BIOLOGY

BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)

MECHANISM OF EVOLUTION

Check Point 13 1

1. A species as a group of individuals with common evolutionary lineage is a species

concept proposed by

A. George simpson

B. Davis

C. Heywood

D. Ernst mayr

Answer: A

2. in allopatric speciation the initial barrier to gene flow is

A. Behavioural

B. Post-zygotic

C. Geographic

D. Ecological

Answer: C

▶ Watch Video Solution

3. Sympatric speciation develops reproductive isolation without

A. Barrier to mating

B. Geographical barreir

C. Barrier to gene flow

D. Gnetic change

Answer: B

▶ **Watch Video Solution**

4. The name of the experiment performed by lederberg and lederberg is

A. replica plating experiment

B. tissue culture

C. protoplast fusion

D. hybridisation

Answer: A

▶ **Watch Video Solution**

5. In a random mating population in equilibrium, which of the following brings about a change in gene frequency in a non-directional manner?

    A. Mutation

    B. Random drift

    C. Selection

    D. Migration

Answer: B

▶ Watch Video Solution

6. Genetic drift will be effective in

A. island population

B. Mendelian population

C. small population

D. large population

Answer: C

7. Genetic drift occurs when a few individuals of a species colonise an island. This particular phenomenon is known as

A. the bottleneck effect

B. the founder effect

C. assortative mating

D. random mating

Answer: B

▶ Watch Video Solution

8. Stablising selection favours.

    A. both extreme of a trails

    B. intermediate forms a trait

    C. environmental differences

    D. one extreme form over the other extreme form and over intermediate forms of a trait

Answer: B

▶ **Watch Video Solution**

9. All the members of a bird population have the same intermediate green colouration. What type of selection is likely to taking place?

    A. Disruptive

    B. Directional

    C. Stabilising

    D. Natural

Answer: C

▶ **Watch Video Solution**

10. Industrial melanism is an example of

A. drug resistance

B. darkening of skin due to smoke from industries

C. protective resemblance with the surroundings

D. defensive adaptation of skin against ultraviolet radiations

Answer: C

Check Point 13 2

1. which is related to premating reproductive isolation

A. gametic isolation

B. temporal isolation

C. behavioural isolation

D. All of above

Answer: D

▶ **Watch Video Solution**

2. When species mate at different times of the day of year there exist

A. Temporal isolation

B. Mechanical isolation

C. Spatial isolation

D. Gametic isolation

Answer: A

3. A postzygotic isolating mechanism prevents mechanical

A. courtship

B. copulation

C. fertilisation

D. developmwnt,survival or reproduction of

the hybrid

Answer: D

▶ **Watch Video Solution**

4. Mule is an example of

A. hybrid breakdown

B. hybrid sterility

C. hybrid inviability

D. None of the above

Answer: B

▶ **Watch Video Solution**

---

5. Hybrid breakdown is failure of :

A. f1 breakdown

B. f2 breakdown

C. hybrid inviability

D. None of the above

Answer: B

6. Which of the following factors changes Hardy-Weinberg equilibrium?

A. Mutation

B. Selection

C. Gene flow

D. All of above

Answer: D

7. In Hardy-Weinberg equation, the percentage

of heterozygous individual is

A. p^2

B. p+q

C. q

D. 2pq

Answer: D

8. Which one is used for knowing weather or not a populationis evolving?

    A. Degree of isolation

    B. Genetic drift

    C. Hardy-Weinberg equation

D. Proportion between aquired variation and genetic variation

Answer: C

▶ **Watch Video Solution**

9. Hardy-Weinberg used the binomial expression $p^2 + 2pq + q^2$ to calculate the genotype and allele frequency of a populaiton. In this equation p is

