



BIOLOGY

BOOKS - TRUEMAN BIOLOGY

PRINCIPLES OF INHERITANCE AND VARIATIONS

Mcqs

1. Small unstable variations which fluctuate on either side of an average condition are known as

- A. continuous
- B. discontinuous
- C. blastogenic
- D. germinal

Answer: A



Watch Video Solution

2. Marriages in close blood relatives result into deformed babies because of receiving

- A. dominant alleles
- B. two copies of same recessive allele
- C. a deleted piece of DNA from mother
- D. two copies of dominant alleles

Answer: B



Watch Video Solution

3. The ultimate source of variations is

- A. natural selection
- B. sexual reproduction
- C. mutations
- D. hormonal actions

Answer: C



Watch Video Solution

4. Test cross is performed to know the genotype. It is cross between

- A. F_1 hybrid with dominant parent
- B. F_2 hybrid with dominant parent

C. two F_1 hybrids

D. None of the above

Answer: B



Watch Video Solution

5. A cross between hybrid and either of any parent is called

A. test cross

B. reciprocal cross

C. monohybrid cross

D. back cross

Answer: D



Watch Video Solution

6. To see the effect of sex on inheritance, Mendel performed

- A. test cross
- B. cross
- C. out cross
- D. reciprocal cross

Answer: C

 [Watch Video Solution](#)

7. Drosophila of plant kingdom is

- A. Arabidopsis thaliana
- B. Aspergillus (green mould)

C. Maize

D. All of the above

Answer: A



Watch Video Solution

8. Segregation of genes occurs in

A. Embryo formation

B. Anaphase I

C. Anaphase II

D. Metaphase II

Answer: B



Watch Video Solution

9. Heterozygosity protects _____ from elimination by natural selection

- A. recessive alleles
- B. dominant alleles
- C. multiple factors
- D. genomes

Answer: A

 [Watch Video Solution](#)

10. Mendel failed to get linkage because

- A. genes of seven types of traits selected by him were located on four different chromosomes and behaved independently
- B. genes selected by him were discrete and stable
- C. genes selected by him were located on seven non homologous chromosomes
- D. pea plant does not show linkage

Answer: A

 [Watch Video Solution](#)

11. Mendel failed to produce same result in

- A. Hieracium (Hawk weed)
- B. Mango
- C. Drosophila

D. None of the above

Answer: A



[Watch Video Solution](#)

12. The garden/edible pea (*Pisum sativum*) was selected by Mendel for his experiments for reason/s that

- A. many varieties are available with observable alternative forms for a trait
- B. it is usually cross pollinated
- C. it is a perennial plant
- D. all are correct

Answer: A



13. From a cross $AABb \times aaBb$, the genotypes $AaBB:AaBb:Aabb,aabb$ are obtained in ratio

- A. 1:1:1:1
- B. 1:2:1:0
- C. 0:3:1:0
- D. 1:1:1:0

Answer: B

14. The Mendelian principles of inheritance were rediscovered by

- A. Sutton and Boveri

B. Hugo de Vries, Tschermak and Correns

C. Lederberg and Tatum

D. Morgan

Answer: B



[Watch Video Solution](#)

15. Mendel is said to be lucky because genes of seven types of traits selected by him in pea did not show

A. linkage

B. dominance

C. segregation

D. crossing over

Answer: A



Watch Video Solution

16. If Mendel had considered eighth trait in pea, which law might have failed?

- A. Law of segregation
- B. Law of purity of gametes
- C. Law of independent assortment
- D. law of dominance

Answer: C



Watch Video Solution

17. An exception (deviation) to Mendelian law of independent assortment is

- A. crossing over
- B. incomplete dominance
- C. segregation
- D. linkage

Answer: D



Watch Video Solution

18. In a multiple allele system a gamete comes to have

- A. several alleles
- B. three alleles

C. one allele

D. two alleles

Answer: C



Watch Video Solution

19. A dwarf pea plant is treated with gibberellin which makes it tall. This plant is crossed with genetically pure tall plant. Phenotypic ratio in next generation shall be

A. 3 tall : 1 dwarf

B. 50% tall: 50% dwarf

C. all tall

D. all dwarf

Answer: C



Watch Video Solution

20. A trihybrid cross is made between two yeasts, both with genotype AaBbCc. What proportion of the offspring will be of the genotype aabbcc?

A. 0

B. $\frac{1}{4}$

C. $\frac{1}{16}$

D. $\frac{1}{64}$

Answer: D



Watch Video Solution

21. A test cross distinguishes between :

- A. two homozygous forms
- B. a homozygous dominant and a heterozygous form
- C. a homozygous recessive and a heterozygous form
- D. two heterozygous forms

Answer: B

 [Watch Video Solution](#)

22. In man brown eyes are dominant over blue eyes. A blue eyes mother and brown eyed father have 50% blue eyes and 50% brown eyes children. What type of cross it involved?

- A. Back cross
- B. Test cross
- C. Out cross

D. Reciprocal cross

Answer: B



Watch Video Solution

23. Which of the following characters of pea was not studied by mendel?

A. Height of plant

B. Size of seed

C. Colour of pod

D. Shape of pod

Answer: B



Watch Video Solution

24. A trihybrid ratio of 27:9:9:9:3:3:3:1 is obtained because of

- A. multiple alleles
- B. interaction of genes
- C. multiple factor inheritance
- D. independent assortment of genes

Answer: D



[Watch Video Solution](#)

25. Expected children of a blue - eyed (recessive) woman and brown eyed (dominant) man who had a blue had a blue eyes mother are likely to be

- A. all brown eyed

B. all blue eyed

C. one blue eyed and one brown eyed

D. three blue eyed and one brown eyed

Answer: C



Watch Video Solution

26. To a heterozygous curly (dominant) haired mother and straight haired father, 8 children are born. The ratio of curly and straight haired will be

A. 6:2

B. 4:4

C. 2:6

D. 3:5

Answer: B



Watch Video Solution

27. How would you produce four O'clock seeds, all of which should yield pink coloured flowers when sown?

A. $\mathbb{R} \times rr$

B. $Rr \times rr$

C. $Rr \times Rr$

D. $\mathbb{R} \times Rr$

Answer: A



Watch Video Solution

28. A tobacco plant heterozygous for recessive trait of albinism is selfed and 1200 seeds are obtained. How many seedlings obtained from such seeds will have parent genotype?

A. 900

B. 300

C. 600

D. 1200

Answer: C

 [Watch Video Solution](#)

29. An individual heterozygous for two alleles ($AaBb$) produces two million sperms. How many of the sperms will have both recessive alleles

A. 0.5 million

B. 1 million

C. 2 million

D. 0.25 million

Answer: A



Watch Video Solution

30. A homogamous tall pistillate plant (T T) is crossed with homogamous dwarf staminate plant (t t). What is the genotype of endosperm ?

A. TTt

B. ttT

C. ttt

D. TTT

Answer: A



[Watch Video Solution](#)

31. Which one of the following individuals can produce 16 different gametes?

A. Aa Bb cc Dd

B. Aa Bb cc DD Ee Ff

C. Aa Bb Cc dd EE FF

D. Aa Bb Cc DD Ee Ff

Answer: B



[Watch Video Solution](#)

32. Which one of the following crosses shows phenotypic ratio of 3:1?

A. $AaBb \times AaBb$

B. $aabb \times AABb$

C. $Aabb \times Aabb$

D. $AaBb \times aabb$

Answer: C



[Watch Video Solution](#)

33. A cross is made between F_1 (that carries two heterozygous pairs of alleles of tall and red) and a full double recessive combination for these two genes (dwarf and white). The expected progeny will have

A. all tall and red

B. tall and red, tall and white, dwarf and white in 1:2:1 ratio

C. tall and red: dwarf and white in 1:1 ratio

D. tall and red: tall and white: dwarf and red: dwarf and white
flowered plants in 1:1:1:1 ratio

Answer: D



[Watch Video Solution](#)

34. A family has 5 daughters. Probability of 6th child being boy will be

A. 1 in 2

B. 1 in 5

C. 1 in 3

Answer: A



Watch Video Solution

35. From a single ear of corn, a farmer planted 200 kernels which produced 140 tall and 40 short plants. The genotypes of these offspring are most likely

- A. TT and tt only
- B. TT and Tt only
- C. Tt and tt only
- D. TT, Tt and tt

Answer: D



Watch Video Solution

36. A pure dwarf plant was subjected to X-ray treatment, which mutated them to reach the height of a pure tall plant. This new plant was crossed with a hybrid tall. What will be the result of progeny?

- A. all tall and red
- B. Tall and dwarf in 1:1 ratio
- C. All dwarf
- D. Tall and dwarf in 2:1 ratio

Answer: A



Watch Video Solution

37. A man with pure blue eyes and pure black hair marries a woman with black eyes and red hair. (black eyes are dominant over blue eyes and black hair over red hair). What will be the probabilities of phenotypes of the children?

- A. 50% with black eyes and black hair, and 50% blue eyes and black hair
- B. All will be with black eyes and black hair
- C. Both the above cases are possible
- D. 1:1:1:1

Answer: C



Watch Video Solution

38. A couple believed that they have brought the wrong baby home from the hospital. The wife is of blood group O, her husband of group B and child of group O. could baby be theirs?

- A. chances are 50%
- B. chances are 100%
- C. chances are 25%
- D. chances are 75%

Answer: A

 [Watch Video Solution](#)

39. The height of a plant is under the control of polygenic inheritance. The genotype of a plant $A_1A_1A_0A_0$ has 56 cm and

the height of plant $a_1a_1a_0a_0$ is 26 cm. what is the contribution, of each polygene?

A. 30 cm

B. 8.5 cm

C. 15 cm

D. 7.5 cm

Answer: D



Watch Video Solution

40. In Andulassian fowl, the heterozygous condition of alleles for black plumage (B) and white (b) is blue. A blue andulassian fowl is bred to a black andulassian fowl, the proportion of the offspring will be

- A. 50% white: 50% blue
- B. 50% black: 50% blue
- C. 50% black: 50% white
- D. 25% black: 25% blue: 50% white

Answer: B



Watch Video Solution

41. Ratio in dihybrid cross -

- A. 9 : 3 : 3 : 1
- B. 1 : 1 : 1 : 1
- C. 1 : 2 : 1
- D. 1 : 7 : 1

Answer: B



Watch Video Solution

42. An embryo resulting from the mating of two albino (recessive) rabbits is transplanted into the uterus of a brown rabbit. The phenotype of this transplant will most probably be

- A. brown with white spots
- B. all brown
- C. white with brown spots
- D. all white

Answer: D



Watch Video Solution

43. Which law of Mendel holds good even in this modern period of cytogenetics?

- A. Law of independent assortment
- B. Law of purity of gametes
- C. Law of dominance
- D. all of the above

Answer: B



[Watch Video Solution](#)

44. In man brown eye is dominant over blue. A lady with brown eyes, whose father was blue eyed is married to a man with blue eyes. What percentage of her progeny will be blue eyed

- A. 0

B. 0.25

C. 1

D. 0.5

Answer: D



Watch Video Solution

45. A monohybrid cross between two plants, one having 22cm long internodes and the other having 12 cm long internodes, produced F_1 hybrids all off 18 cm long internodes. This is a case of

A. incomplete dominance

B. complete dominance

C. multiple allelism

D. recessive dominants

Answer: A



Watch Video Solution

46. In a breeding experiment between two parents showing the dominant and the recessive phenotype of the character. The offspring showed equal proportions of the dominant and recessive phenotypes. Which one of following statement must be true?

