 1992 Earth Summit.

Q12. What percentage of the world's species is estimated to be found in India?

A. 2.4%
B. 8.1%
C. 1.8%
D. 10%

Answer: A. 2.4%
Explanation: India is one of the 17 megadiverse countries, contributing about 2.4% of world species.

Q13. Which of the following is not a method of ex-situ conservation?

A. Zoological parks
B. Gene banks
C. Wildlife sanctuaries
D. Cryopreservation

Answer: C. Wildlife sanctuaries
Explanation: Sanctuaries are in-situ conservation sites.

Q14. Species confined to a particular region and not found elsewhere are called:

A. Rare species
B. Exotic species
C. Endemic species
D. Invasive species

Answer: C. Endemic species
Explanation: These species are unique to a specific location.

Q15. Assertion (A): Biodiversity ensures ecosystem stability.

Reason (R): Higher biodiversity increases resilience to environmental stress.

A. Both A and R are true, and R is the correct explanation of A
B. Both A and R are true, but R is not the correct explanation of A
C. A is true, but R is false
D. Both A and R are false

Answer: A. Both A and R are true, and R is the correct explanation of A
Explanation: Biodiversity enhances adaptability and balance in ecosystems.

Q16. Which group of organisms is most threatened by habitat loss?

A. Mammals
B. Amphibians
C. Birds
D. Reptiles

Answer: B. Amphibians
Explanation: Amphibians are highly sensitive to habitat changes due to their dual life and permeable skin.

Q17. Which one of the following is a major cause of extinction of species?

A. Evolution
B. Reproductive isolation
C. Habitat destruction
D. Mutation

Answer: C. Habitat destruction
Explanation: It leads to the direct loss of shelter, food, and breeding grounds for many species.

Q18. The term ‘endangered species’ is used for species:

A. Which are not found now
B. About to be extinct

C. Rare but stable
D. Recovered from extinction

Answer: B. About to be extinct
Explanation: Endangered species have very small populations and face a high risk of extinction.

Q19. Match the following biodiversity levels with their examples:

Column I	Column II
A. Genetic diversity	1. Different alleles in wheat varieties
B. Species diversity	2. Lion, tiger, leopard in a forest
C. Ecosystem diversity	3. Forest, desert, and wetland ecosystems

Options:
A. A-1, B-2, C-3
B. A-2, B-1, C-3
C. A-3, B-1, C-2
D. A-1, B-3, C-2

Answer: A. A-1, B-2, C-3
Explanation: Each example corresponds to one level of biodiversity.

Q20. Which of the following statements is correct?

A. Biodiversity increases from equator to poles
B. Tropical regions have less biodiversity than temperate
C. Biodiversity is uniform all over the earth
D. Species richness decreases from equator to poles

Answer: D. Species richness decreases from equator to poles
Explanation: Tropical regions have higher temperature, productivity, and time for species evolution.

Q21. Assertion (A): Hotspots are regions of high species richness.

Reason (R): They also contain large numbers of endemic species.

A. Both A and R are true, and R is the correct explanation of A
B. Both A and R are true, but R is not the correct explanation of A
C. A is true, but R is false
D. Both A and R are false

Answer: A. Both A and R are true, and R is the correct explanation of A
Explanation: Hotspots are rich in both overall species and unique endemics.

Q22. Which of the following is a cause for biodiversity loss?

A. Afforestation
B. Reforestation
C. Introduction of invasive species
D. Botanical gardens

Answer: C. Introduction of invasive species
Explanation: Invasive species outcompete or disrupt native species and ecosystems.

Q23. The IUCN Red List has how many categories?

A. 5
B. 6
C. 7
D. 9

Answer: D. 9
Explanation: Categories include extinct, endangered, vulnerable, least concern, etc.

Q24. Which of the following strategies will best help in biodiversity conservation?

A. Monoculture plantations
B. Constructing buildings in forests
C. Protected areas like national parks
D. Use of chemical fertilizers

Answer: C. Protected areas like national parks
Explanation: They preserve ecosystems and prevent human interference.

Q25. The term "biopiracy" refers to:

A. Using software illegally
B. Exploiting natural resources
C. Unauthorized use of biological resources and traditional knowledge
D. Illegal poaching of animals

Answer: C. Unauthorized use of biological resources and traditional knowledge
Explanation: Biopiracy exploits native communities without benefits or permission.

Q26. Assertion (A): India is one of the 12 megadiversity countries of the world.

Reason (R): It has over 45% of all known species.

A. Both A and R are true, and R is the correct explanation of A
B. Both A and R are true, but R is not the correct explanation of A
C. A is true, but R is false
D. Both A and R are false

Answer: C. A is true, but R is false
Explanation: India is a megadiverse country but holds ~2.4% of global species, not 45%.

Q27. Which of the following is not an example of in-situ conservation?

A. National Park
B. Sacred Grove
C. Botanical Garden
D. Wildlife Sanctuary

Answer: C. Botanical Garden
Explanation: Botanical gardens are examples of ex-situ conservation.

Q28. Which of the following is used for long-term storage of germplasm?

A. Zoo
B. Gene bank
C. National park

D. Aquarium

Answer: B. Gene bank
Explanation: Gene banks preserve genetic material through cryopreservation.

Q29. Statement I: Species-area relationship was given by Alexander von Humboldt.