▶ **View Text Solution**

10. Human body groups A,B,AB and O are examples of

    A. gradualism

    B. cline

    C. gradient of diploidy

    D. polymorphism

Answer: D

▶ **Watch Video Solution**

1. Unit of evolution is

A. individual

B. social group

C. popolation

D. species

Answer: C

▶ **Watch Video Solution**

2. The total collection genes, at any time , in a unit of evolution is called the

    A. genotype

    B. demotype

    C. multiple allele group

    D. gene pool

Answer: D

▶ **Watch Video Solution**

3. $(p+q)^2 = p^2 + 2pq + q^2 = 1$ represents

an equation used in

A. population genetics

B. Mendelian genetics

C. biomwtrics

D. molecular genetics

Answer: A

▶ **Watch Video Solution**

4. Which type of selection is industrial melansim observed in month, Biston betularia?

A. Stabilising

B. Disructive

C. Directional

D. Artificial

Answer: C

▶ Watch Video Solution

5. Origin of new species and genera is

    A. coevolution

    B. microevolution

    C. macroevolution

    D. megaevolution

Answer: C

▶ **Watch Video Solution**

6. What are useful for natural selection?

A. Recombination

B. Induced mutations

C. Preadaptive mutations

D. Post-adaptive variations

Answer: C

▶ **Watch Video Solution**

7. The forces that change the allele and genotype frequencies of a population are

A. Recombination

B. evolutionary agents

C. aquired traits

D. adaptation

Answer: B

▶ **Watch Video Solution**

8. Genetric drift is a .... process

A. random

B. directed

C. selection-deiven

D. coevolutionary

Answer: A

▶ **Watch Video Solution**

9. Accidental fluctuation in alleles of small population is termed as

A. demes

B. genetic drift

C. genetic shift

D. genetic thrift

Answer: B

 Watch Video Solution

10. Adaptation of a species is its

A. metamorphosis

B. ecdysis

C. acquired character

D. heredity character

Answer: D

▶ **Watch Video Solution**

11. A new mutation spreads from one population, to another by mean of

A. removed bottlenecks

B. emigrants and immigrants

C. mutatioan presures

D. cros overs

Answer: B

▶ Watch Video Solution

12. Rapid decline in the population , due to high mortality rate is called

    A. population explosion

    B. population crash

    C. population density

    D. All of above

Answer: B

▶ **Watch Video Solution**

13. A plant population that reproduces by self pollination is an extreme example pf

    A. the bottleneck effect

    B. the founder effect

    C. rapid gene flow

    D. assortative mative

Answer: D

▶ **Watch Video Solution**

14. Which of the following process is/are adaptive?

A. genetic drift

B. mutation

C. Gene flow

D. None of the above

Answer: B

▶ View Text Solution

15. A suffling of alliles like a deck of cards leads to different 'hands', known as

A. genotypes

B. genes

C. flushes

D. fossils

Answer: A

▶ View Text Solution

16. The relative fitness of different types within a population is probably

A. unchanging

B. permanent

C. changeable

D. both (a) and (C)

Answer: C

▶ View Text Solution

17. In which condition the gene ratio remains constant for any species ?

A. random mating

B. gene flow

C. mutation

D. sexual selection

Answer: A

18. A deleterious allele decreases more rapidly in frequency, if it is

A. recently mutated

B. rare

C. dominant

D. recessive

Answer: D

▶ View Text Solution

19. A beneficial allele increases rapidly in frequency, if it is

    A. recently mutated

    B. rare

    C. dominant

    D. recessive

Answer: C

▶ **Watch Video Solution**

20. A single genotype can give rise to a range of phenotypes, called the genotypes's

A. norm of reaction

B. fitness set

C. adptive complex

D. supergene

Answer: A

▶ View Text Solution

21. Which of these is a premating isolating mechanism?

A. hybrid sterility

B. temporal isolation

C. hybrid isolation

D. both (a) and (C)

Answer: D

22. Male moths recorgnise female moths of their species by sencing pferomones. It is an example of

A. habitat isolation

B. behavioural isolation

C. mechanical isolation

D. gamete isolation

Answer: B

▶ View Text Solution

23. Members of a biological species are poteincially able to

    A. compete

    B. express all the same genes

    C. introgress

    D. interbreed

Answer: D

24. A prezygotic isolating mechanism prevents successful

    A. gamete production

    B. fertilisation

    C. zygote development

    D. reproduction of hybrids

Answer: B

▶ **Watch Video Solution**

25. Which of the following is used to determine whether two populations belong to the same species?

A. Ability to interbreed

B. Colour

C. Size range

D. Habitat choice

Answer: A

▶ **Watch Video Solution**

26. Speciation as a smallseries of changes thataccumulate over time, ia known as

A. punchuated eequilibrium

B. cladistics

C. gradualism

D. stasis

Answer: C

 View Text Solution

27. Sympatric speciation occurs most commonly in

    A. mammals

    B. fishes

    C. plants

    D. birds

Answer: C

▶ **View Text Solution**

28. Isolated population with the potential for rapid speciation are

A. small in number

B. large in number

C. dimorphic

D. inbreed

Answer: A

▶ View Text Solution

29. Which one of the following is an example of discontinuos variation in mans?

A. Blood group

B. Height

C. Body mass

D. Intellligence

Answer: A

▶ View Text Solution

30. The reduction in pollution after 1956 is now correlated with

A. reverse evolution

B. progressive evolution

C. megaevolution

D. microevolution

Answer: A

31. Appearance of antibiotic-resistant bacteria is an example of

A. adaptive radiation

B. transduction

C. pre-existing variation the population

D. divergent evolution

Answer: C

▶ **Watch Video Solution**

32. Evolution of life shows that life forms had a trend of moving from

    A. land to water

    B. dryland to wetland

    C. freshwater to sea water

    D. water to land

Answer: D

▶ **Watch Video Solution**

33. When populations of a plant species are located adjacent to one another because of abrupt changes in soil condotions , they are called

