Heredity and Evolution

Question 1.
Assertion: Specialization is the reproductive isolation amongst once interbreeding population.
Reason: Genetic drift, Natural selection and Severe DNA change can cause specialization.
(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.
(e) Both A and R are false.

▼ Answer

(a) Both A and R are true and R is the correct explanation of A.

Question 2.
Assertion: Acquired trait cannot be passed on from one generation to next generation.
Reason: Inaccuracy during DNA copying of acquired trait is minimum.
(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.
(e) Both A and R are false.

▼ Answer

(c) A is true but R is false.

Question 3.
Human offspring's sex is determined
(a) through father's sex chromosomes.
(b) through mother's sex chromosomes.
(c) by hormones.
(d) by enzymes.

▼ Answer

(a) through father's sex chromosomes.

Question 4.
Wing of a bird and wing of an insect are
(a) Homologous organs
(b) analogous organs
(c) vestigial organ
(d) both (a) and (b)

▼ Answer

(a) Homologous organs

Question 5.
Which concept was not included in Charles Darwin's theory of Natural Selection?
(a) Struggle for existence
(b) Punctuated equilibrium

(c) Survival of the fittest
(d) Overproduction of offspring.

▼ Answer

(b) Punctuated equilibrium

Question 6.
The remaps (or impressions) of dead animals or plant? that lived in the remote past are known as
(a) extinct species
(b) fossils
(c) naturally selected species
(d) none of the above

▼ Answer

(b) fossils

Question 7.
Natural selection is called 'survival of the fittest'. Which of the following statements best describes an organism?
(a) How strong it is compared to other individuals of the same species.
(b) How much food and resources it is able to gather for its offspring.
(c) The ability to adapt to the environment in the niche it occupies.
(d) The number of fertile offspring it has.

▼ Answer

(c) The ability to adapt to the environment in the niche it occupies.

Question 8.
The process by which new species develop from the existing species is known as
(a) Evolution
(b) Natural selection
(c) Artificial selection
(d) Speciation

▼ Answer

(d) Speciation

Question 9.
The more characteristics two species have in common :
(a) More closely they are related and more recently they had a common ancestors.
(b) More distantly they are related and more recently they have common ancestors.
(c) More closely they are related and more distantly they have common ancestors.
(d) More distantly they are related and more distantly they have common ancestors.

▼ Answer

(a) More closely they are related and more recently they had a common ancestors.

Question 10.
A cross between two individuals results in a ratio of 9 : 3 : 3 :1 for four possible phenotypes of progeny. This is an example of a
(a) Monohybrid cross
(b) Dihybrid cross

(c) Test cross
(d) F1 generation

▼ Answer

(b) Dihybrid cross

Question 11.
Two pink colored flowers on crossing results in 1 red, 2 pink and 1 white flower progeny. The nature of the cross is-
(a) cross fertilization
(b) self pollination
(c) double fertilization
(d) no fertilization

▼ Answer

(a) cross fertilization

Question 12.
Differences between organisms in a species are described as variation. Which of the following would you describe as continuous variation?
(a) Hair colour
(b) Eye colour
(c) Weight
(d) Sex

▼ Answer

(c) Weight

Question 13.
Those organs which have the same basic structure but different functions are called
(a) Vestigial organs
(b) Analogous organs
(c) Homologous organs
(d) None of these

▼ Answer

(c) Homologous organs

Question 14.
A man with blood group A marries a woman having blood group O. What will be the blood group of the child?
(a) O only
(b) A only
(c) AB
(d) Equal chance of acquiring blood group A or blood group O.

▼ Answer

(d) Equal chance of acquiring blood group A or blood group O.

Question 15.
The concept of origin of species by natural selection was given by.
(a) lamarck

(b) weismann
(c) Darwin
(d) Linnaeus

▼ Answer

(c) Darwin

Question 16.
Which of the following is not correct-
(a) For every hormone there is a gene.
(b) For every protein there is a gene.
(c) For production of every enzyme there is a gene.
(d) For every molecule of fat there is a gene.

▼ Answer

(b) For every protein there is a gene.

Question 17.
Which of the following is the ancestor of 'Broccoli'?
(a) Cabbage
(b) Cauliflower
(c) Wild cabbage
(d) Kale

▼ Answer

(c) Wild cabbage

Question 18.
The process of evolution of a species whereby characteristics which help individual organisms to survive and reproduce are passed on to their offspring and those characteristics which do not help are not passed on is called
(a) Artificial selection
(b) Speciation
(c) Hybridization
(d) Natural selection

▼ Answer

(d) Natural selection

Question 19.
Some dinosaurs had feathers although they could not fly but birds have feathers that help them to fly. In the context of evolution this means that-
(a) reptiles have evolved from birds
(b) there is no evolutionary connection between reptiles and birds
(c) feathers are homologous structure in both the organisms
(d) Birds have evolved from reptiles.

▼ Answer

(d) Birds have evolved from reptiles.

Question 20.
Process of selecting individuals with desired characters by man is called

(a) Hybridization
(b) Reproduction
(c) Artificial selection
(d) Natural selection

▼ Answer

(c) Artificial selection

Question 21.
Select the group which shares maximum number of common characters-
(a) two genera of two families
(b) two species of a genus
(c) two genera of a family
(d) two individuals of a species

▼ Answer

(d) two individuals of a species

Question 22.
Which of the following scientist gave the principles of inheritance?
(a) Mendel
(b) Griffin
(c) Johannes
(d) Watson and Crick

▼ Answer

(a) Mendel

Question 23.
Assertion: Human, frog and bird have a common ancestor.
Reason: Limbs of human, bird and frog are homologous.
(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.
(e) Both A and R are false.