Statement II: The relationship is logarithmic.

A. Both statements are true
B. Only I is true
C. Only II is true
D. Both are false

Answer: A. Both statements are true
Explanation: The species-area curve shows a logarithmic increase in species with area.

Q30. In situ conservation includes all except:

A. Biosphere reserves
B. Gene banks
C. Wildlife sanctuaries
D. National parks

Answer: B. Gene banks
Explanation: Gene banks are off-site (ex-situ) conservation methods.

Q31. Which of the following is an ex-situ conservation strategy?

A. Wildlife Sanctuary
B. Sacred Grove
C. Cryopreservation
D. Biosphere Reserve

Answer: C. Cryopreservation
Explanation: Cryopreservation is the technique of preserving genetic material at very low temperatures outside their natural habitat.

Q32. The species-area relationship is expressed as:

A. S = aA + z
B. S = aA^z
C. S = a/zA
D. S = A/a^z

Answer: B. S = aA^z
Explanation: This mathematical expression describes how species richness (S) increases with area (A). ‘a’ and ‘z’ are constants.

Q33. Which of the following statements about biodiversity is incorrect?

A. It boosts ecosystem productivity.
B. It provides aesthetic and cultural benefits.
C. It reduces ecosystem stability.
D. It helps in ecosystem services.

Answer: C. It reduces ecosystem stability
Explanation: Biodiversity increases ecosystem stability by allowing systems to recover from disturbances.

Q34. Match the conservation strategy with its example:

Column I Column II

A. In-situ conservation 1. National park
B. Ex-situ conservation 2. Zoological park
C. Sacred grove 3. Cultural in-situ site

Options:
A. A-1, B-2, C-3
B. A-2, B-1, C-3
C. A-1, B-3, C-2
D. A-3, B-1, C-2

Answer: A. A-1, B-2, C-3
Explanation: National parks are in-situ, zoological parks are ex-situ, and sacred groves are traditional community-conserved in-situ spots.

Q35. Assertion (A): Biodiversity acts as a buffer against environmental fluctuations.

Reason (R): Genetically uniform populations are more resilient to changes.

A. Both A and R are true, and R is the correct explanation
B. Both A and R are true, but R is not the correct explanation
C. A is true, but R is false
D. Both A and R are false

Answer: C. A is true, but R is false
Explanation: Genetically diverse, not uniform, populations adapt better to environmental stress.

Q36. Which region in India is considered a biodiversity hotspot?

A. Indo-Gangetic plains
B. Western Ghats
C. Rajasthan Desert
D. Deccan Plateau

Answer: B. Western Ghats
Explanation: Western Ghats is a recognized global biodiversity hotspot rich in endemic species.

Q37. The Amazon rainforest contributes to:

A. 10% of global oxygen
B. 20% of global oxygen
C. 5% of global oxygen
D. 50% of global oxygen

Answer: B. 20% of global oxygen
Explanation: The Amazon is often called the "lungs of the planet" for this reason.

Q38. Which is not a threat to biodiversity?

A. Habitat loss
B. Pollution

C. Over-exploitation
D. Polyploidy

Answer: D. Polyploidy
Explanation: Polyploidy is a genetic condition; it is not a direct threat to biodiversity.

Q39. According to the IUCN, a species not found in the wild but present in captivity is called:

A. Extinct
B. Extinct in the wild
C. Vulnerable
D. Endangered

Answer: B. Extinct in the wild
Explanation: Such species are only alive in zoos or botanical gardens.

Q40. Assertion (A): Species diversity is greatest in the tropics.

Reason (R): Tropical environments are more stable, less seasonal, and receive consistent sunlight and rainfall.

A. Both A and R are true, and R is the correct explanation
B. Both A and R are true, but R is not the correct explanation
C. A is true, but R is false
D. Both A and R are false

Answer: A. Both A and R are true, and R is the correct explanation
Explanation: The tropical climate allows more time and resources for species to evolve and coexist.

Q41. Which is the most stable and productive ecosystem?

A. Desert
B. Ocean
C. Grassland
D. Tropical rainforest

Answer: D. Tropical rainforest
Explanation: Due to high species richness, high rainfall, and productivity.

Q42. Which of the following ecosystem services are provided by biodiversity?

A. Nutrient cycling
B. Climate regulation
C. Pollination
D. All of the above

Answer: D. All of the above
Explanation: Biodiversity supports key ecosystem services essential for life.

Q43. The Red Data Book is maintained by:

A. WHO
B. UNESCO
C. IUCN
D. UNEP

Answer: C. IUCN
Explanation: The IUCN publishes the Red List of Threatened Species globally.

Q44. Which of the following is not a criteria for a biodiversity hotspot?

A. High level of endemic species
B. At least 1,500 vascular plants as endemics
C. More than 50% of its original vegetation must remain
D. It must have lost at least 70% of its original habitat

Answer: C. More than 50% of its original vegetation must remain
Explanation: A hotspot must have lost at least 70% of its natural vegetation.

Q45. Statement I: More biodiversity leads to better ecosystem resilience.

Statement II: Species diversity affects the productivity and stability of an ecosystem.

A. Both statements are correct
B. Only statement I is correct
C. Only statement II is correct

D. Both statements are incorrect

Answer: A. Both statements are correct
Explanation: Biodiversity ensures resource redundancy and functional stability.