Medical College Admission Test (MCAT)

➔ VARIATION & GENETICS

Chapter # 22

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1. Mendel's hereditary factor "genes" are located on:

A. Mitochondria
B. Nuclear membrane
C. √ Chromosomes
D. Lysosomes
E. Cytoplasmic membrane

2. Basic units of inheritance are:

A. Chromosomes
B. Nucleus
C. Nucleolus
D. Nuclear membrane
E. √ Genes

3. The total aggregate of genes in a population at any one time is called the populations

A. √ Gene pool
B. Gene target
C. Gene cycle
D. Gene square
E. Gene aggregation

4. Genes that occupies a specific position called:

A. Alleles
B. √ Locus
C. Gene pool
D. Linkage
E. Synapsis

5. "Law of Dominance" was derived by:

A. T. H. Morgan
B. √ Gregor Johann Mendell
C. Rudolf Virchow
D. Bateson
E. Lamarck

6. The phenotypic ratio of plants with dominant character to those with recessive character is always close to:

A. 1:2
B. 2:1
C. 1:1
D. √ 3:1
E. 1:3

7. Separation of genes is called.

A. Assortment
B. Dominance
C. √ Segregation
D. Inheritance
E. Gene pool

8. "Law of purity of gametes" is:

A. Law of Dominance
B. Law of Recessiveness
C. Law of Independent Assortment
D. √ Law of Segregation
E. Pleiotropy

9. "Each gamete contains only one allele of a particular character and is said to be pure", this

A. Plelotropy
B. Epistasis
C. Law of Independent Assortment
D. Law of Dominance
E. √ Law of Segregation

10. "The members of one pair of genes segregate independently of the other pairs", this is:

A. √ Law of independent Assortment
B. Pleiotropy
C. Law of Segregation
D. Law of Dominance
E. Epistasis

11. Mendel perform his famous experiments of heredity on:

A. Maize
B. Castor plant
C. √ Garden pea
D. Mirabilis plant
E. Bean plants

12. Cross fertilization of a phenotypically dominant individual with a homozygous recessive individual is:

A. Incomplete dominance
B. √ Test cross
C. Co-dominance
D. Epistasis
E. All are incorrect

13. Incomplete dominance is also known as:

A. Primary Inheritance
B. Secondary Inheritance
C. √ Intermediate inheritance
D. Dependent Inheritance
E. Independent inheritance

14. "None of the two genes is dominant over the other", this phenomenon is:

A. Test Cross
B. √ Co-dominance
C. Incomplete dominance
D. Epistasis
E. Pleiotropy

15. Both alleles of a contrasting character are dominant and express themselves in heterozygous individual neither masking the effect of one another, this is:

A. Test Cross
B. Co dominance
C. √ Phenomenon of Inheritance
D. Law of Segregation
E. Law of Independent Assortment

16. A gene for a trait having three or more allelic forms is called:

A. Single allele
B. Unilocular alleles
C. √ Multiple alleles
D. Double alleles
E. Recessive alleles

17. A well known example of multiple alleles in human beings is that of the:

A. Skin colour
B. Height
C. Flair texture
D. √ Blood groups
E. Rhesus factor

18. Cross appearance of intermediate character is known as:

A. Co dominance
B. √ Incomplete dominance
C. Epistasis
D. Test cross
E. Pleiotropy

19. Blood group, also known as "Universal Donor" is:

A. Blood group A^+
B. √ Blood group O^+
C. Blood group B^-
D. Blood group AB^+
E. Blood group B^+

20. Blood group also known as "Universal Recipient" is:

A. Blood group A^+
B. Blood group O^+
C. Blood group B^-
D. Blood group AB^+
E. √ Blood group B^+

21. Each human being possesses _____ pairs of chromosomcs.

A. 21
B. 22
C. √ 23
D. 24
E. 26

22. "R^h" stands for:

A. √ Rhesus Factor
B. Rhesus Gene
C. Rhesus Pool
D. Rhesus Heamatin
E. Rhesus Type

23. When a colour blind male marries a normal female:

A. All the sons, will be normal & daughter colour blind.
B. √ All sons are colour blind & daughters normal but carriers.
C. All the daughters will be colour blinds & sons normal but cariers.
D. All the sons and daughters will be colour blind.
E. All the sons and daughters will be normal.