▼ Answer

(a) Both A and R are true and R is the correct explanation of A.

Question 24.
Assertion: Variation is high in sexually reproducing organisms compared to asexually reproducing organisms.
Reason: Inaccuracies during DNA copying give rise to variation.
(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.
(e) Both A and R are false.

▼ Answer

(b) Both A and R are true but R is not the correct explanation of A.

Question 25.
An example of homologous organs is
(a) Our arm and a dog's fore-leg.
(b) Our teeth and an elephant's tusks.
(c) Potato and runners of grass.
(d) All of the above.

▼ Answer

(d) All of the above.

Question 26.
A Mendelian experiment consisted of breeding tall pea plants bearing violet flowers with short pea plants bearing white flowers. The progeny all bore violet flowers but almost half of them were short. This suggests that the genetic make-up of the tall parent can be depicted as
(a) TTWW
(b) TTww
(c) TtWW
(d) TtWw

▼ Answer

(c) TtWW

Question 27.
Wild cabbage has evolved into new varieties like cabbage, broccoli and cauliflower by
(a) genetic drift
(b) natural selection
(c) reproductive isolation
(d) artificial selection

▼ Answer

(d) artificial selection

Question 28.
The fossil remains of Archaeology is a connecting link between
(a) reptiles and mammals
(b) reptiles and bird
(c) fish and amphibian
(d) amphibian and reptile

▼ Answer

(b) reptiles and bird

Question 29.
What is the difference between genetic drift and change due to natural selection?
(a) Genetic drift does not require the presence of variation.
(b) Genetic drift never occurs in nature, natural selection does.
(c) Genetic drift does not involve competition between members of a species.
(d) There is no difference.

▼ Answer

(c) Genetic drift does not involve competition between members of a species.

Question 30.
The theory of chemical evolution of life was experimentally demonstrated by-
(a) Oparin
(b) Miller and Urey
(c) Mendel
(d) Darwin

▼ Answer

(b) Miller and Urey

Question 31.
The number of pairs of sex chromosomes in the zygote of a human being is
(a) 2
(b) 3
(c) 1
(d) 4

▼ Answer

(c) 1

Question 32.
The human species has genetic roots in
(a) Australia
(b) Africa
(c) America
(d) Indonesia

▼ Answer

(b) Africa

Question 33.
The remaps (or impressions) of dead animals or plant? that lived in the remote past are known as
(a) extinct species
(b) fossils
(c) naturally selected species
(d) none of the above

▼ Answer

(b) fossils

Question 34.
Mendel proposed that every character is controlled by-
(a) one factor
(b) two factors
(c) one chromosome
(d) two chromosomes

▼ Answer

(b) Two factors.

Question 35.
Which of the following characters can be acquired but not inherited?
(a) Colour of skin
(b) Size of body
(c) Colour of eyes
(d) Texture of hair

▼ Answer

(b) Size of body

Question 36.
Identify the two organisms which are now extinct and are studied from their fossils.
(a) white tiger and sparrow
(b) dinosaur and fish (Knightia)
(c) ammonite and white tiger
(d) trilobite and white tiger

▼ Answer

(b) dinosaur and fish (Knightia)

Question 37.
The genetic constitution of an organism is called.
(a) Genotype
(b) phenotype
(c) variation
(d) gene.

▼ Answer

(a) Genotype

Question 38.
If a round, green seeded pea-plant (RRyy) is crossed with a wrinkled yellow seeded pea- plant (rrYY), the seeds produced in F_1 generation are
(a) round and green
(b) round and yellow
(c) wrinkled and green
(d) wrinkled and yellow

▼ Answer

(b) round and yellow

Question 39.
According to the evolutionary theory formation of a new species occurs generally due to –
(a) Sudden creation by nature.
(b) accumulation of variations over several generations
(c) clones formed during asexual reproduction
(d) Movement of individuals from one habitat to another.

▼ Answer

(b) accumulation of variations over several generations

Question 40.
Which of the following decides the sex of the child?
(a) male gamete, i.e., sperm
(b) female gamete, i.e., ovum
(c) both sperm and ovum
(d) mother

▼ Answer

(a) male gamete, i.e., sperm

Question 41.
A zygote which has an X-chromosome inherited from the father will develop into a
(a) girl
(b) boy
(c) either boy or girl
(d) X-chromosome does not influence the sex of a child.

▼ Answer

(a) girl

Question 42.
What does the progeny of a tall plant with round seeds and a short plant with wrinkled seeds look like?
(a) All are tall with round seeds.
(b) All are short with round seeds.
(c) All are tall with wrinkled seeds.
(d) All are short with wrinkled seeds.

▼ Answer

(a) All are tall with round seeds.

Question 43.
A cross between a tall pea-plant (TT) and a short pea-plant (tt) resulted in progenies that were all tall plants because
(a) tallness is the recessive trait.
(b) shortness is the dominant trait.
(c) height of pea-plant is not governed by gene T or t.
(d) tallness is the dominant trait.

▼ Answer

(b) shortness is the dominant trait.

Question 44.
Which one of the following pairs are homologous organs?
(a) Forelimbs of a bird and wings of a bat.
(b) Wings of a bird and wings of a butterfly.
(c) Pectoral fins of a fish and forelimbs of a horse.
(d) Wings of a bat and wings of a cockroach.

▼ Answer

(a) Forelimbs of a bird and wings of a bat.
