

# VIDYA BHARATI SCHOOL



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## X Science

- Exchange of genetic material takes place in
  - (a) vegetative reproduction
  - (b) asexual reproduction
  - (c) sexual reproduction
  - (d) budding
- 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 fertilisation
  - (b) self pollination
  - (c) cross fertilisation
  - (d) no fertilisation
- A cross between a tall plant (TT) and short pea plant (tt) resulted in progeny that were all tall plants because
  - (a) tallness is the dominant trait
  - (b) shortness is the dominant trait
  - (c) tallness is the recessive trait
  - (d) height of pea plant is not governed by gene 'T' or 't'
- Which of the following statement is incorrect?
  - (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
- If a round, green seeded pea plant (RR yy) is crossed with wrinkled, yellow seeded pea plant, (rr YY) the seeds produced in F1 generation are
  - (a) round and yellow
  - (b) round and green
  - (c) wrinkled and green
  - (d) wrinkled and yellow
- In human males all the chromosomes are paired perfectly except one. This/these unpaired chromosome is/are
  - large chromosome
  - small chromosome
  - Y-chromosome
  - X-chromosome
  - (a) (i) and (ii)
  - (b) (iii) only
  - (c) (iii) and (iv)
  - (d) (ii) and (iv)
- The maleness of a child is determined by
  - (a) the X chromosome in the zygote
  - (b) the Y chromosome in zygote
  - (c) the cytoplasm of germ cell which determines the sex

- (d) sex is determined by chance
8. 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
9. Select the incorrect statement
- (a) Frequency of certain genes in a population change over several generations resulting in evolution
  - (b) Reduction in weight of the organism due to starvation is genetically controlled
  - (c) Low weight parents can have heavy weight progeny
  - (d) Traits which are not inherited over generations do not cause evolution
10. New species may be formed if
- (i) DNA undergoes significant changes in germ cells
  - (ii) chromosome number changes in the gamete
  - (iii) there is no change in the genetic material
  - (iv) mating does not take place
- (a) (i) and (ii)
  - (b) (i) and (iii)
  - (c) (ii), (iii) and (iv)
  - (d) (i), (ii) and (iii)
11. Two pea plants one with round green seeds (RRyy) and another with wrinkled yellow (rrYY) seeds produce F<sub>1</sub> progeny that have round, yellow (RrYy) seeds. When F<sub>1</sub> plants are selfed, the F<sub>1</sub> progeny will have new combination of characters. Choose the new combination 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)
12. A basket of vegetables contains carrot, potato, radish and tomato. Which of them represent the correct homologous structures?
- (a) Carrot and potato
  - (b) Carrot and tomato
  - (c) Radish and carrot
  - (d) Radish and potato
13. Select the correct statement
- (a) Tendril of a pea plant and phylloclade of Opuntia are homologous
  - (b) Tendril of a pea plant and phylloclade of Opuntia are analogous
  - (c) Wings of birds and limbs of lizards are analogous
  - (d) Wings of birds and wings of bat are homologous
14. If the fossil of an organism is found in the deeper layers of earth, then we can predict that
- (a) the extinction of organism has occurred recently
  - (b) the extinction of organism has occurred thousands of years ago

- (c) the fossil position in the layers of earth is not related to its time of extinction
  - (d) time of extinction cannot be determined
15. Which of the following statements is not true with respect to variation?
- (a) All variations in a species have equal chance 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
16. A trait in an organism is influenced by
- (a) paternal DNA only
  - (b) maternal DNA only
  - (c) both maternal and paternal DNA
  - (d) neither by paternal nor by maternal DNA
17. Select the group which shares maximum number of common characters
- (a) two individuals of a species
  - (b) two species of a genus
  - (c) two genera of a family
  - (d) two genera of two families
18. According to the evolutionary theory, formation of a new species is 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
19. From the list given below, select the character which can be acquired but not inherited
- (a) colour of eye
  - (b) colour of skin
  - (c) size of body
  - (d) nature of hair
20. 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 chromosome
  - (b) two different chromosomes
  - (c) sex chromosomes
  - (d) any chromosome