    A. allopolypoid

    B. autopolyploid

    C. sympatric

    D. parapatric

Answer: D

34. Study of frequency of different genes and trends of their change is

A. gene pool

B. population genetics

C. gene flow

D. Hardy-Weinbers genetic equilibrium

Answer: B

35. Who performed an experiment to know the genetic basis of adaptations?

A. kettlewell

B. lederberg and lederberg

C. zinder and lederberg

D. Hardy and weinberg

Answer: B

▶ View Text Solution

36. Which one is the raw material for evolutionary

   A. Reshuffling of gene combinations

   B. Variability of gene pool

   C. Unrestricted gene flow

   D. Balancing selection

Answer: B

▶ **Watch Video Solution**

37. Balancing selection is connected with the successful reproduction of

A. homozygous resessive

B. homozygous dominants

C. heterozygous individuals

D. All of above

Answer: C

▶ View Text Solution

38. Random genetic drift in a population probably result from

A. highly genetically variable individuals

B. interbreeding within a population

C. constant low mutuation rate

D. large population size

Answer: B

Watch Video Solution

39. The variations are of which following kinds?

A. Somatic and germinal

B. Continuos and discontinuos

C. Meristic and substantive

D. All of above

Answer: D

▶ **Watch Video Solution**

40. The possibilities of of hereditary and evolutionary changes are greatest in species, which are reproduced by

A. fission

B. budding

C. asexual means

D. sexual means

Answer: D

▶ **Watch Video Solution**

41. Genetic drift, changes in allilic frequency due to change factors, occurs in populations that are very

A. isolated

B. small in number

C. mobile

D. closely adapted to local environments

Answer: B

▶ **Watch Video Solution**

42. Of the following, which consistently pushes populations toward a better 'fit' with their environment?

A. Non-random mating

B. Genetic drift

C. natural selection

D. gene flow

Answer: C

43. Which of the following can contribute to genetic drift?

A. small population size

B. Small population bottleneck

C. The founder effect

D. All of above

Answer: D

▶ **Watch Video Solution**

44. Natural selection acts on an organism's

A. dominant allilis

B. recessive, homozygous alleles

C. phenotype

D. combined genotype

Answer: D

▶ View Text Solution

45. Interdependent genea, with relative functions, form

    A. a coadapted gene complex

    B. an inversion

    C. a fitness set

    D. suoer mutation

Answer: A

▶ **View Text Solution**

46. Population of dark biston betularia increased greatly in england from 1848-1898. The selective agent causing the change was

A. tree bark

B. birds

C. human beings

D. toxin from smoke

Answer: A

▶ Watch Video Solution

47. Two individuals from different populations attempt to mate but are unable to successfully coordinate the mating dance. This an example of a(n)............... Isolating mechanism

A. ecological

B. temporal isolation

C. behavvioural

D. mechanical

Answer: C

▶ **Watch Video Solution**

48. Population of khaibab squirrels on north rim of the grnd canyon do not mate with the populations on south rim. They are isolated by a

A. sympatric barrier

B. autopatirc barrier

C. gepgraphic barrier

D. genetic barrier

Answer: C

49. The kaibib squirrels, described before, are the example of

A. allopatric populations

B. parapatric populations

C. sympatric populations

D. aotopatric populations

Answer: A

▶

50. Most often the factor that initiates the speciation of two populations is

A. geographic seperation

B. inability of gametes to fuse

C. different courtship behaviours

D. different copulatory organs

Answer: A

51. In galapagos finches, adaptive radiations occurred............. Islands, while allopatric speciation occurred.............islands.