- A. Both the parents has equal number of genes for the character
- B. Both the parents carried recessive genes
- C. Both the parents were true breeding

D. all are true

Answer: B



Watch Video Solution

47. If mother has 'O' blood group, child also has 'O' group. What can be the blood group of father?

1. O

2. A

3. B

4. all are possible

A. O

B. A

C. B

D. all are possible

Answer: D



Watch Video Solution

48. Father's blood group is A and his son has 'O' group. Which of the blood group can not be present in mother?

1. A

2. B

3. O

4. AB

A. A

B. B

C. O

D. AB

Answer: D

 [Watch Video Solution](#)

49. A man with blood group 'A' marries a woman with blood group 'B'. What are all the possible blood groups of their offspring?

A. A,B

B. B,AB

C. A,B,AB,O

D. A,B,O

Answer: C

 [Watch Video Solution](#)

50. Blood group O is universal donor because

- A. it has no antigen to clump with any antibody of recipient
- B. it has no antibody to clump with antigen of recipient
- C. both 1 and 2
- D. no definite answer is known

Answer: A



[Watch Video Solution](#)

51. If an unknown blood is added to antiserum it will be of

- A. A' group if there is no clumping of RBC
- B. A' or 'AB' if there is clumping of RBC
- C. O group if there is poor clumping of RBC

D. none of the above

Answer: B



Watch Video Solution

52. Study of interaction of antigen and antibody in blood is termed

A. serology

B. immunity

C. pathology

D. microbiology

Answer: A



Watch Video Solution

53. A man with blood group A marries a woman having blood group AB. Which of the following types in the progeny of this couple would show that the man is heterozygous

- A. Type O
- B. Type A
- C. Type B
- D. all of these

Answer: C

 [Watch Video Solution](#)

54. What will happen if blood of 'B' group is given to a patient of group 'A'?

- A. Recipient dies due to clumping of RBC of transfused blood
- B. Recipient dies due to clumping of RBC of his own
- C. Recipient remains normal
- D. None of these

Answer: A

 [Watch Video Solution](#)

55. Which of the following should be avoided in biological marriage?

- A. A^+ boy and A^+ girl
- B. A^+ boy and A^- girl
- C. O^+ boy and O^+ girl
- D. O^- boy and O^+ girl

Answer: B

 [Watch Video Solution](#)

56. A child born of parents having 'O' and 'AB' groups can not possess

- A. A' group
- B. AB' group
- C. B' group
- D. both 'AB' & 'O' group

Answer: D

 [Watch Video Solution](#)

57. ABO blood group system is an example of

- A. dominant-recessive relationship
- B. polygenes
- C. codominance
- D. codominant and dominant recessive relationship

Answer: D



Watch Video Solution

58. Agglutinogens are found in

- A. blood plasma
- B. RBC surface
- C. WBC

D. platelets

Answer: B



Watch Video Solution

59. Antiserum used in testing blood groups has

A. antibodies

B. antigens

C. leucocytes

D. RBCs

Answer: A



Watch Video Solution

60. Epistasis is a type of gene interaction showing

- A. Control of a phenotype by three genes
- B. masking of the effect of a gene by a nonallelic locus
- C. producing a new character when two nonallelic genes happen together in an individual
- D. enhancing the effect of a gene by a nonallelic gene

Answer: B

 [Watch Video Solution](#)

61. Development of purple flower character when two white flower strains of sweet pea are crossed, is an example of

- A. multiple factor inheritance

B. multiple allele inheritance

C. supplementary genes and gene interaction

D. complementary genes and gene interaction

Answer: D



Watch Video Solution

62. Hb^A and Hb^S alleles of normal and sickle cell haemoglobin are

A. codominant alleles

B. multiple alleles

C. polygenic alleles

D. cumulative alleles

Answer: A



Watch Video Solution

63. Consanguineous marriages (marriages between close relatives/cousins) are not advisable because

- A. more recessive defects are likely to occur
- B. more chances of blood anomalies
- C. more chances of multiple births
- D. more chances of defective dominant traits to appears

Answer: A



Watch Video Solution

64. Multiple gene inheritance takes into account

- A. discontinuous traits
- B. continuous traits
- C. co-dominance
- D. incomplete dominance

Answer: B



[Watch Video Solution](#)

65. The genes controlling the seven pea characters studied by Mendel are now investigated by Blix, to be located on four different chromosomes which are

- A. 2,3,1,1

B. 1,4,5,7

C. 1,2,3,7

D. 1,3,4,7

Answer: B



Watch Video Solution

66. In F_2 generation, a ratio of 1:4:6:4:1 is obtained instead of 9:3:3:1, when two pairs of genes are considered, it indicates

A. incomplete dominance

B. quantitative inheritance

C. qualitative inheritance

D. pleiotropic effect of genes

Answer: B

 [Watch Video Solution](#)

67. Polygenic traits include

- A. skin colour and weight in human beings
- B. kernel colour in wheat
- C. cob size of maize
- D. all of the above

Answer: D

 [Watch Video Solution](#)

68. Sickle cell anaemia is due to substitution/transversion (point mutation) in which

- A. instead of glutamic acid, valine comes at number 6th position in one of β chain of Hb
- B. instead of valine, glutamic acid is inserted at number 6th position of β -chain of Hb
- C. valine is inserted at number 6th position in α chain of Hb
- D. glutamic acid is substituted by valine at number 6th position of α -chain of Hb

Answer: A



Watch Video Solution

69. 12: 3: 1 ratio is due to which type of gene interaction

- A. dominant epistasis
- B. recessive epistasis
- C. supplementary gene intereaction
- D. complementary gene interaction

Answer: A



[Watch Video Solution](#)

70. Selection will not eliminate a lethal recessive gene from a large population because

- A. there are always some heterozygote carriers of the allele
- B. gene fixation occurs in population

C. heterozygotes are at a selective advantage

D. rate of mutation to the lethal allele is high

Answer: A



Watch Video Solution

71. A modified dihybrid mendelian ratio of 9:3:4 shows

A. supplementary genes

B. complementary genes

C. lethal genes

D. duplicate

Answer: A



Watch Video Solution

72. Failure of one gene to express it in the presence of a non-allelic gene is known as

- A. codominance
- B. hypostasis
- C. incomplete dominance
- D. epistasis

Answer: B

 [Watch Video Solution](#)

73. If a negro marries a white skin female, the mulattoes are born. If such mulattoes intermarry, progeny will show a gradual gradation of skin colour in ratio of:-

A. 9:3:3:1

B. 1:4:6:4:1

C. 1:4:6:15:20:15:6:4:1

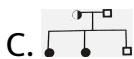
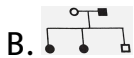
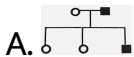
D. 1:6:15:20:15:6:1

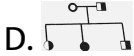
Answer: D

 [Watch Video Solution](#)

74. Wife is PTC nontaster and husband is PTC taster. Their son is taster but daughters are nontasters. This is not a sex linked trait.

Which pedigree is correct?

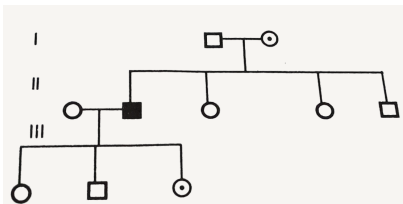




Answer: A

 [Watch Video Solution](#)

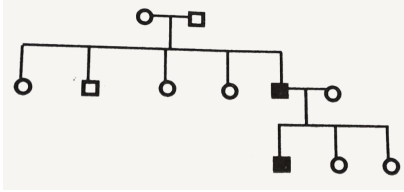
75. Predict from the following chart



- A. Character is dominant and carried by X chromosome
- B. character is carried by Y chromosome
- C. character is sex linked recessive
- D. character is recessive autosomal

Answer: C

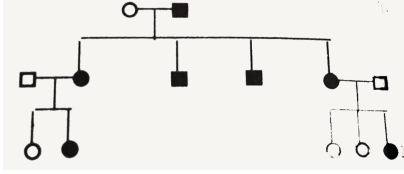
76. In the following pedigree chart, the mutant trait is shaded black. The gene responsible for the trait is



- A. dominant and sex linked
- B. dominant but autosomal
- C. recessive and sex limited
- D. recessive and autosomal

Answer: D

77. In the given pedigree, what the shaded symbols indicate



1. Dominant

2. recessive epistasis

3. Codominant

4. Sex linked recessive

A. Dominant

B. recessive epistasis

C. Codominant

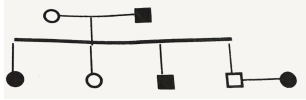
D. Sex linked recessive

Answer: A



Watch Video Solution

78. From the pedigree of a family given below, it is clear that trait is inherited as dominant autosomal trait. What will be the genotype of mother and father?



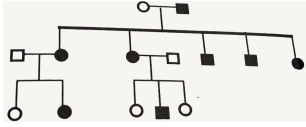
- A. mother is aa and father is Aa
- B. father is AA and mother is aa
- C. father is Aa and mother is Aa
- D. none of the above

Answer: A

 [Watch Video Solution](#)

79. In a family, father had a trait but mother did not. All their sons and daughters had this trait. The same trait was found in some

grand daughters, through daughters were married to normal persons.



In this pedigree the genotypes of father, mother and husbands of daughters are

- A. father is AA, mother is aa, husbands are aa.
- B. father is AA, mother is aa, and husbands are AA
- C. father is aa, mother is Aa, husbands AA
- D. father is AA, mother AA, one husbands is Aa and second husband aa

Answer: A



Watch Video Solution

80. Which gene is connected with multiple phenotypes?

- A. Epistasis
- B. Pleiotropy
- C. Polygenic inheritance
- D. hypostasis

Answer: B



[Watch Video Solution](#)

81. If both parents are albino, all the offspring shall be

- A. albino
- B. some albino, some normal
- C. homozygous normal

D. heterozygous normal

Answer: A



Watch Video Solution

82. Albinism is due to nonsynthesis (absence) of melanin on account of absence of

A. melaninase

B. luciferase

C. tyrosinase

D. lysine

Answer: C



Watch Video Solution

83. A recessive trait in garden pea is

- A. wrinkled seeds
- B. tall stem
- C. round seeds
- D. coloured seed coat

Answer: A



Watch Video Solution

84. Which is correct about traits chosen by Mendel ?

- A. Terminal pod is dominant
- B. constricted pod is dominant
- C. Green coloured pod is dominant

D. Tall plants are recessive

Answer: C



Watch Video Solution

85. "Gametes are never hybrid ". It is a statement of law of

A. dominance

B. segregation

C. independent assortment

D. random fertilisation.

Answer: B



Watch Video Solution

86. 23 pairs of chromosomes can give rise to how many combinations?

