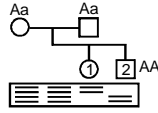
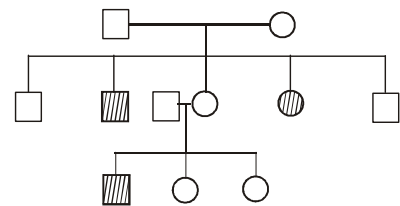


1. The pedigree and the corresponding autoradiograph of restriction map of a family with two children is shown below. The genotype of child 1 is **(4th NSEB)**



- (a) Aa (b) aa
 (c) AA (d) Can't be determined
2. In complementary genes, the dihybrid ratio of 9 : 3 : 3 : 1 is modified to
- (a) 9 : 7 (b) 12 : 3 : 1
 (c) 15 : 1 (d) 13 : 3.
3. Most favourite and ideal material for researches in genetics is
- (a) Housefly (b) Mosquito
 (c) Frog (d) Fruitfly.
4. A mutation at a gene locus changes a character due to change in
- (a) DNA replication (b) Protein synthesis pattern
 (c) RNA transcription pattern (d) Protein structure
5. For finding the different types of gametes produced by genotype AaBb, it should be crossed with genotype
- (a) AABB (b) aabb
 (c) AaBb (d) aaBB.
6. Sickle cell anaemia has not been eliminated from African population as
- (a) It is controlled by dominant genes (b) It is controlled by recessive genes
 (c) It is not a fatal disease (d) It provides immunity against malaria
7. Test cross involves
- (a) Crossing between two genotypes with dominant trait
 (b) Crossing between two genotypes with recessive trait
 (c) Crossing the F₁ hybrid with double recessive genotype
 (d) Crossing between two F₁ hybrids.



8. Study the pedigree chart given below

What does it show:

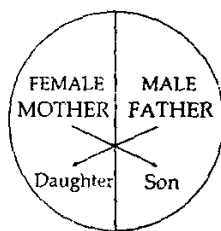
- (a) Inheritance of a recessive sex-linked disease like haemophilia

- (b) Inheritance of a sex-linked inborn error of metabolism like phenylketonuria
- (c) Inheritance of condition like phenylketonuria as an autosomal recessive trait
- (d) The pedigree chart is wrong as this is not possible

9. Which one of the following conditions **correctly** describes the manner of determining the sex in the given example
(AIPMT- 2011)

- (a) Homozygous sex chromosomes (ZZ) determine female sex in Birds .
- (b) XO type of sex chromosomes determine male sex in grasshopper
- (c) XO condition in human as found in Turner Syndrome, determines female sex.
- (d) Homozygous sex chromosomes (XX) produce male in *Drosophila*.

10. Represented below is the inheritance pattern of a certain type of traits in humans. Which one of the following conditions could be an example of this pattern ?



- (a) Phenylketonuria
- (b) Sickle cell anaemia
- (c) Haemophilia
- (d) Thalassemia

11. If two persons with 'AB' blood group marry and have sufficiently large number of children, these children could be classified as 'A' blood group: 'AB' blood group: 'B' blood group in 1:2 :1ratio. Modern technique of protein electrophoresis reveals presence of both 'A' and 'B' type proteins in 'AB' blood group individuals. This is an example of:

(NEET- 2013)

- (a) Incomplete dominance
- (b) Partial dominance
- (c) Complete dominance
- (d) Codominance

12. A human female with Turner's syndrome:

- (a) has 44 chromosomes with XO
- (b) has one additional X chromosome.
- (c) exhibits male characters
- (d) is able to produce children with normal husband.

13. Which one of the following is not applicable to RNA?

- (a) 5' phosphoryl and 3' hydroxyl ends
- (b) Heterocyclic nitrogenous bases
- (c) Chargaff's rule
- (d) Complementary base pairing

14. In a testcross involving F_1 dihybrid flies, more parental-type offspring were produced than the recombinant-type offspring. This indicates:

- (a) Both of the characters are controlled by more than one gene.
- (b) The two genes are located on two different chromosomes.
- (c) Chromosomes failed to separate during meiosis.
- (d) The two genes are linked and present on the same chromosome.

15. The genotypes of a Husband and Wife are $I^A I^B$ and $I^A i$.

Among the blood types of their children how many different genotypes and phenotypes are possible

- (a) 3 genotypes ; 3 phenotypes (b) 3 genotypes; 4 phenotypes
 (c) 4 genotypes ; 3 Phenotypes (d) 4 genotypes ; 4 phenotypes

16. Strength of linkage is related inversely to distance between .

- (a) Genes (b) Chromatids
 (c) Chromosomes (d) Telomeres

17. Which represents correct hexaploid nature of Wheat

	Monosomic	haploid	Nullisomic	Trisomic
(a)	12	28	42	43
(b)	7	28	40	42
(c)	21	7	42	43
(d)	41	21	40	43

18. Grain colour in wheat is determined by three pairs of polygenes. Following the cross $AABBCC$ (dark colour) X $aa bb cc$ (light colour), in F_2 generation what proportion of progeny is likely to resemble either parent?