    A. within, on large

    B. between,within

    C. on large, no small

    D. within, between

Answer: D

▶ **Watch Video Solution**

52. Since in the pleistocence ice age,deserts have gradually formed in south-western united states. As the lakes and rivers of these areas shrunk into isolated springs, the fishes developed strong potential for

A. introgression

B. speciation

C. autopolyploidy

D. allopolyploidy

Answer: B

53. Two organisms of different species mate and produce an offspring cannot mate with its siblings, nor with the members of either parental species. This is an example of

 A. hybrid infertility

 B. gametic isolation

 C. behavioural isolation

D. ecological isolation

Answer: A

▶ **Watch Video Solution**

54. Which of the following cause phenotypic variation among the organisms of the same genptype?

A. Continuos variation within the species

B. Different varieties of the same species

C. Different sexes

D. Exposure to different environments

Answer: D

▶ **Watch Video Solution**

55. Which of the following increases the number of different alleles in a population

A. crossing over

B. Random fusion of gametes

C. Gene mutation

D. Reassorment of chromosomes in meiosis

Answer: C

▶ **Watch Video Solution**

56. Natural selection is best defined as

occuring when the environment causes

A. differential success in reproduction

B. differencial mortality

C. assortative mating

D. a reduced gene pool

Answer: A

⊙ **View Text Solution**

57. Miceoevolution can be measured by compairing observed allelic frequencies with those predicted by

A. change

B. the hardy-weinberd equilibrium

C. mendelian ratios

D. all known environmental factors

Answer: B

▶ **Watch Video Solution**

58. In diploid organisms, veriations is not subjected to natural selection because it is present in the form of

A. somatic mutations

B. asexual differences

C. recessive alleles

D. gametic alleles

Answer: C

▶ **View Text Solution**

---

59. People who carry an allele for normal haemoglobin and an allele for sickle cell, are resistant to maleria. They are examples of

A. heterozygote advantage

B. Extreme diploidy

C. outbreeding

D. recessive superiority

Answer: A

▶ **View Text Solution**

60. What is the consequence of genetic drift?

A. Improvement of thw population

B. Increase in strength of a population

C. Decrease in IQ of a population

D. Unpredictable effects on characters in a population

Answer: D

▶ **Watch Video Solution**

61. Which one of the following is used for knowing whether or not a population is evolving?

A. Hardy-weunberg equation

B. Genetic drift

C. Proportion between aquired variations

D. Degree of evolution

Answer: A

▶ **View Text Solution**

---

62. Many closely related species of marine invertebrates exist on either side of the isthmus of panama

A. premating isolation

B. isolation by ditance

C. postmating isolation

D.

Answer: D

▶ **View Text Solution**

63. Directional selection usuallt acts to favour

A. both extreme fprms of a trail

B. intermediate forms of a trait

C. environmental differences

D. one extreme form over the other extreme form and over intermediate forms of a trait

Answer: D

▶ **Watch Video Solution**

64. Disructive selective usually acts to favour

A. both extreme forms of a trait

B. intermediate forms of a trait

C. environmental differences

D. one extreme form over the other extreme form and over intermediate forms of a trait

Answer: A

65. Under the biological species concept, the main criterion for identifying a species is

A. anatomical distinctiveness

B. behavioural distinctiveness

C. Geographic isolation

D. reproductive isolation

Answer: D

▶ Watch Video Solution

66. In terms of changes in gene frequencies, founder events result in

A. gradual accumulation of many small changes

B. large rapid changes

C. polyploidy

D. hybridisation

Answer: B

▶ View Text Solution

67. After the demise of the dinosaurs mammals evovlved rapidly into many new forms because of

A. the founder effect

B. a genetic bottleneck

C. adaptive radiation

D. geological time

Answer: C

▶ View Text Solution

68. The formation of a new species through changes in a single lineage is known as

    A. anagenesis or phylic evolution

    B. cladogenesis or divergent evolution

    C. converegent evolution

    D. allopatry

Answer: A

▶ **Watch Video Solution**

69. The formation of two species from one ancestral species is known as

A. anagencsis or phylic evolution

B. cladogenesis or divergent evolution

C. converegent evolution

D. allopatry

Answer: B

▶ **Watch Video Solution**

70. In a random mating population in an equilibrium which one of the following brings about a change in gene frequency in a non - directional manner?

A. Mutation

B. Random drift

C. Selection

D. Migration

Answer: B

View Text Solution

71. Very similar species of fish release their eggs and sperms into the same water but the spermof one species cannot penetrate the eggs of another spicies. This is an example of prezygotic isolation by

A. ecological isolation

B. behavioural isolation

C. mechanical isolation

D. Gametic isolation

Answer: D

72. Two species pines pinus radiata and muricata occur sympatrically in california and are capable of forming hybrids. They do not interbreed because one release pollen in february and the other in april. They are the example of orezygotic isolation by