A. 8.6 millions

B. 7.6 million

C. 6.6 million

D. 5.6 million

Answer: A



[Watch Video Solution](#)

87. R is dominant red flower trait while r is recessive white flower trait. Heterozygous Rr (red) is crossed with homozygous red flowered plant. 64 offspring are produced. Number of white flowered plants is:-

A. 64

B. 32

C. 16

D. 0

Answer: D



Watch Video Solution

88. 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

Answer: A

 [Watch Video Solution](#)

89. Select the statement which is not correct?

- A. Polygenic character is controlled by multiple alleles
- B. In case of polygenic inheritance many intermediate phenotypes are found between 2-extreme ones
- C. Height, weight, skin colour are polygenic
- D. Polygenic character is controlled by multiple genes

Answer: A

 [Watch Video Solution](#)

90. On selfing a plant of F_1 -generation with genotype "AABbCC", the phenotypic ratio in F_2 -generation will be

A. 3:1

B. 1:1

C. 9:3:3:1

D. 27:9:9:9:3:3:3:1

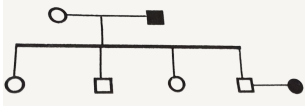
Answer: A



Watch Video Solution

91. Individual with solid symbol is sufferer of a genetic disease due to recessive autosomal allele. You would counsel a couple explaining the probability of their grand children to have the

disease is



A. 0

B. 0.25

C. 0.5

D. 1

Answer: C

 [Watch Video Solution](#)

92. Rh factor found in man and Rhesus monkey was discovered by

A. Landsteiner and Weiner

B. Willian Harvey

C. de castello and sturli

D. Rhesus

Answer: A



[Watch Video Solution](#)

93. Gene is a stable discrete unit of information (heredity). This term gene was coined by

A. Johanssen

B. hensen

C. Mendel

D. Morgan

Answer: A



[Watch Video Solution](#)

 [Watch Video Solution](#)

94. The type of inheritance shown by Mendel in pea is:-

- A. monogenic inheritance
- B. polygenic inheritance
- C. quantitative inheritance
- D. cytoplasmic inheritance

Answer: A

 [Watch Video Solution](#)

95. A gene which can occur in more than two alternative forms present on the same locus is called

- A. polygene (multiple gene)

B. pleiotropic gene

C. multiple allele

D. lethal gene.

Answer: A



Watch Video Solution

96. Male honey bee has 16 chromosomes. What is the number chromosomes in worker and queen honey bee?

A. $n=32$

B. $2n=32$

C. $n=16$

D. $2n=16$

Answer: B

 [Watch Video Solution](#)

97. Balbiani rings are found in

- A. polytene chromosomes
- B. diplotene chromosomes
- C. Z-DNA
- D. Lampbrush chromosome

Answer: C

 [Watch Video Solution](#)

98. In plants maximum number of chromosomes ($2n=1262$) are found in

- A. *Ophioglossum reticulatum*
- B. *Haplopappus gracilis*
- C. *Saccharum officinarum*
- D. none of the above

Answer: C



[Watch Video Solution](#)

99. Unit of distance between genes in a chromosome is known as

- A. C-DNA
- B. Morgan

C. Centimorgan

D. Spacer

Answer: A



[Watch Video Solution](#)

100. To make a karyotype, chromosomes are photographed during :

A. fertilization

B. mitosis

C. meiosis

D. s-phase

Answer: B



[Watch Video Solution](#)



[Watch Video Solution](#)

101. In haploids, both recessive and dominant limitations express themselves because

- A. there is single allele for each trait
- B. there are two alleles for each character
- C. there are two genes for each character
- D. there are many alleles for each trait

Answer: A



[Watch Video Solution](#)

102. *Drosophila* is used in the study of genetics because

- A. it is hermaphrodite

B. generation period is 90-120 simple

C. chromosome complement is simple with three pairs of autosomes and XY sex chromosomes where Y chromosome is hooked

D. al of the above

Answer: C

 [Watch Video Solution](#)

103. According to Chromosome theory of linkage of morgan and castle(1912)

A. genes lie in a leanear order in the chromosomes

B. strength of linkage between two successive genes is inversely proportional to distance between two genes

C. linked genes occur on the same chromosome

D. all the above are correct

Answer: D



Watch Video Solution

104. Gynandromorphs appear in *Drosophila* because of

A. loss of X-chromosome

B. autosomal loss

C. mutation

D. gain of Y-chromosome

Answer: A



Watch Video Solution

105. In Bugs, cockroach and roundworms, the males possess

- A. one chromosome less than the female
- B. two similar sex chromosomes
- C. one chromosome different from rest
- D. a Y-chromosome

Answer: A



[Watch Video Solution](#)

106. Females are heterogametic amongst

- A. human beings
- B. drosophila

C. both 1 and 2

D. birds

Answer: D



Watch Video Solution

107. Father of experimental genetics is

A. Mendel

B. Hugo de Vries

C. Morgan

D. Archibald garrod

Answer: C



Watch Video Solution

108. Who proved that genes are located on chromosomes?

A. Sutton and Boveri (1902)

B. Johanssen (1909)

C. Morgan (1910)

D. Muller (1927)

Answer: C



Watch Video Solution

109. ZO-ZZ type of sex determination is

A. opposite of XX-XO type

B. opposite of XX-XY

C. opposite of ZZ-ZN type

D. gynander

Answer: A



Watch Video Solution

110. Chromosome theory of inheritance was put forward by

A. Fleming (1892)

B. Sutton and Boveri independently (1902)

C. Correns (1909)

D. Boveri (1887)

Answer: B



Watch Video Solution

111. The coupling and repulsion theory of Bateson and Punnett later on modified linkage and crossing over by Morgan. Two completely linked genes show a dihybrid ratio of

A. 1:1

B. 3:1

C. 1:1:1:1

D. 9:3:3:1

Answer: B



[Watch Video Solution](#)

112. A dihybrid test cross ratio for two linked genes in a hybrid is

A. 1:1

B. 1:1:1:1

C. 7:1:1:7

D. 1:7:7:1

Answer: A



Watch Video Solution

113. Interference is

1. decrease in frequency of crossing over because of heterochromatin
2. chiasma at one point disfavours formation of chiasma at second point
3. both correct
4. none of the above

- A. decrease in frequency of crossing over because of heterochromatin
- B. chiasma at one point disfavours formation of chiasma at second point
- C. both correct
- D. none of the above

Answer: B



[Watch Video Solution](#)

114. A diploid with only one allele (e.g., man is for XY chromosomes) is known as

- A. homozygous
- B. hemizygous

C. heterozygous

D. none of these

Answer: B



[Watch Video Solution](#)

115. Which of the following genetic events represents a case of incomplete linkage?

A. Expression of heterozygous phenotype which is distinct from and often intermediate to that of either parent

B. Inheritance between genes so that one gene prevents expression of other gene

C. A condition in which the phenotypic effect of a gene's alleles are simultaneously expressed in heterozygote

D. Occasional separation of two genes on the same chromosome by a recombinant event.

Answer: D

 [Watch Video Solution](#)

116. A homozygous red eyed female was mated with white eyed male, a daughter from F_1 generation was also mated with white-eyed male. Red eye is dominant over white eye and is a sex linked trait. In the progeny from this second mating.

- A. all males and females have red eyes
- B. all males and females have white eyes
- C. all males have red eyes, all females have white eyes

D. males and females have red eyes and white eyes in the ratio of 1:1

Answer: D

 [Watch Video Solution](#)

117. Translocation occurs during spontaneous chromosomal aberrations. During translocation there is

- A. an addition of a segment of a chromosome to same chromosome
- B. loss of a segment of chromosome
- C. transfer of a segment of a chromosome to a different chromosome
- D. all of the above

Answer: C

 [Watch Video Solution](#)

118. In a linear chromosome map, distances between 4 loci is as follows, a-b 10%, a-d 3%, b-c 4% and a-c 6%. The cross over frequency between c and d is

- A. 0.03
- B. 0.09
- C. 3 or 9%
- D. 4 to 12%

Answer: C

 [Watch Video Solution](#)

119. The parents of Triticale (first synthetic man made hybrid plant made by muntzing) are made hybrid plant made by muntzing) are

- A. wheat & Maize
- B. Wheat & rye
- C. Barley & rye
- D. All of these

Answer: B



Watch Video Solution

120. A haemophilic man marries a normal homozygous woman.

What is he probability that their son will be haemophilic ?

- A. 1

B. 0.75

C. 0.5

D. 0

Answer: D



Watch Video Solution

121. A normal woman whose father was haemophilic (X^hY) marries a normal man (XY). What is the chance of occurrence of haemophilia in their children ?

A. 1)25% children will be haemophilic

B. 2)50% children will be haemophilic

C. 3)75% children will be haemophilic

D. 4)100% children will be haemophilic

Answer: D

 [Watch Video Solution](#)

122. A woman (whose father is colour blind but mother is normal) marries a haemophiliac man with hypertichosis. What percentage of progeny will show genotypically any two of the traits out of the three mentioned above at a given time?

A. 0

B. 0.25

C. 0.5

D. 0.75

Answer: C

 [Watch Video Solution](#)

123. A recessive gene expresses only in homozygous condition.

Some times, a single recessive gene can express itself when it is

- A. autosomal gene
- B. located on Xchromosome of female
- C. located on X-chromosome of male
- D. all of the above

Answer: C

 [Watch Video Solution](#)

124. Of a normal couple, half of sons are haemophilic and half the daughters are heterozygous. The gene for this disease in couple are located on

- A. X-chromosome of both parents
- B. both the X-chromosomes of mother
- C. only on the X-chromosome of mother
- D. Y-chromosome of father

Answer: C

 [Watch Video Solution](#)

125. A holandric gene in man causes hypertrichosis. When a man with hairy ears marries a normal woman

- A. the percentage of their sons would be 100% to have hairy ear
- B. half of daughters will have this trait
- C. ratio of hairy eared and normal child will be 1:2

D. all correct

Answer: A



Watch Video Solution

126. A colour blind girl can be born when

A. her parents have normal visions but grand parents were colour blind

B. her mother is colour blind and father normal

C. her mother is colour blind and father normal but grand father is colour blind

D. her father is colour blind and mother normal but mother's father is colour blind

Answer: D



Watch Video Solution

127. A colour blind man marries the daughter of a colour blind lady and a normal man. Then in the progeny

- A. none of ther daughters will be colour blind
- B. all her sons are colour blind
- C. all her daughters are colour blind
- D. half her sons are colour blind

Answer: D



Watch Video Solution

128. Both father and mother have allele for PKU but are phenotypically normal. What is the probability that their child will have the disease?

