

CUET BIOLOGY TEST SERIES

CHAPTER : EVOLUTION

Maximum Marks : 150

Time : 30 Minutes

1. According to the Big Bang theory, as the universe expanded and its temperature dropped, which gases were formed sometime later?

- A. Oxygen and Carbon dioxide B. Hydrogen and Helium
- C. Methane and Ammonia D. Ozone and Nitrogen

2. On early Earth, water vapour, methane, carbon dioxide, and ammonia were released from which source to cover the surface ?

- A. Meteorite bombardment
- B. Volcanic eruptions only
- C. Molten mass covering the surface
- D. Condensing clouds

3. In S.L. Miller's landmark 1953 experiment, electric discharge was created in a closed flask at 800°C containing which gas mixture ?

- A. CH₄, H₂, NH₃ and water vapour
- B. CH₄, O₂, NH₃, and water vapour
- C. CO₂, H₂, NH₃, and nitrogen
- D. CH₄, O₂, H₂O, and carbon dioxide

4. Louis Pasteur disproved the theory of spontaneous generation by showing that living organisms did not arise in pre-sterilised flasks containing:

- A. Decaying straw B. Rotten mud
- C. Killed yeast D. Fruit juices

5. Non-cellular forms of life first originated around 3 billion years ago, whereas the first cellular forms of life originated around:

A. 4.5 billion years ago

B. 2000 million years ago

C. 500 million years ago

D. 65 million years ago

6. How many of the following statements regarding the Theory of Special Creation are correct?

i. All living organisms seen today were created as such.

ii. Diversity was always the same since creation and will remain the same in the future.

iii. Earth is about 4000 years old.

iv. Life originated in a reducing atmosphere through chemical evolution.

A. One

B. Two

C. Three

D. Four

7. Charles Darwin formulated his ideas on evolution and natural selection during a sea voyage on which sail ship?

A. H.M.S. Beagle

B. H.M.S. Challenger

C. H.M.S. Discovery

D. H.M.S. Victory

8. Homologous structures perform different functions but share a similar anatomical bone pattern (humerus, radius, ulna, carpals, metacarpals, phalanges). Which group illustrates this?

A. Wings of butterfly and wings of birds

B. Forelimbs of whale, bat, cheetah, and human

C. Eye of octopus and eye of mammals

D. Sweet potato and potato

9. Homology indicates divergent evolution and common ancestry. Which pair represents homology in plants?

A. Sweet potato and potato

B. Thorns of Bougainvillea and tendrils of Cucurbita

C. Flippers of penguins and dolphins

D. Wings of butterfly and birds

10. Analogous structures are a result of convergent evolution where different structures evolve for the same function. Which pair is an example of analogy?

A. Forelimbs of cheetah and human

B. Vertebrate hearts and brains

C. Eye of octopus and eye of mammals

D. Thorns of Bougainvillea and tendrils of Cucurbita

11. How many of the following statements regarding Industrial Melanism in England are correct?

i. Before industrialisation (1850s), white-winged moths were more abundant on trees.

ii. Post-industrialisation (1920), dark-winged (melanised) moths became more abundant in industrial areas.

iii. Lichens, which cover tree trunks in unpolluted areas, grow abundantly in polluted industrial cities.

iv. In a mixed population, no variant is completely wiped out.

A. One

B. Two

C. Three

D. Four

12. The appearance of drug-resistant microbes and herbicide-resistant weeds on a short time scale of months or years is an example of evolution by:

A. Saltation

B. Anthropogenic action

C. Adaptive radiation

D. Special creation

13. The process of evolution of different species in a given geographical area starting from a point and radiating to other habitats is termed adaptive radiation. The prime example studied by Darwin was:

- A. Australian marsupials**
- B. Darwin's Finches in Galapagos Islands**
- C. Industrial moths in England**
- D. Placental wolf in Australia**

14. In Australia, adaptive radiation of marsupials produced forms corresponding to placental mammals. Which placental mammal corresponds to the Tasmanian wolf (marsupial)?