A. ecological isolation

B. temporal isolation

C. gametic isolation

D. geographic isolation

Answer: B

▶ **Watch Video Solution**

73. The genus-Rhagoletis is a group of small, brightly coloured flies.Each species in the genus feeds, during it's larval stagr, on the fruit of just one plant faimily, and when the

larvae hatch into adults, they court and mate on the same fruit. The species that feed on fruits from different plant faimilies are reproductively isolated by

A. ecological isolation

B. temporal isolation

C. behavioural isolation

D. mechanical isolation

Answer: A

 View Text Solution

74. A horse has a karyotype 64 chromosomes and a donkey har a karyotype of 62 chromosomes. The hybrid offspring of a horse-donkey cross is a mule, which has a 63 chromosomes. A mule is sterile because it cannot successfully

    A. court both mules

    B. copulate with mules

    C. form gametes

    D. complete development of the zygote

Answer: C

75. When certain numbers of a population reproduce and paas on their genes to the next generation and the allele frequency of the next generations Gene pool are markedly different from those of the previous generation,then it is known as

A. non-random mating

B. genetic drift

C. selection

D. Gene flow

Answer: C

▶ **View Text Solution**

76. Viviparity is considered to be more evolved

because

A. the young ones left on their own

B. the young ones are protected by a thick

shell

C. the young ones are protected inside the

mother's bodyand looked after they are

born leading to more chances of survival

D. the embro takes a long time to develop

Answer: C

▶ Watch Video Solution

77. When to related population that have been geographically isolated come back into contact, retain their reproductive isolation, and complete for the resources, they may be a divergence in traits known as

A. character convergence

B. sibling speciation

C. phyletic evolution

D. character displacement

Answer: D

78. Which of the following statement is supported by change in peppered months?

A. Natural selection acts on favourable variations, which appear among individuals

B. Environment has a role in evolution

C. Acquired characters during life of an individuals are inherited

D. Heritable variations arise due to the changes in the Gene complex

Answer: A

▶ **Watch Video Solution**

79. Most of the 700 species of fruit flies found in the Hawaiian archipelago, are each restricted to a single island. One hypothesis to explain this pattern is that each species diverged after a small number of flies had

colonised a new island. This mechanism is called

A. sexual selection

B. genetic equilibrium

C. disruptive selection

D. the founder effect

Answer: D

▶ **Watch Video Solution**

80. Of the following possiblities, the best way to estimate an organism's evolutionary fitness, is to measure the

A. size of its offspring

B. number of eggs it produces

C. number of eggs it produces over its lifetime

D. number of offsprings it produces over its lifetime that survive to breed

Answer: D

81. A potential danger to a population that has been greatly reduced in number is the

    A. loss of genetic variability

    B. tendency towards assortativve mating

    C. reduced Gene flow

    D. Hardy-weinberg disequilibrium

Answer: A

82. If a new allele suddenly becomes very abudant in a population, most likely it is

    A. mutating rapidly

    B. flowing with emigrants

    C. strongly selected for

    D. a product of assortative mating

Answer: C

83. The presence of temporary gills in the embryos of snakes,birds and man indicates that

    A. the lungs evolved from gills

    B. these embryos need gills for breething

    C. ancestors of these animals had gills at one stage of evolution

D. medium, in which these embryos

develop resembles oxygen rich water

Answer: C

▶ View Text Solution

84. Many hybrids are sterile because their

chromosomes do not pair up correctly during

meiosis. Why are not polypoid plants sterile?

A. They backcross to the parental generation

B. Most are triploid

C. They cross polinate

D. They self fertilise, using theri diploid gametes

Answer: D

▶ **View Text Solution**

85. In many species of fireflies, males flash to attract females. Each species has a different flashing pattern. This is probably an example of :

A. ecological isolation

B. temporal isolation

C. goegraphical isolation

D. premating isolation

Answer: D

86. Two species of garter snakes occure In the same geographic areas, but one lives only in water and the other manly on land. Consequently they do not encounter one another and so, do not interbreed. This is an example of prezygotic isolation caused by

A. ecological isolation

B. temporal isolation

C. behavioural isolation

D. mechanical isolation

Answer: A

87. Male fireflies attract mates by blinking their lights, each species does so, in a characterstic pattern recognized only by females of that species. This is an example of premating isolation by

A. ecological isolation

B. temporal isolation

C. behavioural isolation

D. mechanical isolation

Answer: C

⏵ **Watch Video Solution**

88. Different species of dragon flies do not
mate with each other because the males of
each species have appendages that can clasp
and hold , for copulation only females of their

only females of their own species. This is an example of

A. ecological isolation

B. temporal isolation

C. behavioural isolation

D. mechanical isolation

Answer: D

▶ **Watch Video Solution**

89. Eastern and Western meadowlarks look almost the same and inhabit the same areas of prairie. They recognise mates of their own species by distinctive courtship songs. This is an example of prezygotic isolation by

   A. ecological isolation

   B. behavioural isolation

   C. mechanical isolation

   D. gametic isolation

Answer: B

90. A change in the relative abandance of an allele (the allelic frequency) within a population over a succession of generations is called

A. microevolution or adaptive evolution

B. macroevolution or speciation

C. coevolt

D. phylogenetic evolution

Answer: A

91. Imagine a population of 100 snails in which shell color is controlled by two alleles, B(black) and b (yellow). What is the number of loci for the Gene for shell colour in this population?

