



BIOLOGY

BOOKS - SANTRA BIOLOGY (BENGALI ENGLISH)

MECHANISM OF EVOLUTION

I Multiple Choice Questions Mcq

1. Presence of two chambered heart and gills in tadpole is example of

A. Neo-Darwinism

B. Gause's law

C. Chargaff's law

D. Biogenetic law

Answer: D



Watch Video Solution

2. Unit of evolution is

A. Population

B. Species

C. Individual

D. Sub-species

Answer: A



Watch Video Solution

3. 'Continuity of germplasm' theory was given by

A. De vries

B. Weismann

C. Darwin

D. Lamrack

Answer: B



Watch Video Solution

4. Theory of inheritance of acquired characters
was given by

A. Wallace

B. Lamarck

C. Darwin

D. de vries

Answer: B



Watch Video Solution

5. 'Philosophe Zoologique' was written by

A. de vries

B. Lamarck

C. mendel

D. Spencer

Answer: B



Watch Video Solution

6. Galapagos islands was visited by

A. wallace

B. Darwin

C. Lamrack

D. de vries

Answer: B



Watch Video Solution

7. Hugo do Vries' contribution is

A. Theory of Natural selection

B. Theory of mutation

C. Law of dominacne

D. Law of segregation

Answer: B



Watch Video Solution

8. Hogo de vries worked on the plant

A. Garden pea/*pisum sativum*

B. sweat pea/*lathyrus odoratus*

C. *primula sinensis*

D. Evening primrose/*Oenothera lamarckiana*

Answer: D



[Watch Video Solution](#)

9. Darwin was most influenced by

- A. Lamarck's theory of acquired characters
- B. Weismann's theory of germplasm
- C. Wallace's theory of origin of species
- D. Essay on population by Malthus

Answer: D



[Watch Video Solution](#)

10. Evolution will not occur if

A. There is no environmental influence

B. Genes are without effect

C. somatic variations are not heritable

D. there is no genetic variations in
individuals of a population

Answer: D



Watch Video Solution

11. Frequency of a gene in a population will increase if the gene is

A. Lethal

B. dominant

C. Recessive

D. Favourably selected

Answer: D



Watch Video Solution

12. Objection to natural selection theory of Darwin is

- A. Vestigial and over-specialised organs
- B. inheritance of acquired characters
- C. Struggle for existence
- D. Continuity of germplasm

Answer: A



Watch Video Solution

13. De Vries theory of mutation is

- A. Opposed to natural selection theory
- B. Not opposed to natural selection theory
- C. opposed to germplasm theory
- D. Opposed to Lamarck's theory

Answer: B



Watch Video Solution

14. Match the following columns and find correct combination

Column I

- a. Darwin
- b. De Vries
- c. Pasteur
- d. Fox

Column II

- p. Mutation Theory
- q. Protobiosis
- r. Origin of Species
- s. Special creation
- t. Swan-Necked Flask Experiment



Watch Video Solution

15. Genetic drift operates in

- A. Small population
- B. Large population

C. island population

D. mendelian population

Answer: A



Watch Video Solution

16. Allopatric speciation is caused by

A. Temporal isolation

B. Adaptive radiation

C. Geographic isolation

D. Reproductive isolation

Answer: C



Watch Video Solution

17. Sympatric speciation is caused by

A. Genetic isolation

B. interbreeding

C. Geographical isolation

D. reproductive isolation

Answer: D



Watch Video Solution

18. Which is related to reproductive isolation ?

- A. Genetic isolation
- B. behavioural isolation
- C. Temporal isolation
- D. All the above

Answer: D



Watch Video Solution

19. What is correct ?

- A. Lamarck's theory -struggle for existence
- B. Biogenetic law -Recapitulation theory
- C. Lamarck's theory -theory of continuity of
germplasm
- D. Darwin's theory -use and disuse of
organs

Answer: B



Watch Video Solution

20. Mutation theory cannot explain

- A. Mimicry
- B. Industrial melanism
- C. connecting link
- D. living fossils

Answer: A



[Watch Video Solution](#)