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer: A



Watch Video Solution

129. A cross of white eyed female and red eyed male drosophila gives red eyed females and white eyed males. Rarely this cross may give all white eyed females and red eyed males. This was

found to be due to

1. loss of a sex chromosome
2. non disjunction of X chromosomes in female
3. mutation in female fly
4. mutation in male fly

A. loss of a sex chromosome

B. non disjunction of X chromosomes in female

C. mutation in female fly

D. mutation in male fly

Answer: B



Watch Video Solution

130. If husband and wife both are normal in vision but fathers of both were colour blind, the probability of their first daughter to

be colour blind is

A. 1

B. 0.5

C. 0

D. 0.25

Answer: C



Watch Video Solution

131. What will you call this set up $2n-2+2$?

A. nullisomy

B. nullisomic tetrasomy

C. double nullisomy

D. double tetrasomy

Answer: B



Watch Video Solution

132. How many barr bodies Klinefelter syndrome (XXY) has?

A. 1

B. 2

C. 4

D. 3

Answer: A



Watch Video Solution

133. Which of the following does not undergo transcription of its genes?

- A. Barr bodies
- B. Polytene chromosome
- C. Euchromatin
- D. Chromosome puff

Answer: A



Watch Video Solution

134. Turner syndrome is caused by

- A. autosomal Aneuploidy
- B. sex chromosome aneuploidy

C. polyploidy

D. trisomy

Answer: B



Watch Video Solution

135. Down's syndrome or Mongoloid idiocy (Mongolism) is due to

A. trisomy off X chromosome

B. trisomy of 21st chromosome

C. nullisomy of a chromosome

D. monosomy of an autosome

Answer: B



Watch Video Solution

136. Phenylketonuria, Huntington's disease and sickle-cell anaemia are caused respectively due to disorders associated with

- A. chromosome 7,11,12
- B. chromosome 11,4,12
- C. chromosome 4,7,11
- D. chromosome 12,4,11

Answer: D



Watch Video Solution

137. Genetic constitution of Klinefelter syndrome is

- A. 44+XXX

B. 44+XO

C. 42+XXX

D. 44+XX

Answer: A



Watch Video Solution

138. Which one of the following conditions through harmful in itself, is also a potential saviour from mosquito borne pernicious malaria due to *Plasmodium falciparum*?

A. Leukemia

B. Thalassemia

C. Sickle cell anaemia

D. Pernicious aneamia

Answer: C

 [Watch Video Solution](#)

139. Genetic constitution of superfemale is

A. $44+XX$

B. $44+XXX$

C. $44+XXY$

D. $44+XYY$

Answer: B

 [Watch Video Solution](#)

140. In human beings, male is $44A+XY$ and female $44A+XX$. Which of the following is sure case of nullisomy?

A. $(22 \times 2) - 2A + XX$

B. $(2 \times 22) - 2A + X$

C. $(2 \times 22) - 2A - Y$

D. $(2 \times 22) + 2A + XX$

Answer: A



[Watch Video Solution](#)

141. If the chromosome number of a trisomic is 25 what will be its corresponding $3n$ number

A. A)48

B. B)36

C. C)39

D. D)37

Answer: B



[Watch Video Solution](#)

142. What would be the sex of *Drosophila* with $3A+XXY$ genetic constitution?

A. Male

B. Female

C. Meta female

D. inter sex

Answer: D



Watch Video Solution

143. The number of barr bodies in normal male and normal female is

A. 1,0

B. 1,1

C. 0,1

D. 0,2

Answer: C



Watch Video Solution

144. Turner's syndrome is

- A. $44+X0$
- B. $44+OY$
- C. Both correct
- D. None

Answer: A



Watch Video Solution

145. If haploid number is 10, what would be the number of monosomic and tetrasomic conditions

- A. A)10,40
- B. B)19,22

C. C)9,22

D. D)19,40

Answer: B



Watch Video Solution

146. Down's syndrome is an example of

A. 1)aneuploidy

B. 2)polyteny

C. 3)polyploidy

D. 4)monoploidy

Answer: A



Watch Video Solution

147. Webbed neck' is a characteristic of :

- A. Turner's syndrome
- B. Down's syndrome
- C. Klinefelter's syndrome
- D. super female

Answer: A



Watch Video Solution

148. Barr body in normal female is due to inactivation of

- A. Maternally derived X chromosome
- B. Paternally derived X chromosome

C. extra chromosome

D. either maternal or paternal X-chromosome

Answer: A



[Watch Video Solution](#)

149. Carrier organism refers to an individual which carries a

A. recessive gene that is not expressed

B. recessive gene that is expressed

C. dominant gene that is not expressed

D. dominant gene which is expressed

Answer: A



[Watch Video Solution](#)

150. A woman has haemophilic brother and normal parents. She wants to marry a man who has no history of haemophilia in his family. What is the possibility of her children having this disease

- A. 50% of the sons may be haemophilic
- B. 50% of the total generation will be haemophilic
- C. all will be haemophilic
- D. none of them will be haemophilic

Answer: A



[Watch Video Solution](#)

151. The grandsons of a colour blind male through daughter having the following probability of being colour blind is

A. 0

B. 0.5

C. 0.25

D. 0.125

Answer: B



Watch Video Solution

152. If the frequency of a dominant phenotype in a stable population is 75%, the frequency of recessive allele in that population would be

A. 0.375

B. 0.75

C. 0.094

D. 0.5

Answer: D



[Watch Video Solution](#)

153. If we ignore the effect of crossing over, how many different haploid cells arise by meiosis in a diploid cell having $2n=12$

A. 8

B. 16

C. 32

D. 64

Answer: D



[Watch Video Solution](#)

154. When a mutation is limited to the substitution of one nucleotide pair of DNA, it is called as

- A. 1)deletion
- B. 2)base inversion
- C. 3)translocation
- D. 4)point mutation

Answer: A

 [Watch Video Solution](#)

155. Aneuploidy arises through

- A. disjunction
- B. nondisjunction

C. inversion

D. duplication

Answer: B



[Watch Video Solution](#)

156. Another mutation occurring in an already mutated gene gives rise to

A. multiple genes

B. multiple alleles

C. polygenes

D. pleiotropic genes

Answer: B



[Watch Video Solution](#)

157. Haploid plants are preferred over diploids for mutation studies, because

- A. haploids can easily be cultured
- B. in haploids mutation can be induced
- C. dominant mutations express immediately
- D. recessive mutations express immediately

Answer: A

 [Watch Video Solution](#)

158. Mutational events, which result in the deletion or addition of nucleotide bases in DNA, thereby causing gross changes in the

amino acid sequences of proteins are termed as

- A. frame shift mutations
- B. point mutations
- C. forward or backward mutations
- D. transversions

Answer: D



[Watch Video Solution](#)

159. Which of the following mutational events is most difficult to detect?

1. Lethal mutations
2. Dominant mutations
3. Recessive non lethal mutations
4. Auxotrophic mutations

- A. Lethal mutations
- B. Dominant mutations
- C. Recessive non lethal mutations
- D. Auxotrophic mutations

Answer: A

 [Watch Video Solution](#)

160. Which of the following represents an amphidiploid (or allopolyploid) condition?

1. A plant having a chromosome number which is not an exact multiple of the haploid number
2. A plant derived by doubling the chromosomes of F_1 hybrid of two species
3. A polyploid containing genetically different chromosomes sets

derived from two or more species

4. A polyploid species in which the genomes have been derived from the same original species

A. A plant having a chromosome number which is not an exact multiple of the haploid number

B. A plant derived by doubling the chromosomes of F_1 hybrid of two species

C. A polyploid containing genetically different chromosomes sets derived from two or more species

D. A polyploid species in which the genomes have been derived from the same original species

Answer: A



Watch Video Solution

161. A polyploid species having multiple and identical sets of chromosomes is called

1. allopolyploid
2. amphidiploid
3. aneuploid
4. autopolyploid

- A. allopolyploid
- B. amphidiploid
- C. anuploid
- D. autopolyploid

Answer: D



Watch Video Solution

162. Slight difference in identical twins support the hypothesis that

1. dominance may be incomplete
2. single gene may produce multiple effect
3. the expression of genetic character is affected by environment
4. they developed from separate fertilized eggs

A. dominance may be incomplete

B. single gene may produce multiple effect

C. the expression of genetic character is affected by environment

D. they developed from separate fertilized eggs

Answer: C



Watch Video Solution

163. An allopolyploid has 4 or more sets of chromosomes. These sets come from

- A. a single parental species
- B. two parental species
- C. four parental species
- D. mutations

Answer: B

 [Watch Video Solution](#)

164. An organism or cell having a chromosome number exactly multiple of haploid number is known as

- A. aneuploidy

B. euploid

C. hypoploid

D. hyperploid

Answer: B



Watch Video Solution

165. Match the columns:

<i>Column I</i>	<i>Column II</i>
a. Down's syndrome	p. An additional sex chromosome
b. Cri-du-chat syndrome	q. Loss of a part of chromosome 5
c. Klinefelter's syndrome	r. Absence of sex chromosome
d. Turner's syndrome	s. Presence of an extra chromosome
	t. Presence of two extra chromo-

A. a-s,b-q,c-p,d-r

B. a-t,b-s,c-p,d-q

C. a-s,b-q,c-q,d-r

D. a-s,b-q,c-r,d-p

Answer: A



Watch Video Solution

166. In *Drosophila*, XXY is female. In humans it represents a male because

1. Y-chromosome induces male traits in humans.
2. Y-chromosome is essential for female sex in *Drosophila*.
3. Y-chromosome is not essential for male sex in humans.
4. None of the above

A. Y-chromosome induces male traits in humans.

B. Y-chromosome is essential for female sex in *Drosophila*.

C. Y-chromosome is not essential for male sex in humans.

D. None of the above

Answer: A



[Watch Video Solution](#)

167. Queen victoria of England was

1. haemophiliac carrier
2. colour blind
3. AIDS patient
4. deaf

A. haemophiliac carrier

B. colour blind

C. AIDS patient

D. deaf

Answer: A



Watch Video Solution

168. Number of nucleosomes found in helical coil of 30nm chromatin fiber is

- a. 6
- b. 10
- c. 12
- d. 15

- A. 6
- B. 10
- C. 12
- D. 15

Answer: A



Watch Video Solution

169. Seedless watermelons have been obtained through

- A. haploidy
- B. vegetative propagation
- C. triploidy
- D. gibberellin application

Answer: C



Watch Video Solution

170. In humans, Philadelphia chromosome is formed by reciprocal translocation between chromosomes

- A. 9 and 21
- B. 9 and 22
- C. 9 and 20
- D. 20 and 10

Answer: B



[Watch Video Solution](#)