A. 3

B. 60

C. 100

D. 200

Answer: D

> ▶ **View Text Solution**

92. In the snail population described above, 20

of snails are yellow(b/b) and 80 are

black(B/Bor b/b). Of the 80 black snails 30 are

homozygous and 50 are heterozygous. How

many of the loci for this Gene are occupied by

the B allele?

A. 80

B. 90

C. 100

D. 110

Answer: A

▶ View Text Solution

93. In the snail population described above, what is the allic frequency of B?

A. 0.45

B. 0.55

C. 0.75

D. 0.8

Answer: B

▶ **View Text Solution**

---

94. Assuming sexual reproduction with

random mating, no Gene flow and no selection

what will be the frequency of yellow snails in

the next generation of the population described above (Q99)?

A. 0.2

B. 0.3

C. 0.45

D. 0.55

Answer: A

⊳ View Text Solution

95. For the M-N blood group system, the frequencies of M and N alleles are 0.7 and 0.3, respectively. The expanded frequency of M-N group bearing organisms is likely to be

A. 0.42

B. 0.49

C. 0.09

D. 0.5

Answer: A

96. What will be the frequency of the b allele in the next generation of the snail population described above ?

    A. 0.2

    B. 0.3

    C. 0.45

    D. 0.55

Answer: C

97. You are studying leaf size in a population of plants. The second session is particularly dryand the following year the average leaf size in the population is smaller than the year before. But the amount of the overall variation is the same and the population size is not changed. Also you have done experiments that show that small leaves are better adapted to dry conditions than are large leaves. Which of the following has occurred?

A. genetic drift

B. directional selection

C. stabilising selection

D. disruptive selection

Answer: B

▶ View Text Solution

98. An isolated population of humans with approximately equal numbers of blue-eyed and brown-eyed individuals was decimated by

an earthquake. Only a few brown-eyed people remained to form the next generation. This kind of change in the gene pool is called a

A. Hardy-weinberg equilibrium

B. blocked Gene flow

C. bottleneck effect

D. founder effect

Answer: C

▶ **Watch Video Solution**

99. In a population of land snails some have dark shells and others have light shells. each morph produces 100ofrings per year, but the dark-shelled morphs live long enough to reproduce for five sessions, whereas the light-shled morphs which are easily seen by bird predators, live to reproduce for only one season. The darwinian fitness of the light-shelled morphs is

A. 0

B. 0.2

C. 5

D. 100

Answer: B

▶ View Text Solution

100. In a population of large and small flavoured daisies, those with large flowers leave an average of 1000 surviving offsprings, whereas those with small flowers leave an

average of only 250 offsprings. The drawnin

fitness of large-flowered daisies is

A. 1000

B. 4

C. 1

D. 0.25

Answer: C

View Text Solution

1. Which of the following is generated as a result of microevolution?

I. New varieties

II. New Subspecies

III. New Families

IV. New classes

    A. I and II

    B. II and III

C. III andIV

D. All of the these

Answer: A

⏵ **View Text Solution**

2. Which of the following is correct about random mating population?

I. The pattern of individual genes can not be datermined

II. Gene pool and gene frequencies are two

main attributes

III. There is no control over mating

IV. There is no free mating

A. I, II and III

B. II, III and IV

C. III and IV

D. Only IV

Answer: A

▶ View Text Solution

3. In the absence of which of the following the gene frequencies in a Mendelian population ramain constant generation after generation

I. Photosynthesis and respiration

II. Selection and mutation

III. Growth and development

IV. Migration and random drift

    A. I and II

    B. II and III

    C. I and III

    D. II and IV

Answer: D

4. Consider the following processes

I. Gene flow

II. Non-random mating

III. Genetic drift

IV. Transduction

Which of these is an agent of evolutionary change?

A. I and II

B. III and IV

C. Only III

D. II and IV

Answer: A

▶ **Watch Video Solution**

5. Which of the following represents

directional selection?

