RAVI MATHS TUITION CENTER, NEAR VILLIVAKKAM RLY STATION, CHENNAI – 82.
WHATSAPP - 8056206308

Botany - Classical Genetics

12th Standard

Biology

Exam Time : 00:50:00 Hrs | Total Marks : 50

50 x 1 = 50

1) Extra nuclear inheritance is a consequence of presence of genes in
(a) Mitrochondria and chloroplasts (b) Endoplasmic reticulum and mitrochondria (c) Ribosomes and chloroplast (d) Lysososmes and ribosomes

2) In order to find out the different types of gametes produced by a pea plant having the genotype AaBb, it should be crossed to a plant with the genotype
(a) aaBB (b) AaBB (c) AABB (d) aabb

3) How many different kinds of gametes will be produced by a plant having the genotype AABbCC?
(a) Three (b) Four (c) Nine (d) Two

4) Which one of the following is an example of polygenic inheritance?
(a) Flower colour in Mirabilis Jalapa (b) Production of male honey bee (c) Pod shape in garden pea (d) Skin Colour in humans

5) In Mendel's experiments with garden pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledon (YY) was dominant over green cotyledon (yy). What are the expected phenotypes in the F2 generation of the cross RRYY x rryy?
(a) Only round seeds with green cotyledons (b) Only wrinkled seeds with yellow cotyledons (c) Only wrinkled seeds with green cotyledons (d) Round seeds with yellow cotyledons an wrinkled seeds with yellow cotyledons

6) Test cross involves
(a) Crossing between two genotypes with recessive trait (b) Crossing between two F_1 hybrids (c) Crossing the F_1 hybrid with a double recessive genotype (d) Crossing between two genotypes with dominant trait

7) In pea plants, yellow seeds are dominant to green. If a heterozygous yellow seed pant is crossed with a green seeded plant, what ratio of yellow and green seeded plants would you expect in F_1 generation?
(a) 9:1 (b) 1:3 (c) 3:1 (d) 50:50

8) The genotype of a plant showing the dominant phenotype can be determined
(a) Back cross (b) Test cross (c) Dihybrid corss (d) Pedigree analysis

9) Select the correct statement from the ones given below with respect to dihydrid cross
(a) Tightly linked genes on the same chromosomes show very few combinations (b) Tightly linked genes on the same chromosomes show higher combinations (c) Genes far apart on the same chromosomes show very few recombinations (d) Genes loosely linked on the same chromosomes show similar recombinations as the tightly linked ones

10) Which Mendelian idea is depicted by a cross in which the F1 generation resembles both the parents
(a) Incomplete dominance (b) Law of dominance (c) Inheritance of one gene (d) Co-dominance

11) Fruit colour in squash is an example of
(a) Recessive epistatsis (b) Dominant epistasis (c) Complementary genes (d) Inhibitory genes

12) In his classic experiments on Pea plants, Mendel did not use
(a) Flowering position (b) Seed colour (c) Pod length (d) Seed shape

13) The epistatic effect, in which the dihybrid cross 9:3:3:1 between AaBb Aabb is modified as
(a) Dominance of one allele on another allele of both loci (b) Interaction between two alleles of different loci (c) Dominance of one allele to another alleles of same loci (d) Interaction between two alleles of some loci

14) In a test cross involving F1 dihybrid flies, more parental type offspring were produced than the recombination type offspring. This indicates
(a) The two genes are located on two different chromosomes (b) Chromosomes failed to separate during meiosis (c) The two genes are linked and present on the some chromosome (d) Both of the characters are controlled by more than one gene

15) The genes controlling the seven pea characters studied by Mendel are known to be located on how many different chromosomes?
(a) Seven (b) Six (c) Five (d) Four

16) Which of the following explains how progeny can posses the combinations of traits that none of the parent possessed?
(a) Law of segregation (b) Chromosome theory (c) Law of independent assortment (d) Polygenic inheritance

17) “Gametes are never hybrid”. This is a statement of
(a) Law of dominance (b) Law of independent assortment (c) Law of segregation (d) Law of random fertilization

18) Gene which suppresses other genes activity but does not lie on the same locus is called as
(a) Epistatic (b) Supplement only (c) Hypostatic (d) Codominant

19) Pure tall plants are crossed with pure dwarf plants. In the F1 generation, all plants were tall. These tall plants of F1 generation were selfed and the ratio of tall to dwarf plants obtained was 3:1. This is called
(a) Dominance (b) Inheritance (c) Codominance (d) Heredity

20) The dominant epistatis ratio is
(a) 9:3:3:1 (b) 12:3:1 (c) 9:3:4 (d) 9:6:1

21) Select the period for Mendel’s hybridization experiments
(a) 1856 - 1863 (b) 1850 - 1870 (c) 1857 - 1869 (d) 1870 - 1877

22) Among the following characters which one was not considered by Mendel in his experimentation pea?
(a) Stem – Tall or dwarf (b) Trichomal glandular or non-glandular (c) Seed – Green or yellow (d) Pod – Inflated or constricted

23) The term 'Genetics' was introduced by_____
(a) Gregor Mendel (b) Bateson (c) Hugo de Vries (d) Carl Correns

24) Which is not a correct statement?
(A) Variations are the raw materials for evolution
(B) Variations provide genetic material for natural selection
(C) It helps the individual to adapt to the changing environment
(D) Variations allow breeders to improve the crop field
(a) A and D (b) B only (c) C and D (d) none of he above