171. Frequency of an autosomal recessive lethal gene is 0.4
Frequency of carrier in a population of 200 individuals is

- A. 72

B. 96

C. 104

D. 36

Answer: B



Watch Video Solution

172. Genic balance theory holds good in case of

A. Humans

B. *Drosophila*

C. Grasshopper

D. *Allium cepa*

Answer: B

 [Watch Video Solution](#)

173. A and B genes are linked. What shall be the genotype of progeny in a cross between AB/ab and ab/ab ?

- A. AABB and aabb
- B. AaBb and aabb
- C. Aabb and aaBB
- D. AaBb and AaBb

Answer: B

 [Watch Video Solution](#)

174. A diseased man marries a normal woman. They get three daughters and five sons. All the daughters were diseased and

sons were normal .the gene of this disease is

- A. sex-linked dominant
- B. sex-linked recessive
- C. sex-limited character
- D. autosomal dominant

Answer: A



[Watch Video Solution](#)

175. Which is the late acting dominant disorder

- A. Polydactyly
- B. Phenylketonuria
- C. Huntington's chorea

D. Tay-sach's disease

Answer: C



Watch Video Solution

176. Z-chromosome in birds is the name for

- A. Y-chromosome in males
- B. X-chromosomes, and is paired in males
- C. X-chromosome and is unpaired in males
- D. Y-chromosome in females

Answer: B



Watch Video Solution

177. Which clotting factor is absent in haemophilia A?

- A. factor X
- B. factor IX
- C. factor VIII
- D. factor IV

Answer: C



[Watch Video Solution](#)

178. Which enzyme is defective or not formed in case of Alkaptonuria?

- A. Phenylalanine hydroxylase
- B. Homogentisic oxidase

C. Tyrosine oxidation

D. All of these

Answer: B



[Watch Video Solution](#)

179. Who is known as the Father of Human Genetics?

A. F. Galton

B. Lederberg

C. Archibald Garrod

D. None of these

Answer: C



[Watch Video Solution](#)

180. In birds the female sex is

- A. homogametic
- B. digenetic
- C. heterogametic
- D. none of these

Answer: C



Watch Video Solution

181. Number of autosomes in a sperm is

- A. 2
- B. 44

C. 23

D. none of these

Answer: D



Watch Video Solution

182. Sex mechanism in *Drosophila* is

A. XO female: XX male

B. XY female: XX male

C. XX female: XX male

D. none of these

Answer: D



Watch Video Solution

183. In a blood sample a WBC has a nucleus with drum-stick. This indicates that the blood sample has come from a person who is

- A. Haemophilic
- B. Diabetic
- C. Female
- D. Sickle cell-anaemic

Answer: C



Watch Video Solution

184. Who is known as the father of blood group studies?

- A. H F Nuttall

B. Francis Galton

C. Achibald Garrod

D. Landsteiner

Answer: D



Watch Video Solution

185. The blood of a person having group A can not be transfused into a person of blood group B because

A. donor has β -antibodies

B. recipient has B-antigen

C. both the these

D. donor has A-antigen and recipient has α -antibodies

Answer: D



Watch Video Solution

186. Sex-linked inheritance was discovered by

1. Tjio and Levan in human
2. T.H. Morgan in *Drosophila*
3. Haldane through pedigree analysis in human
4. H.J. Muller in *Drosophila*

- A. Tjio and Levan in human
- B. T.H. Morgan in *Drosophila*
- C. Haldane through pedigree analysis in human
- D. H.J. Muller in *Drosophila*

Answer: B



187. Rh (-ve) person has

1. Rh antigens on RBC
2. Rh antibodies in Plasma
3. Neither antigens nor antibodies of Rh factor
4. both antigens and antibodies

A. Rh antigens on RBC

B. Rh antibodies in Plasma

C. Neither antigens nor antibodies of Rh factor

D. both antigens and antibodies

Answer: C

188. Trisomy of D-group chromosomes causes

1. Cri-du-chat syndrome
2. Patau's syndrome
3. Edward syndrome
4. Achondroplasia

- A. Cri-du-chat syndrome
- B. Patau's syndrome
- C. Edward syndrome
- D. Achondroplasia

Answer: B



Watch Video Solution

189. Tay sach's disease is

- A. Recessive and autosomal
- B. Dominant and autosomal
- C. Sex-linked
- D. Not a hereditary disease

Answer: A

 [Watch Video Solution](#)

190. Which of the following disorder shows Criss-cross inheritance ?

- A. Haemophilia
- B. Thalassemia
- C. Erythroblastosis foetalis
- D. None of these

Answer: A

 [Watch Video Solution](#)

191. Number of barr bodies present in turner's syndrome is

A. 0

B. 1

C. 2

D. 2 or 3

Answer: A

 [Watch Video Solution](#)

192. A male grasshopper will have a sex compliment of

A. XY

B. XX

C. XO

D. YO

Answer: C



Watch Video Solution

193. Sex chromosomes are also called

A. allosomes

B. heterosomes

C. autosomes

D. isochromosomes

Answer: A



Watch Video Solution

194. Two crosses between the same pair of genotype or phenotypes in which the sources of the gametes are reversed in one cross, is known as

1. back cross
2. dihybrid cross
3. test cross
4. reciprocal cross

- A. back cross
- B. dihybrid cross
- C. test cross
- D. reciprocal cross

Answer: D



Watch Video Solution

195. Albinism is due to nonsynthesis (absence) of melanin on account of absence of

1. Melanase
2. luciferase
3. tyrosinase
4. lysine

- A. Melanase
- B. luciferase
- C. tyrosinase
- D. lysine

Answer: C



Watch Video Solution

196. Scientist who was awarded Nobel prize for finding genes to be linearly arranged on chromosomes was

1. Wolf

2. Punnet

3. Morgan

4. Swammerdan

A. Wolf

B. Punnet

C. Morgan

D. Swammerdan

Answer: C



Watch Video Solution

197. Christmas disease is another name of

1. Turner syndrome
2. Down's syndrome
3. Haemophilia B
4. Haemophilia C

A. Turner syndrome

B. Down's syndrome

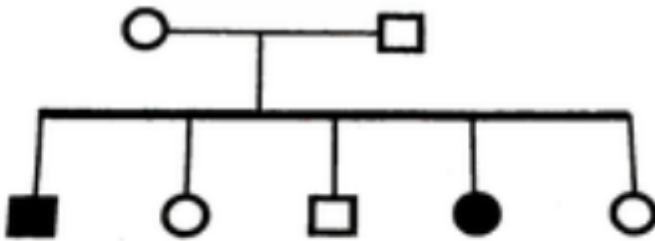
C. Haemosphilia B

D. Haemophiliac

Answer: C



198. Given below is a pedigree chart of a family with five children. It shows the inheritance of attached ear lobes as opposed to the free ones. The squares represent the male individuals. The squares represent the male individuals and circles the female individuals



Attached ear-lobe ● ■
Free ear-lobe ○ □

Which of one of the following conclusions drawn is correct?

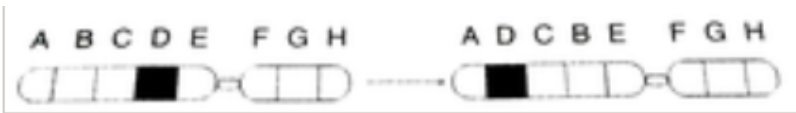
- A. The parents are homozygous recessive
- B. The trait is Y-linked
- C. The parents are homozygous dominant

D. The parents are heterozygous

Answer: D

 [Watch Video Solution](#)

199. Given below is the representation of a kind of chromosomal mutations



What is the kind of mutation represented?

A. Deletion

B. Duplication

C. Inversion

D. Reciprocal translocation

Answer: C



Watch Video Solution

200. Two genes R and Y are located very close on the chromosomal linkage map of maize plant. When RRY_Y and rryy genotypes are hybridized the F_2 segregation will show

1. segregation in the expected 9:3:3:1 ratio
 2. segregation in 3:1 ratio
 3. higher number of parental types
 4. higher number of the recombinant types
-
- A. segregation in the expected 9:3:3:1 ratio
 - B. segregation in 3:1 ratio
 - C. higher number of parental types
 - D. higher number of the recombinant types

Answer: C

 [Watch Video Solution](#)

201. In pea plants, yellow seeds are dominant to green. 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 F_1 -generation?

A. 9 : 1

B. 1 : 3

C. 3 : 1

D. 50 : 50

Answer: D

 [Watch Video Solution](#)

202. In maize, hybrid vigour is exploited by

- A. crossing of two inbred parental lines
- B. harvesting seeds from the most productive plants
- C. inducing mutation
- D. bombarding the seeds with DNA

Answer: A



Watch Video Solution

203. A human male produces sperms with the genotypes AB, Ab, aB, and ab pertaining to two diallelic characters in equal proportions. What is the corresponding genotype of this person?

- A. AaBB

B. AABb

C. AABB

D. AaBb

Answer: D



Watch Video Solution

204. A sweet pea plant with blue flowers and long pollens is test crossed. The progeny contains 300 plants with blue flowers and long pollens, 295 plants with red flower and round pollens, 80 plants with blue flower and round pollen and 85 plants with red flower and long pollens. This result is due to

1. linkage

2. segregation

3. independent assortment

4. linkage and crossing over

A. linkage

B. segregation

C. independent assortment

D. linkage and crossing over

Answer: D



Watch Video Solution

205. Match list I with list II and select the correct answer using the codes given below the lists.

List I

- A. DNA
- B. Semiconservative replication of DNA
- C. One gene one enzyme theory
- D. induction of mutation

List II

- i. Muller and Stadler
- ii. Beadle and Tatum
- iii. Watson and Crick
- iv. Meselson and Stahl

A. A-i, B-ii, C-iii, D-iv

B. A-iii, B-iv, C-i, D-ii

C. A – iii, B-iv, C-ii, D-i

D. A-iv, B-iii, C-ii, D-i

Answer: C



Watch Video Solution

206. Telomere repetitive DNA sequences control the function of eukaryote chromosomes because they

- A. help chromosome pairing
- B. prevent chromosome loss
- C. act as replicons
- D. are RNA transcription initiator

Answer: B



Watch Video Solution

207. In the hexaploid wheat, the haploid (n) and basic (x) numbers of chromosomes are

- A. $n=21$ & $X=14$

B. $n=21$ & $X=7$

C. $n=7$ & $X=21$

D. $n=21$ & $X=21$

Answer: B



Watch Video Solution

208. Molecular basis of organ differentiation depends on the modulation in transcription by

A. transcription factor

B. anticodon

C. RNA polymerase

D. ribosome

Answer: A



Watch Video Solution

209. A sequential expression of a set of human genes occurs when a steroid molecule binds to the

- A. DNA sequence
- B. ribosome
- C. transfer RNA
- D. messenger RNA

Answer: A



Watch Video Solution

210. Grain colour in wheat is determined by 3 pairs of polygenes.

A cross between AABBCc x aabbcc will produce progeny in F_2 in what proportion that is likely to resemble either parent.