21. New species develops due to

- A. Isolation and mutation
- B. Competition and mutation
- C. Isolation and variation
- D. Competition and variation

Answer: A



[Watch Video Solution](#)

22. What is true for Lamarck ?

A. American botanist who later became zoologist

B. English naturalist who propounded theory of evolution

C. Polish scientist who gave law of inheritance

D. French scientist who gave 'Inheritance of Acquired characters'

Answer: D



Watch Video Solution

23. Which is most important for speciation ?

- A. Seasonal isolation
- B. Reproductive isolation
- C. Temporal isolation
- D. behavioural isolation

Answer: B



[Watch Video Solution](#)

24. Population is

- A. Individuals of a species
- B. Individuals of a family
- C. Species in a community
- D. All individuals of a community

Answer: A



[Watch Video Solution](#)

25. Variations giving rise to new species are serialised by the process of

- A. law of dynamics
- B. natural selection
- C. Fusion speciation
- D. organic evolution

Answer: B



Watch Video Solution

26. According to Lamarckism long necked Giraffes evolved because

A. nature selected only long necked animals

B. For stretching of necks by short one over many generations

C. Humans preferred long necked animals

D. Mutation

Answer: B





Watch Video Solution

27. Mutation theory based on work over *Oenothera lamarckiana* was given by

A. Morgan

B. Mendel

C. de Vries

D. Muller

Answer: C



Watch Video Solution

28. Isolation lead to

- A. Species differentiation
- B. Evolutionary divergence
- C. Formation of analogous structures
- D. formation of similar traits

Answer: A



Watch Video Solution

29. Theory of use and disuse was propounded by

A. Wallace

B. Lamarck

C. Darwin

D. de Vries

Answer: B



Watch Video Solution

30. The term species was coined by

A. Linnaeus

B. John ray

C. Aristotle

D. Engler

Answer: B



Watch Video Solution

31. Hardy -Weinberg principle explains

- A. Genetic drift
- B. Genetic equilibrium
- C. genetic incompatibility
- D. Genetic load

Answer: B



Watch Video Solution

32. Match the columns

Column I

- (i) Darwin theory
- (ii) Lamarck
- (iii) Hugo de Vries
- (iv) A.S. Oparin

Column II

- (a) Use and disuse
- (b) Origin and species
- (c) Origin of life
- (d) Mutation theory



[Watch Video Solution](#)

33. Which is correct?

A. Natural selection discriminates variations

B. natural selection is essential for evolution

C. Natural selection is not the basis of evolutionary change

D. none of the above

Answer: B



Watch Video Solution

34. Which cannot be explained by Lamarckism

A. Loss of tail by humans

B. Elongation of neck in giraffe

C. weak progeny of a Nobel laureate

D. none of the above

Answer: C



Watch Video Solution

35. Which one is the closest to modern man ?

A. peking Man

B. Cro-magnon Man

C. java man

D. African Man

Answer: B



Watch Video Solution

36. Fossil man having cranial capacity similar to that of modern man was

A. australopithecus

B. java man

C. neanderthal man

D. Peking man

Answer: C



Watch Video Solution

37. Peking man belongs to

A. Palaeocene

B. Pliocene

C. Eocene

D. Pleistocene

Answer: D



Watch Video Solution

38. Peking man was known as

A. Australopithecus

B. Pithecanthropus

C. Homo sapiens

D. sinanthropus

Answer: D



Watch Video Solution

39. which one of the following is closest relative of man

A. sinanthropus

B. Orangutan

C. Gorilla

D. Gibbon

Answer: A



Watch Video Solution

40. Cro magnon man was

A. sanguivorous

B. Fungivorous

C. Carnivorous

D. herbivorous

Answer: C



Watch Video Solution

41. Pithecanthropus was discovered in

A. China

B. Germany

C. Java

D. Africa

Answer: C



[Watch Video Solution](#)