24. In Erythroblastosis foctalis:

A. Mother is R^h positive and father R^h negative
B. √ Father is R^h positive and mother R^h negative
C. Mother and father are both R^h positive but grand parents are R^h negative
C. Mother and father both are R^h negative
E. Mother and father both are R^h positive

25. Suppressive influence of any genetic factor on another that is not its allele is:

A. √ Epistasis
B. Co dominance
C. Incomplete Dominance
D. Test Cross
E. Pleiotropy

26. Traits that are controlled by two or more than two separate pairs of genes, which manifest themselves in an additive fashion to yield continuously varying traits, this is:

A. Epistasis
B. Pleiotropy
C. √ Polygenic Inheritance
D. Intermediate Inhertiance
E. Co-dominance

21. The multiple effects of a single gene or allele are termed:

A. Epistasis
B. √ Pleiotropy
C. Co dominance
D. Test Cross
E. Polygenic Inheritance

28. _____ pairs of chromosomes found in Drosophila:

A. Two
B. Three
C. √ Four
D. Five
E. Six

29. The tendency of genes in a chromosome to remain together is called:

A. √ Linkage
B. Synapsis
C. Pleiotropy
D. Crossing over
E. Hybridization

30. During meiosis, the homologous chromosomes come together and form pairs, a process called:

A. Linkage
B. √ Synapsis
C. Pleiotropy
D. Corssing over
E. Epistasis

31. Mutual exchange of segments of chromosomes is called:

A. Linkage
B. Synapsis
C. Pleiotropy
D. Linking over
E. √ Crossing over

32. Number of chromosomes present in Male Grasshopper:

A. 16
B. 20
C. √23
D. 24
E. 26

33. Number of Autosomes present in humans:

A. 38
B. 40
C. 42
D. √ 44
E. 46

34. The human female possesses a genotype of:

A. 40 + XY
B. 40 + XX
C. 42 + XX
D. 43 + XX
E. √ 44 + XY

35. The human male possesses a genotype of:

A. 40 + XY
B. 40 + XX
C. √ 44 + XY
D. 42 + XY
E. 46 + XY

36. Any genetic trait which is transmitted through sex chromosomes is called:

A. Single Trait Inheritance
B. √ Sex Linked Inheritance
C. Intermediate Inheritance
D. Inheritance of Two Traits
E. Autosomal Inheritance

37. Sex determination in Drosophila was done by:

A. √ T. H. Morgan
B. Rudolf Virchow
C. Bateson
D. Gregor John Mendel
E. Matthew Mesclson

38. Acquiring of information about the phenotypes of family members to infer the genetic nature of a trait from the pattern of its inheritance is:

A. Maternal analysis
B. Paternal analysis
C. √ Pedigree analysis
D. Chromosomal analysis
E. Genes analysis

39. Persons suffering from colour blindness hae difficulty in distinguishing:

A. Blue from green
B. Red from blue
C. Yellow from Orange
D. Red from Yellow
E. √ Red from Green

40. Regarding colour blindness, "when a normal male marries carrier female", which is the correct statement?

A. All daughter will be colour blind
B. All sons will be colour blind
C. All daughters are normal but carriers
D. √ Half of the sons will be colour blind
E. Half of the daughter will be colour blind

41. Diabetes Mellitus is caused by a deficiency of:

A. √ Insulin
B. Glucagon
C. Thyroid
D. Aldosterone
E. Cortisone

42. Type II Diabetes Mellitus usually occurs after about age:

A. 20
B. 30
C. √ 40
D. 50
E. 60

43. The result obtained from mono hybrid cross is spoken as

A. Test Cross
B. Intermediate Inhentance
C. Inheritance of two traits
D. √ Single trait inheritance
E. Codominance

44. When red-eyed female (X^RX^R) is cross with white cyed male (X'Y) the F_2 generation shows red-eyed & white-eyed, this is ratio of:

A. 4:1
B. 1:1
C. 1:3
D. 2:1
E. √ 3:1