I. Industrial melanism

II.Bacterial resistance to antibiotics

III. Pesticide resistance

IV. Sickle-cell anamia

A. I and II

B. I, II and III

C. III and IV

D. I, II, III and IV

Answer: B

▶ Watch Video Solution

6. Which of the following is correct about genetic drift?

I.Genetic drift is called as Sewall Wright effect

II. Genetic drift increases genetic variability with in a small population

IV. Genetic drift is more effective in large population

    A. I and II

    B. II and III

    C. III and I

    D. III

Answer: A

7. Which of the following is correct ?

I. Migration is the movement of individuals from a population to another population

II. Emigration is the migration of individuals out of an area

III. Immigration is the migration of individuals into an area

IV Gene flow cannot alter the genetic charecteristics of populations

A. I and II

B. III and IV

C. I, II and III

D. II, III and IV

Answer: C

▶ **Watch Video Solution**

1. Assertion Hardy-Weinberg equilibrium is not applicable for large population size

Reason Non-random mating is necessory for Hardy-Weinberg equilibrium

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: D

▶ **Watch Video Solution**

2. Assertion Genetic drift is also called Sewall Wright effect

Reason Genetic drift was discovered by American geneticist Sewall Wright

- A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: A

▶ **Watch Video Solution**

3. Assertion Mating in most natural population is random

Reason Hardly-Weinberg equilibrium is successful in non-random population

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: C

▶ **Watch Video Solution**

4. Assertion Founder principle is associated with the genetic drift

Reason Genetic drift is significant in small populations

    A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: B

▶ **Watch Video Solution**

5. Assertion (A) : Gene flow increase genetic variations.

Reason (R) : The random introduction of new alleles into recipient population and their

removal from the donor population affects allele frequency.

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: A

6. Assertion Dominant alleles are selected more frequently than recessive alleles

Reason Dominant alleles appear in phenotype more frequently

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: A

▶ **Watch Video Solution**

7. Assertion Directional selection operates in response to gradual changes in enviromental conditions

Reason Stabilising selection operates when phenotypic features coincide with the optimal environmental conditions

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: B

▶ **Watch Video Solution**

8. Assertion Disruptive selection is the rarest form of selection

Reason Disruptive selection leads to speciation

   A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: B

▶ Watch Video Solution

9. Assertion Inbreeding is the reproduction between closely related organisms

Reason Intensive inbreeding reduces the variability of the genome

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: B

▶ **Watch Video Solution**

10. Assertioin Industrial melanism is an example of disruptive selection

Reason Evolutionary change in moth is provided by the response of moth species to the directional selection pressure produced by the atmospheric pollution

    A. Both Assertion and Reason are true, but

       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. Assertion is false, but reason is true

Answer: D

▶ **Watch Video Solution**

11. Assertion Polymorphism is the existence of two or more forms of the same species within the same population

Balanced polymorphism occurs when different forms coexist in the same population in a stable environment

A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: B

▶ **Watch Video Solution**

12. Assertion In intraspecific speciation, a single species may give rise to new species

Reason Gene flow within the populations must be interrupted

   A. Both Assertion and Reason are true, but 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. Assertion is false, but reason is true

Answer: B

▶ **Watch Video Solution**

13. Assertion Mule fails to produce functional

gametes

Reason Mule shows hybrid sterility

A. Both Assertion and Reason are true, but

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. Assertion is false, but reason is true

Answer: A

▶ **Watch Video Solution**

1. Genetic drift operates in :

    A. small isolated population

    B. large isolated population

    C. non-reproductive population

    D. slow reproductive population

Answer: A

2. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by

A. P^2

B. 2pq

C. pq

D. q^2

Answer: B

3. According to hardly-Weinberg equilibrium, the allelic frequecies in a population will remain constant from generation under which of these two conditions?

I.Large population size

II.Non-random mating

III. There should be differential success among the organisms of the population

IV. There should be no mutations or large scale migrations

A. I and III

B. I and IV

C. I and II

D. II and III

Answer: B

▶ **Watch Video Solution**

4. Allotropic speciation is

A. appearance of new species in the same area as the parent population

B. initiated by the appearance of geographical isolation

C.

D.