42. Java ape man was discovered by

A. Dubois

B. leakey

C. Cuvier

D. Black

Answer: A



[Watch Video Solution](#)

43. Zoological name of java man is

A. Homo habilis

B. Homo sapiens

C. homo erectus

D. Australopithecus

Answer: C



Watch Video Solution

44. Cranial capacity of Australopithecus is

A. 390-510 cc.

B. 675-719 cc.

C. 1015-1075 cc.

D. 882-897 cc.

Answer: A



Watch Video Solution

45. Modern man differs from apes in

A. Protruding eyes

B. sparse body hair

C. Arms shorter than legs

D. Wearing of clothes

Answer: C



Watch Video Solution

46. Cranial capacity of modern man is

A. 450-650 cc

B. 600-1000 cc

C. 900-1100 cc

D. 1200-1600 cc

Answer: D



Watch Video Solution

47. Neanderthal man lived in

- A. Desert
- B. deep forest
- C. Mountains
- D. Caves

Answer: D



Watch Video Solution

48. Which amongst the following is nearest to modern man

A. java man

B. Australopithecus

C. naeanderthal man

D. homo habilis

Answer: C



Watch Video Solution

49. Man (Homo) originated in

A. Palaeocene

B. Miocene

C. Oligocene

D. Pleistocene

Answer: D



Watch Video Solution

50. which is direct ancestor of homo sapiens

A. Homo erectus

B. h. sapiens

C. ramapithecus

D. Australopithecus

Answer: A



Watch Video Solution

51. which is correct regrading evolution of mankind?

- A. Homo erectus was preceded by homo habilis
- B. Australopithecus lived in Australia
- C. Neanderthal man and Cro-Magnon man lived together
- D. none of the above

Answer: A



Watch Video Solution

52. which is correct?

A. Neanderthal man is direct ancestor of humans

B. homo erectus is direct ancestor of man

C. Cro-magnon man was found in Ethiopla

D. Australopithecus is real ancestor of modern man

Answer: A



Watch Video Solution

53. In homo habilis, Habilis refers to

A. wandering man

B. Modern man

C. Ancient man

D. tool maker

Answer: D



Watch Video Solution

54. which is the most primitive ancestor of man

A. ramapithecus

B. australopitecus

C. homo habilis

D. homo neanderthalensis

Answer: B



Watch Video Solution

55. Which one is connected with human evolution?

A. Binocular vision

B. flat nails

C. Loss of tail

D. Shortening of jaws

Answer: D



Watch Video Solution

56. Cranial capacity of Homo erectus was

A. 500 cc

B. 970 cc

C. 1075 cc

D. 6500cc

Answer: C



Watch Video Solution

57. Common link between apes and man was

A. Ramapithecus

B. dryopithecus

C. homo erectus

D. homo nenderthalensis

Answer: B



Watch Video Solution

58. Which is correct order in evolutionary history of man?

A. peking man → habilis man

→ Neanderthal man → Cro magnon man

B. Peking man → heidelberg man →

Neanderthal man → Cro-mangnon man

C. Peking man → Neanderthal man → Homo

sapiens → heidelberg man

D. Peking man → Homo sapiens →

Neanderthal man → cro-mangnon man

Answer: B



Watch Video Solution

59. which one is closest to modern man ?

A. cro -mangon man

B. neanderthal man

C. Homo erectus

D. Homo habilis

Answer: A



Watch Video Solution

60. Homo erectus erectus is scientific name of

A. java ape man

B. peking man

C. Cro-Magnon man

D. Neanderthal man

Answer: A



Watch Video Solution

61. which one is correct

A. Australopithecus is real ancestor of
man

B. homo erectus is real ancestor of man

C. neanderthal man is direct ancestor
Homo sapiens

D. none of the above

Answer: B



Watch Video Solution

62. Which of the following statement is correct about Cro-magnon man

- A. Cro-magnon man is an advanced stage of man's evolution more advanced than homo erectus
- B. predecessor of homo neanderthalensis
- C. direct ancestor of modern man
- D. Cro -magnon man lived during last ice age