- A. Placental wolf**
- B. Lemur**
- C. Anteater**
- D. Bobcat**

15. What are the two key concepts of the Darwinian Theory of Evolution?

- A. Inheritance of acquired characters and Use/disuse of organs**
- B. Branching descent and Natural selection**
- C. Saltation and Single-step mutations**
- D. Genetic drift and Founder effect**

16. Lamarck proposed that evolution occurred driven by the use and disuse of organs, citing which classic example?

- A. Beak shapes in Darwin's finches**
- B. Elongation of necks in Giraffes**
- C. Industrial melanism in peppered moths**
- D. Bipedal movement in Homo habilis**

17. Hugo de Vries proposed the Mutation Theory of evolution based on his experimental work on which organism?

- A. Garden pea (*Pisum sativum*)**
- B. Evening primrose (*Oenothera lamarckiana*)**

C. Snapdragon (*Antirrhinum*)

D. Fruit fly (*Drosophila melanogaster*)

18. How many of the following statements correctly contrast Darwinian variations with Hugo de Vriesian mutations?

- i. Darwinian variations are small and directional.
- ii. De Vriesian mutations are random and directionless.
- iii. De Vries believed single-step large mutations cause speciation (saltation).
- iv. Darwin believed evolution was gradual.

A. One

B. Two

C. Three

D. Four

19. In the Hardy-Weinberg algebraic equation ($p^2 + 2pq + q^2 = 1$), the term $2pq$ represents the frequency of:

A. Homozygous dominant individuals **B. Homozygous recessive individuals**

C. Heterozygous individuals

D. Total allele pool

20. How many factors are known to affect Hardy-Weinberg equilibrium in a population?

A. Three

B. Four

C. Five

D. Six

21. When a change in allele frequency occurs by chance in a new sample of a population such that they become a different species, the original drifted population is called:

A. Mutants

B. Founders

C. Hybrids

D. Flocs

22. Natural selection can lead to different outcomes on a character distribution curve. When more individuals acquire the mean character value, it results in

A. Directional change

B. Disruptive change

C. Stabilisation

D. Saltation

23. According to the geological evolutionary timeline, jawless fish probably evolved around:

- A. 2000 mya B. 500 mya C. 350 mya D. 320 mya

24. In 1938, a fish caught in South Africa that was considered an ancestor of the first amphibians was identified as a:

- A. Jawless fish B. Coelacanth C. Ichthyosaur D. Sea weed

25. Land reptiles that went back into water to evolve into fish-like reptiles around 200 mya were:

- A. Tyrannosaurus rex B. Ichthyosaurs
C. Pteridophytes D. Coelacanth

26. The largest dinosaur, standing about 20 feet in height with fearsome dagger-like teeth, was:

- A. Ichthyosaur B. Tyrannosaurus rex
C. Brachiosaurus D. Triceratops

27. Dinosaurs suddenly disappeared from the Earth about how many million years ago?

- A. 200 mya B. 350 mya C. 65 mya D. 15 mya

28. About 15 mya, primates called Dryopithecus and Ramapithecus existed. Which statement accurately distinguishes them?

- A. Dryopithecus was more man-like, whereas Ramapithecus was more ape-like.
B. Ramapithecus was more man-like, whereas Dryopithecus was more ape-like.
C. Both were bipedal hominids with a brain capacity of 1400cc.
D. Both lived in East Asian caves and painted on rock walls.

29. The first human-like hominid was Homo habilis . What was its brain capacity and probable dietary habit?

A. 1400cc; ate meat

B. 900cc; ate meat

C. 650–800cc; probably did not eat meat

D. 400cc; ate fish

30. How many of the following matches regarding human evolutionary history are correct?

i. Homo erectus – Brain capacity around 900cc; probably ate meat

ii. Neanderthal man – Brain capacity 1400cc; used hides and buried their dead

iii. Pre-historic cave art – Developed about 18,000 years ago (e.g., Bhimbetka rock shelter)

iv. Agriculture – Started around 10,000 years ago

A. One

B. Two

C. Three

D. Four