- A. None
- B. One third
- C. Less than 5%
- D. Half

Answer: C



[Watch Video Solution](#)

211. Match list-I with list-II and select the correct answer using the codes given below the lists.

List-I (Genomic Structures)	List-II (Elucidation)
A. Nucleolar organizers	1. One condensed X chromosome in the somatic interphase nucleus of mammalian female.
B. Nucleosome	2. An octamer of four groups of histones (H ₂ A, H ₂ B, H ₃ & H ₄) complexed with DNA.
C. Constitutive heterochromatin	3. Repetitive sequence DNA.
D. Facultative heterochromatin	4. Certain chromosomal secondary constrictions coding for 18S and 28S

i. A-1,B-2,C-4,D-3

ii. A-4,B-2,C-3,D-1

iii. A-3,B-4,C-2,D-1

iv. A-2,B-3,C-1,D-4

A. A-1,B-2,C-4,D-3

B. A-4,B-2,C-3,D-1

C. A-3,B-4,C-2,D-1

D. A-2,B-3,C-1,D-4

Answer: B



Watch Video Solution

212. Match list-I (structural) with list-II (name) and select the correct answer using the codes given below the lists.

List-I (Structure)	List-II (Name)
A. Balbiani rings	1. Euchromatin
B. Thinner segment of the chromosomes	2. Primary constriction
C. Non-condensed area of the chromosomes	3. Telomere
D. Tips of chromosomes having distinct cytological properties.	4. Chromosome puff

A. A-4,B-2,C-3,D-1

B. A-2,B-3,C-1,D-4

C. A-2,B-2,C-4,D-3

D. A-4, B-2, C-1, D-3

Answer: C



[Watch Video Solution](#)

213. Heterochromatinization takes place

- A. During fertilization
- B. Early in the gestational development
- C. Immediately before birth
- D. Prior to the onset of puberty

Answer: B



[Watch Video Solution](#)

214. Match list-I with list-II and select the correct answer using the codes given below the lists.

List-I	List-II
A. Incomplete dominance	1. Human skin colour
B. Codominance	2. Purple colour of flower in sweet pea
C. Polygenes	3. Human being belonging to AB blood group
D. Complementary genes	4. Pink flower in 4 O'clock plant

A. A-4,B-3,C-1,D-2

B. A-3,B-4,C-2,D-1

C. A-4,B-3,C-2,D-1

D. A-3,B-4,C-1,D-2

Answer: A



Watch Video Solution

215. Match list-I with list-II and select the correct answer using the codes given below the lists.

List-I (Peculiarity of Male Determining sperm)	List-II (Organism in which it is seen)
A. No sperm is needed at all.	1. Grasshopper
B. Necessarily with a Y-chromosome.	2. Honey bee
C. With haploid set of autosomes only.	3. Birds
D. With Z-chromosome.	4. <i>Drosophila</i> 5. Humans

A. A-2,B-1,C-3,D-4

B. A-5,B-2,C_4,D-3

C. A-3,B-5,C-1,D-4

D. A-2,B-5,C-1,D-3

Answer: D



Watch Video Solution

216. Persons carrying the dominant gene(s) can taste a particular chemical and are called tasters. The others are nontasters. In a large random-mating human population at the hardy-weinberg equilibrium. There are 36% non-tasters and 64% tasters. The frequency of heterozygotes in the populations is

- A. 0.06
- B. 0.08
- C. 0.32
- D. 0.48

Answer: D



Watch Video Solution

217. A man and a woman, each carries a mutant allele for phenylketoneuria, an inborn error of metabolism. However, neither of them has this disease. The probability that their second child will suffer from phenylketoneuria is:

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer: A



Watch Video Solution

218. Match List I with List II and select the correct answer using the code given below the lists:

List-I (Human hereditary condition)	List-II (Enzyme lost or deficient)
(A) Alkaptonuria	1. β -D-N acetyl hexosaminidase A
(B) Gaucher's disease	2. Glucocerebrosidase
(C) Albinism	3. Homogentisic acid oxidase
(D) Tay-Sachs disease	4. Tyrosinase

A. A-1,B-4,C-2,D-3

B. A-1,B-2,C-4,D-3

C. A-3,B-4,C-2,D-1

D. A-3,B-2,C-4,D-1

Answer: D



Watch Video Solution

219. Expression of a recessive phenotype in a deletion heterozygote is due to:

- A. Pseudo-dominance
- B. partial-dominance
- C. super-dominance
- D. co-dominance

Answer: A



[Watch Video Solution](#)

220. If two loci are 10 map units apart, assuming that no multiple cross-over has taken place, what proportion of the cells formed as a result of meiosis will contain a single crossover in the region between these two loci?

a. 0.1

b. 0.2

c. 0.3

d. 0.4

A. 0.1

B. 0.2

C. 0.3

D. 0.4

Answer: A



Watch Video Solution

221. Identify the correct number of gametes, genotypes and phenotypes respectively, produced in the self pollination of plant with genotype of $AaBBCCDdEE$

A. 3,8,3

B. 4,9,4

C. 4,6,8

D. 4,8,4

Answer: B



Watch Video Solution

222. Natural selection can eliminate a deleterious allele, arising out of mutation, only when it is:

A. Recessive

B. Dominant

C. Co-dominant

D. Morphologically distinct

Answer: B

 [Watch Video Solution](#)

223. In *Mirabilis*, red flowered plant crossed with white flowered one resulted in all pink flowered plants. What are the chances of appearance of red flowered plant in a cross between pink and white flowered plant?

A. Zero

B. 0.25

C. 0.5

D. 0.75

Answer: A

 [Watch Video Solution](#)

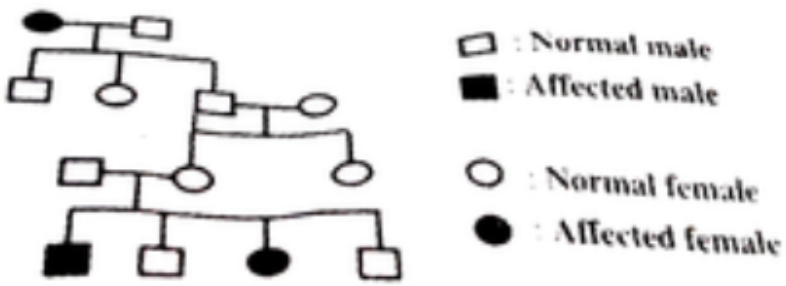
224. A female rat homozygous for a recessive X-linked mutation is mated to a male with wild type phenotype. The phenotypes of the F1 progeny will be

- A. all wild type
- B. 50% mutants irrespective of sex
- C. all females wild type and all males mutant
- D. all males wild type and all females mutant

Answer: C

 [Watch Video Solution](#)

225. Study the pedigree given below and assign the type of inheritance of the trait.



- A. X-linked recessive
- B. Y-linked
- C. Autosomal recessive
- D. Autosomal dominant

Answer: C

 [Watch Video Solution](#)

226. Erythroblastosis foetalis is caused when

- A. female is DD & male Dd

B. female is dd & male also dd

C. female is dd & male DD

D. all of the above

Answer: C



Watch Video Solution

227. In *Drosophila* the XXY condition leads to femaleness whereas in human beings the same condition leads to Klinefelter's syndrome in male. It proves:

A. Y Chromosome is active in sex determination in both human beings and *Drosophila*

B. In *Drosophila* Y-chromosome decides femaleness.

C. Y chromosome of man has genes for syndrome.

D. In human beings Y chromosome is active in sex determination.

Answer: D

 [Watch Video Solution](#)

228. If Mendel might have studied 7 pairs of characters in a plant with 10 chromosomes instead of 14 then

- A. he might not have discovered independent assortment
- B. he might not have discovered linkage
- C. he might have discovered crossing over
- D. he might have not observed dominance

Answer: A

 [Watch Video Solution](#)

229. First child of a normal pigmented couple is albino. The possibility of a second child being an albino is

- A. 0.25
- B. 0.5
- C. 0.75
- D. 1

Answer: A

230. In a hospital, on the same day-5 children were born to different couples. What is the probability of all 5 children being

boys?

A. $1/32$

B. $1/16$

C. $5/16$

D. $5/32$

Answer: A



Watch Video Solution

231. If a plant with genotype $R_1R_2R_0R_0$ produces potatoes of 240 gram weight, while $r_1r_1r_0r_0$ produces potatoes 100 grams in weight. What will be the weight of potatoes in a plant $R_1R_1R_0r_0$?

A. 215g

B. 225g

C. 205g

D. 195g

Answer: C



Watch Video Solution

232. How many chromosomes would you find in a somatic cell of a female with webbed neck, primary amenorrhoea, small undeveloped breasts and ovaries?

A. 46

B. 47

C. 44

D. 45

Answer: D

 [Watch Video Solution](#)

233. Slanting eyes, round face, mental retardation, epicanthus (eye folds) are seen in-

- A. Klinefelter syndrome
- B. Down's syndrome
- C. Patau's syndrome
- D. None of the above

Answer: B

 [Watch Video Solution](#)

234. In a random mating population of 1 lakh individuals-the frequency of the recessive allele is 0.4. how many individuals will have homozygous genotypes?

A. 26000

B. 52000

C. 78000

D. 36000

Answer: B



Watch Video Solution

235. In a random mating population of 1 lac individuals -75,000 individuals were seen to have black eyes (Dominant phenotype),

the rest had blue eyes. How many black eyed individuals are hybrid?

- A. 0
- B. 25000
- C. 50000
- D. 75000

Answer: C

 [Watch Video Solution](#)

236. A male human is heterozygous for autosomal genes A and B and is also hemizygous for hemophilic gene h. What proportion of his sperms will carry abh

- A. 1/16

B. $1/4$

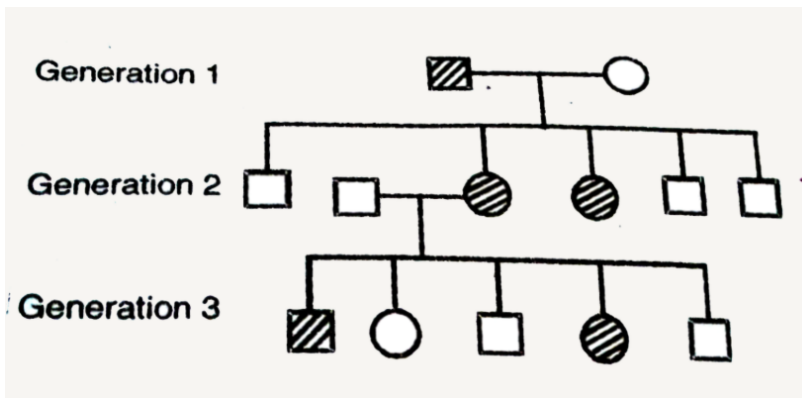
C. $1/8$

D. $1/32$

Answer: C

 [Watch Video Solution](#)

237. Given below is a pedigree chart showing the inheritance of a certain sex-linked trait in humans:



Key:



Unaffected male



Affected male



Unaffected female



Affected female

the trait traced in the above pedigree chart is:

- A. Dominant X-linked
- B. Recessive X-linked
- C. Dominant Y-linked
- D. Recessive Y-linked

Answer: A



[Watch Video Solution](#)

238. In which one of the following combinations (1-4) of the number of chromosomes is the present day hexaploid wheat correctly represented ?