Answer: C



Watch Video Solution

63. Which is correct?

A. Homo erectus is the immediate ancestor
of man

B. Cro-mangon man's fossil has been found
in Ethiopia

C. Australopithecus is the real ancestor of man

D. Cro magnon man is the most recent ancestor of homo sapiens

Answer: A



Watch Video Solution

64. Which one of the following amino acids was not found to be synthesized in Miller's experiment?

A. Alanine

B. Aspartic acid

C. Glutamic acid

D. Glycine

Answer: C



Watch Video Solution

65. A high density of elephant population in an area can result in

A. Mutualism

B. intraspecific competition

C. predation

D. none

Answer: B



Watch Video Solution

66. Plants and animals of Galapagos island resemble most closely to plants and animals of

A. South America

B. North Australia

C. South Africa

D. North America

Answer: A



Watch Video Solution

67. Which one is linked to evolution ?

A. competition

B. variation

C. Extinction

D. Reproduction

Answer: B



Watch Video Solution

68. Among the human ancestors the brain size was more than 1000 cc in

A. Homo neanderthalensis

B. homo habilis

C. ramapithecus

D. None

Answer: A



Watch Video Solution

69. Darwin 's Finches are an excelent example of

A. Broad parasitism

B. Adaptive radiation

C. Connecting links

D. Seasonal migration

Answer: B



Watch Video Solution

70. Which is not darwinian concept ?

A. struggle for existence

B. survival of the fittest

C. variations

D. Natural selection

Answer: B



Watch Video Solution

71. A progressive series of changes in plant and animal life of an area from initial colonization is known as

A. Succession

B. specialisation

C. Evolution

D. selection

Answer: A



Watch Video Solution

72. Point mutation involves

A. Insertion

B. Deletion

C. Duplication

D. Change in single base pair

Answer: D



Watch Video Solution

73. Peripatus is a connecting link between

A. Coelenterata and porifera

B. ctenophora and platyhelminthes

C. Annelida and arthropoda

D. Mollusca and Echinodermata

Answer: C



Watch Video Solution

74. what was the most significant trend in the evolution of modern man from his ancestors

- A. Shortening of jaws
- B. increasing brain capacity
- C. Upright posture

D. Binocular vision

Answer: B



Watch Video Solution

75. The brain capacity of *Homo erectus* was about

A. 900 cc

B. 1400 cc

C. 1600 cc

D. 650 cc

Answer: A



Watch Video Solution

76. Mutation can be induced with

A. IAA

B. Ethylene

C. Gamma radiation

D. Infrared radiation

Answer: C



Watch Video Solution

**If I Choose More Than One Correct Answers For
The Following**

1. Which of the following are the structural mutation of chromosomes?

A. Aneuploidy

B. Duplication

C. Inversion

D. Polyploidy

Answer: B::C



Watch Video Solution

2. The mutations on the basis of number of chromosomes are

A. Duplication

B. Polyploidy

C. Aneuploidy

D. Deletion

Answer: B::C



Watch Video Solution

3. Which of the following mutations are classified on the basis of power of expression?

A. Silent

B. Non-sense

C. Dominant

D. Lethal

Answer: A::B::C



Watch Video Solution

4. Which of the following are transversion mutations

A. C to G

B. A to G

C. C to T

D. G to C

Answer: A::D



Watch Video Solution

5. Which of the following are base analogues?

A. Thyridoxine

B. BrdU

C. Bromo uracil

D. Hypoxanthine

Answer: B::C



Watch Video Solution

6. Which of the following are alkylating agents?

A. BrdU

B. EES

C. MMS

D. NH_2OH

Answer: B::C



Watch Video Solution

7. Mutagens that cause frame shift mutations are

A. Methylene blue

B. Acridine orange

C. Methyl methane sulphonate

D. Proflavin

Answer: B::D



Watch Video Solution

8. Which of the enzymes take part in the repair of double strand break?

A. Exonuclease

B. Ligase

C. rec A protein

D. Primase

Answer: A::B::C



Watch Video Solution

9. These are the ancestors of man

A. Australopithecus

B. Neanderthal man

C. Hippocampus

D. Dryopithecus

Answer: A::B::D



Watch Video Solution

10. Who discovered fossils of Homo habilis?

A. Raymond Dart

B. Mary Leaky

C. Louis Leaky

D. Robert Broom

Answer: B::C



Watch Video Solution

iii Fill In The Blanks

1. Eugene Dubois discovered the fossils of ____



Watch Video Solution

2. ____ is the first evolutionary stage of human evolution.