25) An allede is_____
(a) another word (b) Alternate (c) morphological (d) genetic make up of

for a gene forms of a gene expression of a gene an organism

26) Gregor Mendel _____
(i) was born in Czechoslovakia
(ii) did his experiments in Pisum fulvum
(iii) was the first systemic researcher in genetics
(iv) Published his results in the paper "Experiments on Plant Hybrids"
(a) All are correct (b) (ii), (iii), (iv) are correct (c) (i), (iii),(iv) are correct (d) (i), (iii), (iv) are correct

27) How many characters studied by Mendel in pisum sativum
(a) Three (b) Five (c) Seven (d) Nine

28) Mendel's work were rediscovered by_____
(a) Hugo de Vries (b) Tschermak (c) Carl Correns (d) all the above

29) Crossing of F I to anyone of the parent refers to _____
(a) selfing (b) back cross (c) test cross (d) all of the above

30) Assertion (A): Test cross is done between F2 hybrid with F. recessive
Reason (R): It helps to identify the homozygosity of hybrids
(a) A and R are correct R explains A (b) A and R are incorrect (c) A is correct R is incorrect (d) A is incorrect R is correct

31) Assertion (A): Pleiotropic gene affects multiIple traits
Reason (R): ABO blood group is an example for Pleiotropism
(a) A and R are correct R explains A (b) A and R are incorrect (c) A is correct R is incorrect (d) A is incorrect R is correct

32) Assertion (A): Cytoplasmic male sterility is a Mendelian inheritance
Reason (R): The genes for cytoplasmic male sterility in peal maize is located at mitochondrial DNA
(a) A and R are correct R explains A (b) A and R are incorrect (c) A is correct R is incorrect (d) A is incorrect R is correct

33) What is the phenotypic ratio in case of incomplete dominance?
(a) 9: 7 (b) 3: 1 (c) 1: 2 : 1 (d) 1: 1 : 1 : 1

34) Identify the mismatched pair
(a) Chloroplast inheritance - Gregor Mendel (b) Polygenic inheritance - H. Nilsson (c) Lethal genes - E. Baur (d) Incomplete dominance - Carl Correns

35) Statement 1: Test cross is done between F1 individual with homozygous recessive
Statement 2: If F 1 individual is homozygous, the rate of a monohybrid cross will be 1:1
(a) Statement 1 is correct & Statement 2 is incorrect (b) Statement 1 is incorrect & Statement 2 is correct (c) Both Statements 1 & 2 are correct (d) Both Statements 1 & 2 are incorrect

36) Incase of co-dominance, monohybrid F 1 _____ is 1: 2: 1
(a) Genotype ratio (b) Phenotype ratio (c) Both genotype & Phenotype ratio (d) Ratio is wrong

37) Identify the wrong statement(s)
(i) Monohybrid cross involves the inheritance of two alleles of a gene
(ii) The dwarf traits reappeared in F2
(iii) Law of dominance was proved by monohybrid cross
(iv) F 1 monohybrid was an heterozygous
(a) i and ii (b) iii and iv (c) i only (d) none of the above

38) Result of incomplete dominance is _____

(a) Intermediate genotype (b) Intermediate phenotype (c) Recessive phenotype (d) Epistasis

39) Heterozygous Tall mono hybrid is cross with homozygous dwarf. What will be characteristic of offspring?
(a) 25 % recessive 75% dominant (b) 75 % recessive 25% dominant (c) 50 % recessive 50% dominant (d) All are dominants

40) ABO blood group is a classical example for _____
(a) Polygenic inheritance (b) Incomplete dominance (c) Epistasis (d) Dominance

41) RR (Red) flower of Mirabilis is crossed with White (WW) flowers. Resultant offspring are pink RW. This is an example of _____
(a) Epistasis (b) Co-dominance (c) Incomplete dominance (d) Pleiotropism

42) How many genetically different gametes are produced by a plant have genotype TtYyRr?
(a) 2 (b) 4 (c) 6 (d) 8

43) When a single gene influences multiple traits then the phenomenon is called _____
(a) Pleiotropy (b) Polygenic inheritance (c) Epistasis (d) Atavism

44) According to Mendel which character shown dominance
(a) Yellow flower color (b) Yellow cotyledon color (c) Wrinkled seeds (d) Inflated pod

45) Ratio of recessive epistasis is _____
(a) 12: 3 : 1 (b) 9: 7 (c) 9: 3 : 4 (d) 9: 6 : 1

46) According to Mendel, which is not a dominant trait?
(a) Wrinkled seeds (b) Purple flower (c) Inflated pod form (d) Axial flower portion

47) Identify the allelic interaction
(a) Dominant epistasis (b) Co-dominance (c) Recessive epistasis (d) Duplicate genes

48) 'Gametes are never hybrid' is concluded by _____
(a) Law of dominance (b) Law of segregation (c) Law of independent environment (d) Law of lethality

49) Factor hypothesis was proposed by _____
(a) Reginald Punnett (b) W. Bateson (c) Gregor Mendel (d) Carl Correns

50) The 1 : 2 : 1 ratio of co-dominance process Mendel's _____
(a) Law of dominance (b) Law of recessiveness (c) Law of segregation (d) Law of independent assortment