A.

Combination	Monosomic	Haploid	Nullisomic	Trisomic
	21	28	42	43

B.

Combination	Monosomic	Haploid	Nullisomic	Trisomic
	7	28	40	42

C.

Combination	Monosomic	Haploid	Nullisomic	Trisomic
	21	7	42	43

D.

Combination	Monosomic	Haploid	Nullisomic	Trisomic
	41	21	40	43

Answer: D



[Watch Video Solution](#)

239. In humans, red-green colour blindness is recessive and sex-linked, while albinism is recessive and autosomal. A marriage

between two homozygous parents a normal visioned albino woman and a colour blind and normally pigmented man will produce children

1. who are all phenotypically normal visioned and have normal pigmentation

2. half of whom are colour-blind and the other half having normal vision and all of them having normal pigmentation

3. all of whom have normal vision, but half of whom are albino and the other half with normal pigmentation.

4. of four categories, normal visioned, pigmented, normal visioned, albino, colour blind, pigmented, colour blind, albino, all in equal proportions

A. who are all phenotypically normal visioned and have normal pigmentation

B. half of whom are colour-blind and the other half having normal vision and all of them having normal pigmentation

C. all of whom have normal vision, but half of whom are albino and the other half with normal pigmentation.

D. of four categories, normal visioned, pigmented, normal visioned, albino, colour blind, pigmented, colour blind, albino, all in equal proportions

Answer: A

 [Watch Video Solution](#)

240. A plant with four heterologous pairs of chromosomes having Aa,Bb,Cc,Dd is self fertilized , the resulting genotype with aa bb cc dd genes occur according to which one of the following frequencies?

A. $1/16$

B. $1/64$

C. $1/256$

D. $1/1024$

Answer: C



Watch Video Solution

241. If a plant heterozygous for a trait $AaBb$ (AB/ab) is test crossed to obtain following result $AaBb=520$, $aabb=380$, $Aab=46$ and $aaBb=54$, then two genes are how many map units apart from each other?

a. 20 units

b. 10 units

c. 50 units

d. all are wrong

- A. 20 units
- B. 10 units
- C. 50 units
- D. all are wrong

Answer: B



Watch Video Solution

242. The ability of certain people to taste the chemical phenylthiocarbamide (PTC) is governed by a dominant allele T, and the inability to taste PTC by its recessive allele t. If 24% of a population is homozygous taster and 40% is heterozygous taster, what is the frequency of t?

- A. 0.3

B. 0.9

C. 0.4

D. 0.6

Answer: D



Watch Video Solution

243. Go through the following statements:

- (i) a typical nucleosome contains 400 bp of DNA helix.
- (ii) The positively charged DNA is wrapped around the negatively charged histone octamer to form a structure called nucleosome.
- (iii) Histones are rich in the basic amino acid residues asparagine and valine
- (iv) The packaging of chromatin at higher level requires additional set of proteins that collectively are referred to as

nonhistone chromosomal proteins.

Find out the wrong statements:-

- A. (i), (ii) & (iii)
- B. (ii), (iii) & (iv)
- C. (ii) & (iii)
- D. (i),(iii) & (vi)

Answer: A



Watch Video Solution

244. What is true for night blindness and haemophilia ?

- A. Nutritional deficiency disorders
- B. X-linked recessive disorders
- C. Autosomal recessive disorders

D. autosomal dominant disorders

Answer: B



Watch Video Solution

245. What is true for thalassaemia?

A. Nutritional disorder leading to anaemia

B. Autosomal recessive disorder leading to clotting abnormalities

C. Autosomal recessive disorder leading to reduced haemoglobin synthesis

D. Autosomal dominant disorder leading to reduced haemoglobin synthesis

Answer: C



Watch Video Solution

246. In X-linked recessive inheritance, why does the disease gene often appear to skip generations?

- A. x-linked diseases are only expressed in males
- B. All X-linked diseases display incomplete penetrance
- C. Disease is primarily transmitted through unaffected carrier females
- D. Males with an affected gene may transmit but not show the disease

Answer: C



Watch Video Solution

247. If a mother and father both have one mutant gene for a disease with an autosomal dominant inheritance, what is their risk of having an affected child?

A. 0

B. 0.25

C. 0.5

D. 0.75

Answer: D



Watch Video Solution

248. Which one the four couples claiming the baby with O+ blood type are the possible biological parents of it ?

A. AB- and A+

B. A+ and O-

C. O+ and AB+

D. B- and O-

Answer: B



Watch Video Solution

249. The weight of fruit in a plant is determined by the number of dominant alleles of a certain number of genes. If seven weight categories are noticed, how many gene sites would be involved?

A. two

B. three

C. four

D. five

Answer: B



[Watch Video Solution](#)

250. On selfing a plant of F_1 -generation with genotype "AABbCC", the phenotypic ratio in F_2 -generation will be

A. 1 : 1

B. 9 : 3 : 3 : 1

C. 1 : 2 : 1

D. 27 : 9 : 9 : 9 : 3 : 3 : 3 : 1

Answer: C



[Watch Video Solution](#)

251. In a population of 2000 individuals, 900 individuals are suffering from a recessive autosomal disease and 500 are carriers. The gene frequency of recessive gene is

- A. 0.45
- B. 60.5 %
- C. 0.67
- D. 0.5

Answer: C

 [Watch Video Solution](#)

252. In an organism, $4n=100$. the haploid and monoploid number of chromosomes in this organism will be

A. 25 & 25

B. 25 & 50

C. 50 & 25

D. 50 & 50

Answer: C



Watch Video Solution

253. In man, nucleolar organisers are not located in which of the following chromosomes?

A. 14

B. 20

C. 21

D. 13

Answer: B

 [Watch Video Solution](#)

254. A dihybrid test cross ratio for two linked genes in a hybrid is

A. 1:1

B. 1:1:1:1

C. 7:1:1:7

D. 1:7:7:1

Answer: A

 [Watch Video Solution](#)

255. Colour blindness is characterized by

- A. absence of rod cells in retina
- B. absence of cone cells in retina
- C. absence of lustre of lens
- D. lack of colour pigments in the eye

Answer: D

 [Watch Video Solution](#)

256. In human beings, sex determination has recently been studied in great detail using techniques of molecular biology. The most important gene located on Y chromosome and involved in sex determination is:-

- A. SRY gene
- B. SXI gene

C. ZFY gene

D. Tra gene

Answer: A



Watch Video Solution

257. Nucleosomes give beaded appearance to chromosomes. They help in packing of DNA in the chromosomes. A nucleosome has

A. about 5 turns of DNA

B. 8 histone molecules of 4 types (2 mols each of H_2a , H_2b , H_3 and H_4)

C. 400 nitrogen base pairs

D. all of the above

Answer: B



Watch Video Solution

258. The two nucleosomes are joined by linker DNA to which is attached

A. H_1

B. H_2

C. H_3

D. H_4

Answer: A



Watch Video Solution

259. Which among the following histone proteins is least conserved in course of evolution?

A. H_4

B. H_3

C. H_2

D. H_1

Answer: D



Watch Video Solution

260. In the region of Balbiani rings (puffs), DNA strand is uncoiled. It helps in

- A. multiple transcription (synthesis) of RNA for rapid protein synthesis
- B. more synthesis of a particular intron
- C. both 1 and 2
- D. both wrong as giantness chromosomes is hereditary

Answer: A

 [Watch Video Solution](#)

261. Salivary glands chromosome were discovered by Balbiani (1881) from the salivary glands of larva of

- A. Chironomous
- B. Drosophila
- C. Silk worm

D. Lac worm

Answer: A



[Watch Video Solution](#)

262. In which stage, you will find lampbrush chromosomes in oocyte of frog?

- A. In zygotene stage
- B. Pachytene stage
- C. In diplotene stage
- D. Oocyte after fertilization

Answer: C



[Watch Video Solution](#)

263. Polytene chromosome becomes giant due to

- A. polyploidy
- B. cancer
- C. nondisjunction
- D. endoreduplication

Answer: D



Watch Video Solution

264. The major amino acids in histone protein of chromosomes are

1. histidine and tryptophan
2. arginine and lysine

3. tyrosine and tryptophan

4. cystine and tyrosine

A. histidiine and tryptophan

B. arginine and lysine

C. tyrosine and tryptophan

D. cystine and tyrosine.

Answer: B



Watch Video Solution

265. Term chromosome was coined by

1. Waldeyer

2. Strasburger

3. hofmeister

4. sanger & altman

A. Waldeyer

B. Strasburger

C. Hofmeister

D. Sanger & Altman

Answer: A



Watch Video Solution

266. Acentric chromosome at mitotic anaphase will

1. have circular shape

2. be highly condensed

3. lie near the equator and will be left behind

4. be condensed and would lie at one of the poles

A. have circular shape

B. by highly condensed

C. lie near the equator and will be left behind

D. be condensed and would lie at one of the poles.

Answer: C



Watch Video Solution

267. Chromatin is composed of

A. DNA+histone

B. DNA+RNA+histone

C. DNA+small amounts of RNA

D. DNA+RNA+histone and nonhistone proteins.

Answer: D

 [Watch Video Solution](#)

268. Secondary constriction in chromosome is referred to as

- A. centromere
- B. nucleolar organiser
- C. balbiani puffs
- D. centriole

Answer: B

 [Watch Video Solution](#)

269. Sickle cell anemia is

- A. caused by a change in a single base pair of DNA

B. characterized by elongated sickle like RBCs with a nucleus

C. an autosomal linked dominant trait

D. caused by substitution of valine by glutamic acid in the
beta globin chain of haemoglobin

Answer: A



Watch Video Solution

270. The most popularly known blood grouping is the ABO grouping. It is named ABO and not ABC, because "O" in it refers to having

A. One antibody only-either anti-A or anti-B on the RBCs

B. No antigens A and B on RBCs

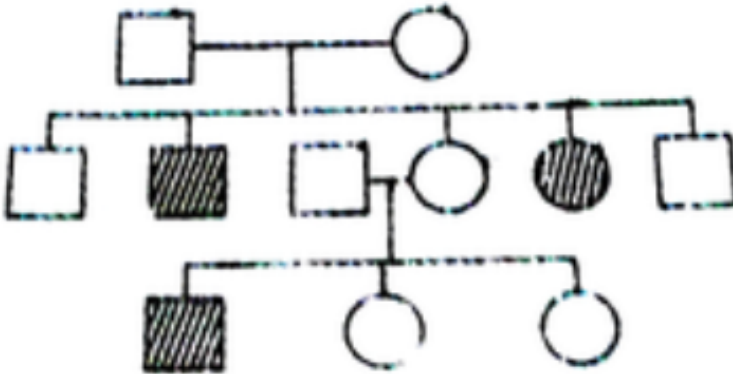
C. Other antigens besides A and B on RBCs

D. Overdominance of this type of the genes for A and B types

Answer: B

 Watch Video Solution

271. Study the pedigree chart given below



what does it show?