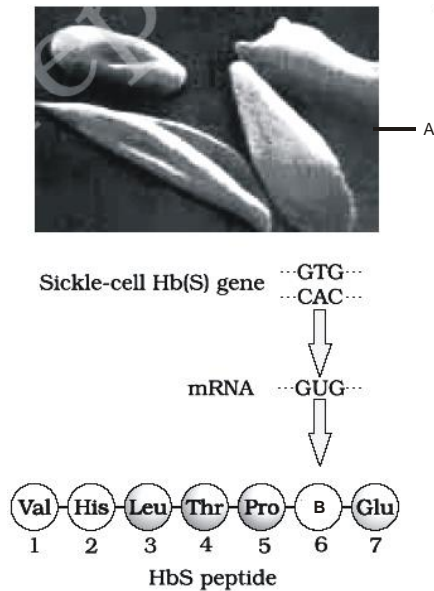
(AIIMS - 2007)

- (a) One third (b) Half
 (c) Less than 5 percent (d) None of the above

19. There are three genes a, b, c. Percentage of crossing over between a and b is 20%, and c is 28% and a and c is 8%. What is the sequence of genes on chromosome?

- (a) b,a,c (b) a,b,c
 (c) a,c,b (d) None of these

20. Which of the following is true for given diagram



- (a) A → Autosomal dominant (b) B → Glutamic acid
 (c) B → Valine (d) It is caused due to bacteria

21. In *Mirabilis jalapa*, red flowered plant is crossed with white flowered plant. What will the phenotypic ratio in F₂ generation.
- (a) 1 : 1 : 1 (b) 1 : 2 : 1
(c) 3 : 1 (d) 1 : 1
22. Klinefelter's syndrome results from the fusion of
- (a) An X egg and a YY sperm
(b) An XY egg and X sperm
(c) An Xx egg and a Y sperm
(d) An XX egg and a YY sperm
23. Linkage reduces the frequency of –
- (a) Hybrids
(b) All parental types
(c) Homozygous recessive parents
(d) Heterozygous recessive parents
24. In a particular plant, two genes control leaf shape and color. Round leaves (R) are dominant to jagged leaves (r). Yellow fruits (Y) are dominant to white fruits (y). A true-breeding round-leaved, yellow-fruited plant is mated with a jagged-leaved, white-fruited plant. What are the genotypes of the plants involved in this cross?
- (a) RRYy x RRYy (b) RRYy x rryy
(c) RrYy x RrYy (d) RrYy x rryy
25. Chromosomal aberration occurs due to
- A. deletion B. duplication
C. inversion D. translocation
- (a) A, C, D (b) A, B, C, D (c) B, C, D (d) A, B, C
26. A. Myotonic dystrophy is an autosomal dominant trait.
B. Sickle cell anemia is an autosomal recessive trait.
C. Cystic fibrosis is a Mendelian disorder.
D. Failure of segregation of chromatids during cell division cycle results in the gain or loss of a chromosome(s) called aneuploidy.
- (a) Only C is incorrect (b) All incorrect
(c) Only C is correct (d) All are correct
27. Crossing over involves
- (a) Chiasmata (b) Recombination
(c) Termination (d) All
28. Which of the following statements is a basic summary of Mendel's laws?
- (a) All good human genetic traits are dominant, and harmful traits are recessive.
(b) The pattern of inherited characteristics of organisms is not predictable.
(c) Alleles separate into different gametes during meiosis, and the separation of alleles for one gene does not affect the separation of alleles for other genes.
(d) Recessive alleles cause the death of the gamete.
29. Which of the following statements is generally true?
- (a) A dominant allele is weaker the phenotype when paired with a recessive allele.
(b) A recessive allele is weaker than a dominant allele.
(c) A recessive allele does not make its gene product when paired with a dominant allele.
(d) A dominant allele is always better for an organism.
30. Which of the following statements is true?
- (a) Mendel's laws are less accurate than Punnett square results.
(b) Mendel's laws are useful only in unusual situations.
(c) Mendel's laws always correctly determine how genes are inherited.
(d) Mendel's laws always correctly predict the phenotype of an organism.

1. (b)
2. (a)
3. (d)
4. (d)
5. (b)
6. (d)
7. (c)
8. (c)
9. (b)
10. (c)
11. (d)
12. (a)
13. (c)
14. (d)
15. (c)
16. (a)
17. (d)
18. (c)
19. (a)
20. (c)
21. (b)
22. (c)

23. (a)

24. (b)

25. (b)

26. (d)

27. (d)

28. (c)

29. (a)

30. (c)