

Q1) Mendel conducted his famous breeding experiments by working on the following:

- (a) Drosophila
- (b) Escherichia Coli
- (c) Pisum Sativum
- (d) All of these

Correct Answer: Option (c)

Q2) Which section of DNA provides information for one protein?

- (a) Nucleus
- (b) Chromosome
- (c) Trait
- (d) Gene

Correct Answer: Option (d)

Q3) Which of the following is an example of genetic variation?

- (a) One person has a scar, but his friend doesn't
- (b) One person is older than the other
- (c) Reeta eats meat, but her sister Geeta is a vegetarian
- (d) Two children have different eye colour

Correct Answer: Option (d)

Q4) In peas, a pure tall (TT) is crossed with a pure short plant(tt). The ratio of pure tall plants to pure short plants in the F2 generation is:

- (a) 1:3
- (b) 3:1
- (c) 1:1
- (d) 2:1

Correct Answer: Option (c)

Q5) Humans have two different sex chromosomes, X and Y. Based on Mendel's laws, a male offspring will inherit which combination of chromosomes?

- (a) Both the X chromosomes from one of its parents
- (b) Both the Y chromosomes from one of its parents
- (c) A combination of X chromosomes from either of its parents
- (d) A combination of X and Y chromosomes from either of its parents

Correct Answer: Option (d)

Q6) Two pea plants, one with round green seeds (RR yy) and another with wrinkled yellow (rrYY) seeds, produce F₁ progeny that have round yellow (RrYy) seeds. When F₁ plants are self-pollinated, the F₂ progeny will have a new combination of characters. Choose the new combinations from the following:

(i) Round, yellow

(ii) Round, green

(iii) Wrinkled, yellow

(iv) Wrinkled, green

(a) (i) and (ii)

(b) (i) and (iv)

(c) (ii) and (iii)

(d) (i) and (iii)

Correct Answer: Option (b)

Q7) Miller and Urey performed an experiment to prove the origin of life from organic compounds. The gases they took were:

(a) methane, ethane, ammonia, water vapour

(b) methane, ethane, hydrogen, ammonia

(c) ammonia, water vapour, butane, hydrogen

(d) methane, ammonia, hydrogen, water vapour

Correct Answer: Option (d)

Q8) Which of the following is a pair of analogous organs?

(a) Wings of a pigeon and a bat

(b) Forelimbs of a frog and a bird

(c) Forelimbs of a rabbit and a lizard

(d) Leaves of a pitcher plant and a Venus fly trap

Correct Answer: Option (a)

Q9) Two pink-coloured flowers on crossing resulted in 1 red, 2 pink and 1 white-flower progeny. The nature of the cross will be:

(a) double fertilization

(b) self-pollination

(c) cross-fertilization

(d) no fertilization

Correct Answer: Option (c)

Q10) A zygote which has an X chromosome inherited from the father will develop into a:

- (a) boy
- (b) girl
- (c) X chromosome does not determine the sex of a child
- (d) either boy or girl

Correct Answer: Option (b)

Q11) The surprise products formed in the experiment conducted by Miller and Urey were:

- (a) peptides
- (b) amino acids
- (c) nucleotides
- (d) nucleic acids

Correct Answer: Option (b)

Q12) From the list given below, select the character which can be acquired but not inherited.

- (a) Colour of eyes
- (b) Colour of skin
- (c) Texture of hair
- (d) Size of body

Correct Answer: Option (d)

Q13) In humans, if gene B gives brown eyes and gene b gives blue eyes, what will be the colour of the eyes of the person having combination (i) Bb (ii) BB:

- (a) (i) Brown (ii) Brown
- (b) (i) Blue (ii) Blue
- (c) (i) Blue (ii) Brown
- (d) (i) Brown (ii) Blue

Correct Answer: Option (a)

Q14) What is the probability that the male progeny will be a boy?

- (a) 50 %
- (b) 56 %
- (c) 47.43 %
- (d) It varies

Correct Answer: Option (a)

Q15) Which of the following does Darwin's theory not include?

- (a) Natural Selection

- (b) Survival of the fittest
- (c) Evolution Through Inheritance
- (d) Struggle for the existence of life

Correct Answer: Option (c)

Q16) In pea plants, yellow seeds are dominant to green seeds. If a heterozygous yellow-seeded plant is crossed with a green-seeded plant, what ratio of yellow and green-seeded plants would you expect in the F₁ generation?

- (a) 9:1
- (b) 3:1
- (c) 1:3
- (d) 50:50

Correct Answer: Option (d)

Q17) Which of the following statements is not true with respect to variation?

- (a) All variations in a species have equal chances of survival.
- (b) Change in genetic composition results in variation.
- (c) Selection of variants by environmental factors forms the basis of evolutionary processes.
- (d) Variation is minimum in asexual reproduction

Correct Answer: Option (a)

Q18) The two versions of a trait (character) which are brought in by the male and female gametes are situated on:

- (a) Copies of the same (homologous) chromosomes
- (b) Two different chromosomes
- (c) Sex chromosomes
- (d) Any Chromosomes

Correct Answer: Option (a)

Q19) Exchange of genetic material takes place in:

- (a) Vegetative reproduction
- (b) Asexual reproduction
- (c) Sexual reproduction
- (d) Budding

Correct Answer: Option (c)