Watch Video Solution

3. Cro magnon man existed during ____ age.



[Watch Video Solution](#)

4. Alkylated guanine pair with ____.



[Watch Video Solution](#)

5. ____ pairs of hydroxylaminocytosine.



[Watch Video Solution](#)

6. Proflavin and _____ cause frame shift mutation.



Watch Video Solution

7. Bar feature in Drosophila develops due to _____ of the _____ segment of X chromosomes.



Watch Video Solution

8. Inversion including centromere is called ___
inversion

A. barbara McClintock detected the ___
element.

B.

C.

D.

Answer:



Watch Video Solution

9. Barbara McClintock detected the ___ element.



[Watch Video Solution](#)

10. Loss of one homologous pair of chromosomes is called _____.



[Watch Video Solution](#)

iv Mention True Or Flase

1. Mention True or False: EES add ethyl group to 7-N or 6-O position of guanine.



[Watch Video Solution](#)

2. Mention True or False: Hydroxylamine cause alkylation.



[Watch Video Solution](#)

3. Mention True or False: UV rays produce thymine dimers in DNA.



[Watch Video Solution](#)

4. Mention True or False: Cri- du-chat syndrome appears due to duplication of chromosome.



[Watch Video Solution](#)

5. Mention True or False: Inversion not including the centromere is paracentric.



[Watch Video Solution](#)

6. Mention True or False: Monosomy is the loss of a set of chromosomes.



[Watch Video Solution](#)

7. Mention True or False: Robertsonian translocation involved degeneration of chromosomes.



[Watch Video Solution](#)

8. Mention True or False: Exchange of part between both the homologous chromosomes are called reciprocal translocation.



[Watch Video Solution](#)

9. Mention True or False: Deletion of chromosomal part changes ploidy level.



[Watch Video Solution](#)

10. Mention True or False: Movement of alleles from one population to other is called gene flow.



[Watch Video Solution](#)

1. what is the name of translocation due to fission of chromosomes?



[Watch Video Solution](#)

2. The influence of natural selection is measure by which parameter?



[Watch Video Solution](#)

3. Which type of variation is not heritable?



[Watch Video Solution](#)

4. Who first used the term mutation?



[Watch Video Solution](#)

5. Muller produced mutations artificially in which organism?



[Watch Video Solution](#)

6. What did Bateson used for mutations?



[Watch Video Solution](#)

7. de Vries belonged to which country?



[Watch Video Solution](#)

8. Which test organism was used by stadler?



[Watch Video Solution](#)

9. Substitution of adenine to guanine is known as ?



Watch Video Solution

10. Give an example of a base analogue.



Watch Video Solution

11. Give an example of a deaminating agent.



Watch Video Solution

12. Name a potent alkylating agent.



Watch Video Solution

13. Name an agent that can cause frame shift mutation?



Watch Video Solution

14. Name a disease that is resulted due to deletion of chromosome in man .



Watch Video Solution

15. Which type of inversion result in formation of acentric chromosome?



Watch Video Solution

16. Write the full form of TGE.



Watch Video Solution

17. Who first detected transposable element?



Watch Video Solution

18. The condition in which more than two sets of chromosomes are present is called?



Watch Video Solution

19. When was holliday model proposed?



[Watch Video Solution](#)

20. Which enzyme is present in the cell that can join the nicked ends of a chromosome?



[Watch Video Solution](#)

21. The total set of genes present in a population is denoted by which term?



[Watch Video Solution](#)