Answer: B

▶ View Text Solution

5. Industrial melanism is an example of

A. neo-darwinism

B. natural selection

C. mutating

D. neo-lamarkism

Answer: B

▶ **Watch Video Solution**

6. A population will not exist in Hardly-Weinberg equilbrium if

    A. individual mates selectively

    B. there are no mutation

    C. the population is large

    D. There is no migration

Answer: B

▶ **Watch Video Solution**

7. Which mechanism of evolution affects the genetic make-up in a population ?

A. Natural selection

B. Adaptation

C. Genetic drift

D. Gene mutation

Answer: D

▶ **Watch Video Solution**

8. In population of 1000 individuals 360 belongs to aa. Based on this date, frequency of allele A in the population is

A. 0.4

B. 0.5

C. 0.6

D. 0.7

Answer: C

 View Text Solution

9. Which of the following is the first step in allopatric speciation ?

    A. Goegraphic isolation

    B. Hybridisation

    C. Genetic drift

    D. Polyploidy

Answer: A

▶ **Watch Video Solution**

10. Variation in gene frequencies within populations can occur by chance rather than by natural selection. This is referred to as

A. Genetic flow

B. Genetic drift

C. Random mating

D. Genetic load

Answer: B

11. The tendency of population to remain in genetic equilibrium may be disturbed by

A. random mating

B. lack of migration

C. lack of mutation

D. lack of random mating

Answer: A

12. Which of the following species are restricted to an area??

A. Sibling species

B. Endemic species

C. Allopathic species

D. sympatric species

Answer: B

▶ **Watch Video Solution**

13. Population are said to be allopathic when

   A. they are physically isolated by natural

   barriers

   B. they sharing the same area, but cannot

   interbreed

   C. they live together and breed freely to

   produce viable offspring

   D. they are isolated, but often come

   together for breeding

Answer: A

14. Biological concept of species is mainly based on

    A. reproductive isolation

    B. morphological features only

    C. methods of reproduction only

    D. evolutionary relationship

Answer: A

15. The process by which organisms with different evolutionary history evolve similar phenotypic adaptations in response to a common environmental challenge is called :

    A. natural selection

    B. convergent evolution

    C. non-random evolution

D. adaptive radiation

Answer: B

▶ **Watch Video Solution**

16. Species is a

A. group immediately below a phylm

B. closely related interbreeding population

C. taxonamic division of similar genera

D. closely related non- breeding population

Answer: B

17. Read the following statements and select the correct option

A. Increase in melanised moths after industrialisation in Great Britain is a proof for natural selection

B. When more individuals of a population acquire a mean character value, it is called disruption

C. Changes in allelic frequency in a population will lead to Hardy-Weinberg equilibrium

D. Genetic drift changes the existing gene or allelic frequency in future generations.

A. Only II

B. Only Iv

C. I and IV

D. I and III

Answer: D

18. Related species which are reproductively isolated but morphologically similar are called

   A. sibling

   B. sympatric

   C. allopatric

   D. morphospecies

Answer: A

19. Single step large mutation leading to speciation is also called

    A. Founders effect

    B. saltation

    C. branching descent

    D. natural selection

Answer: B

▶ **Watch Video Solution**

20. In the case of peppered moth (Biston betularia) the black-coloured from became dominant over the light-coloured form in England during industrial revolution. This is an example of

A. natural selection whereby the darker forms were selected

B. appearence of the dark coloured individuals duer to very poor sunlight

C. protective mimcry

D. inheritance of dark-coloured character acquired due to the dark environment

Answer: A

▶ **Watch Video Solution**

21. Hardy-Weinberg equilibrium is known to be affected by gene flow, genetic drift, mutation, genetic recombination and

A. evolution

B. limiting factors

C. saltation

D. natural selection

Answer: D

22. Change of frequency of alleles in a population results in evolution is proposed in :

A. Darwin's theory

B. Lamacks theory

C. Hardy-weinberg principal

D. de varies theory

Answer: C

▶ **Watch Video Solution**

23. Which of the following defines Hardy-Weinberg's law?

A. $p^2 + pq + q^2 = 1$

B. $p^2 + 2pq + q^2 = 1$

C. $p^2 + 2pq + q^2 = 0$

D. $q^2 + q^2 + 2pq = 0$

Answer: B

▶ **Watch Video Solution**

24. Industrial melanism as observed in peppered moth proves that the

A. True black melanic forms arise by a reccuring random mutation

B. Melanic form of the moth has no selective advantage either in polluted industrial area or non-polluted area

C. Melanism is a pollution generated feature

D.

Answer: A

25. The most likely reason for the development of resistance against pesticides in insect damaging a crop is

    A. Random mutations

    B. Genetic recombination

    C. Direct mutations

    D. Acquired heritable changes

Answer: A

▶ **Watch Video Solution**

26. In a Mendelian population, the sum total of genes of all the individuals constitute

A. Genotype

B. gene flow

C. Gene pool

D. Genome

Answer: C

▶ Watch Video Solution