22. Write the full form of PTC.



[Watch Video Solution](#)

23. Who proposed the theory of macroevolution



[Watch Video Solution](#)

24. Name of the animal having fossorial adaptation.



Watch Video Solution

25. Who wrote the book "Man's place in Nature"?



Watch Video Solution

26. Who is the author of the book "The Descent of Man"?



Watch Video Solution

27. Which fossil was considered as the first stage of human evolution?



Watch Video Solution

28. Who was the immediate ancestor of Cro-magnon (modern man)?



Watch Video Solution

29. Who first discovered the relics of Australopithecus?



Watch Video Solution

30. Which genus of man are thought to have started making tools?



Watch Video Solution

Short Answer Type Questions

1. Define mutation?



Watch Video Solution

2. What do you mean by deletion?



[Watch Video Solution](#)

3. What is meant by inversion mutation?



[Watch Video Solution](#)

4. What is recombination of genes?



[Watch Video Solution](#)

5. What is the main difference between aneuploidy and euploidy?



[Watch Video Solution](#)

6. What is meant by "fitness" in accordance with the view of natural Selection?



[Watch Video Solution](#)

7. What is meant by disruptive selection.?



Watch Video Solution

8. What is a loss of function mutation?



Watch Video Solution

9. What is a silent mutation?



Watch Video Solution

10. What is a missense mutation?



Watch Video Solution

11. What does a non-sense mutation refer to?



Watch Video Solution

12. What is a transversion mutation?



Watch Video Solution

13. what are base analogues?



[Watch Video Solution](#)

14. Give an example of each, alkylating agent and deaminating agent.



[Watch Video Solution](#)

15. what are free radicals?



[Watch Video Solution](#)

16. What do Ac and Ds elements in maize refer to ?



Watch Video Solution

17. what is gene frequency?



Watch Video Solution

18. What is meant by founder effect?



Watch Video Solution

19. what is a deme ?



Watch Video Solution

20. Define genetic drift?



Watch Video Solution

21. What are the three main categories of variations?



[Watch Video Solution](#)

22. Describe any three main types of structural aberrations of chromosomes.



[Watch Video Solution](#)

23. Write an account on directional natural selection with proper example.



[Watch Video Solution](#)

24. What do you mean by meristic and substantive variation?



Watch Video Solution

25. Write the difference between somatogenic and blastogenic variation.



Watch Video Solution

26. How is mutation classified on the basis of mode of origin?



Watch Video Solution

27. What is a frame -shift mutation? Explain with example.



Watch Video Solution

28. Give at least one example of the effect of UV radiation on bases of DNA.



Watch Video Solution

29. why does the frequency of an allele in a population changes?



Watch Video Solution

30. What are the effects observed due to genetic drift?



Watch Video Solution

31. what are the assumptions on which hardy-weinberg equilibrium depends?



Watch Video Solution

32. what were the major trends observed in the evolution of man from apes?



Watch Video Solution

33. What were the important features of Homo erectus?



Watch Video Solution

34. Mention the features and mechanism of adaptive radiation.



Watch Video Solution

35. Describe robertsonian translocation



Watch Video Solution

Long Answer Typ Question

1. Describe the types of mutation based on the type of change.



Watch Video Solution

2. Describe structurally the tautomeric forms of purine and pyrimidine bases and schematically represent the formation of a mutant DNA due to tautomeric shift.



Watch Video Solution

3. Describe the deletion mutation in a chromosome with proper examples.



Watch Video Solution

4. Describe Holliday model for general recombination



Watch Video Solution

5. Describe the double strand break model of recombination.



[Watch Video Solution](#)

6. Prove the applicability of Hardy Weinberg equilibrium in case of multiple alleles for a gene.



[Watch Video Solution](#)

7. Mention in brief the evidences found in Favour of evolution



[Watch Video Solution](#)

8. Give an outline fo the stages of human evolution.



[Watch Video Solution](#)

9. write an account on the cultural evolution of man.



Watch Video Solution