A. The pedigree chart is wrong as this is not possible.

B. inheritance of a recessive sex-linked disease like haemophilia

C. inheritance of a sex-linked inborn error of metabolism like phenylketonuria

D. inheritance of a condition like phenylketonuria as an autosomal recessive trait

Answer: D

 [Watch Video Solution](#)

272. Select the incorrect statement from the following

A. Small population size results in random genetic drift in a population

B. Baldness is a sex-linked trait

C. Linkage is an exception to the principle of independent assortment in heredity

D. Galactosemia is an inborn error or metabolism

Answer: B



Watch Video Solution

273. Which one of the following cannot be explained on the basis of Mendel's Law of Dominance?

A. Factors occur in pairs

B. The discrete unit controlling a particular character is called a factor

C. Out of one pair of factor one is dominant, and the other is recessive.

D. Alleles do not show any blending and both the characters recover as such in F_2 generation

Answer: D



Watch Video Solution

274. The genotype of a plant showing the dominant phenotype can be determined by:

- A. Back cross
- B. Test cross
- C. Dihybrid cross
- D. Pedigree analysis

Answer: B



Watch Video Solution

275. Select the correct statement from the ones given below with respect to dihybrid cross


- A. Tightly linked genes on the same chromosome show very few recombinations
- B. Tightly linked genes on the same chromosome show higher recombinations
- C. Genes far apart on the same chromosome show very few recombinations
- D. genes loosely linked on the same chromosome show similar recombinations as the tightly linked ones


Answer: A

 [Watch Video Solution](#)

276. Which one of the following symbols and its representation, used in human pedigree analysis is correct?

A. (1)  = male affected

B. (2)  = mating between relatives

C. (3)  = unaffected male

D. (4)  = unaffected female

Answer: B

 [Watch Video Solution](#)

277. Which one of the following statement about the particular entity is true ?

- A. Centromere is found in animal cells, which produces aster during cell division
- B. the gene for producing insulin is present
- C. Nucleosome is formed of nucleotides
- D. DNA consists of a core of eight histones

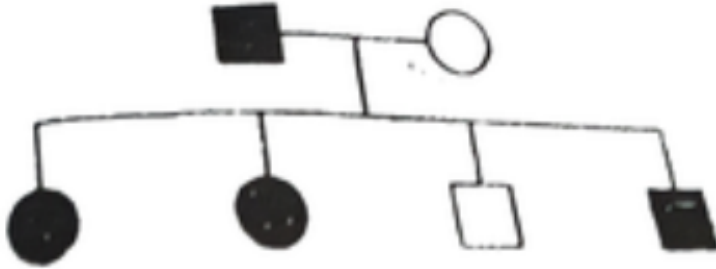
Answer: B



Watch Video Solution

278. Study the pedigree chart of a certain family given below and select the correct conclusion which can be drawn for the

character



- A. The female parent is heterozygous
- B. The parents could not have had a normal daughter for this character
- C. The trait under study could not be colour blindness
- D. The male parent is homozygous dominant

Answer: A

 [Watch Video Solution](#)

279. In *Antirrhinum* two plants with pink flowers were hybridized. The F_1 plants produced red, pink and white flowers in the proportion of 1 red, 2 pink and 1 white. What could be the genotype of the two plants used for hybridization. Red flower colour is determined by RR, and white rr genes

A. rrrr

B. RR

C. Rr

D. rr

Answer: C



Watch Video Solution

280. ABO blood grouping is controlled by gene I which has three alleles and show co-dominance. There are six genotypes. How many phenotypes in all are possible?

- A. Six
- B. Three
- C. Four
- D. Five

Answer: C

 [Watch Video Solution](#)

281. The fruit fly *Drosophila melanogaster* was found to be very suitable for experimental verification of chromosomal theory on inheritance by Morgan and his colleagues because

- A. it reproduces parthenogenetically
- B. A single mating produces two young flies
- C. smaller female is easily recognizable from larger male
- D. It completes life cycle in about two weeks

Answer: D

 [Watch Video Solution](#)

282. The total amount of DNA in human diploid cells is not dissimilar from that of chimpanzee but the diploid number of chromosomes in chimpanzee is

- A. 44
- B. 46
- C. 48

Answer: C



Watch Video Solution

283. Which one of the following conditions correctly describes the manner of determining the sex in the given example

- 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 humans as found in turner syndrome, determines female sex

D. Homozygous sex chromosomes (XX) produce male in
Drosophila

Answer: B

 [Watch Video Solution](#)

284. What are those structures that appear as 'beads-on-string' in the chromosomes when viewed under electron microscope?

- A. genes lie in a linear order in the chromosomes
- B. Nucleotides
- C. Nucleosomes
- D. Base pairs

Answer: C

 [Watch Video Solution](#)

285. When two unrelated individuals or lines are crossed, the performance of F_1 hybrid is often superior to both its parents.

This phenomenon is called:

- A. Heterosis
- B. Transformation
- C. Splicing
- D. Metamorphosis

Answer: A

286. Test cross in plants or in *Drosophila* involves crossing

1. Between two genotypes with recessive trait
 2. Between two F_1 hybrids
 3. The F_1 hybrid with a double recessive genotype
 4. Between two genotypes with dominant trait
-
- A. Between two genotypes with recessive trait
 - B. Between two F_1 hybrids
 - C. The F_1 hybrid with a double recessive genotype
 - D. Between two genotypes with dominant trait

Answer: C



Watch Video Solution

287. Which one of the following conditions of the zygotic cell would lead to the birth of a normal human female child?

1. two X chromosomes
2. Only one Y chromosome
3. Only one X chromosome
4. One X and one Y chromosome

- A. two X chromosomes
- B. Only one Y chromosome
- C. Only one X chromosome
- D. One X and one Y chromosome

Answer: A



Watch Video Solution

288. If a colour blind man marries a woman who is normal but carries this trait, the progeny will be

1. sons and daughters will be normal
2. sons will be colour blind, daughters will be normal
3. sons will be normal, daughters will be carriers
4. both sons and daughters can be color blind

- A. sons and daughters will be normal
- B. sons will be colour blind, daughters will be normal
- C. sons will be normal, daughters will be carriers
- D. both sons and daughters will be color blind

Answer: C



Watch Video Solution

289. If F_1 generation has all tall plants and ratio of F_2 generation is 3 tall : 1 dwarf, it proves

1. Law of independent assortment
2. law of segregation
3. law of dominance
4. incomplete dominance

A. Law of independent assortment

B. law of segregation

C. law of dominance

D. incomplete dominance

Answer: B



Watch Video Solution

290. Multiple phenotype is seen in

- A. dominance relationship
- B. particulate inheritance
- C. monogenic inheritance
- D. polygenic inheritance

Answer: D



Watch Video Solution

291. Mitotic chromosomes are stained with

- A. safranin
- B. fast green
- C. amido blue

D. Acetocarmine

Answer: D



Watch Video Solution

292. The term genetics was coined by

A. G.J. mendel

B. William Bateson

C. H.D. vries

D. A.V. Leeuwenhoek

Answer: B



Watch Video Solution

293. A normal-visioned man whose father was colour-blind, marries a woman whose father was also colour-blind. They have their first child as a daughter. What are the chances that this child would be colour-blind?

- A. zero percent
- B. 0.25
- C. 0.5
- D. 1

Answer: A

 [Watch Video Solution](#)

294. F_2 generation in Mendelian cross showed that both genotypic and phenotypic ratios are same as 1 : 2 : 1. It represents a case of:

1. Dihybrid cross
 2. Monohybrid cross with complete dominance
 3. Monohybrid cross with incomplete dominance
 4. Co-dominance
-
- A. Dihybrid cross
 - B. Monohybrid cross with complete dominance
 - C. Monohybrid cross with incomplete dominance
 - D. Co-dominance

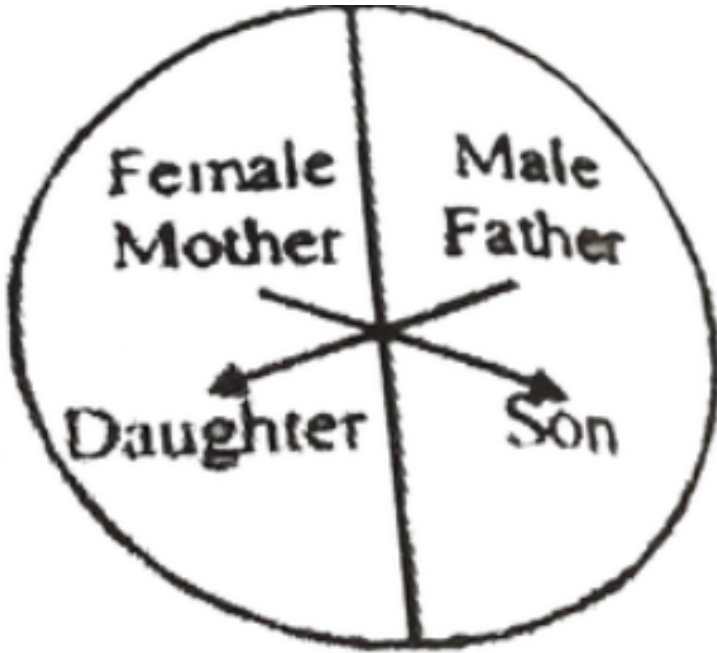
Answer: C



Watch Video Solution

295. 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. Haemophilia
- B. Thalassemia
- C. Phenylketonuria
- D. Sickle cell anaemia

Answer: A

 [Watch Video Solution](#)

296. A test cross is carried out:

1. Assess the number of alleles of a gene
 2. Determine whether two species or varieties will breed successfully
 3. determine the genotype of a plant at F_2
 4. Predict whether two traits are linked
-
- A. Assess the number of alleles of a gene
 - B. Determine whether two species or varieties will breed successfully
 - C. determine the genotype of a plant at F_2
 - D. Predict whether two traits are linked

Answer: C



Watch Video Solution

297. A woman with straight hair mates with man with curly hair who is known to be heterozygous for that trait. What is the chance that their first child will have curly hair?

1. No chance
2. One in two
3. It is certain
4. One in four

- A. No chance
- B. One in two
- C. It is certain
- D. One in four

Answer: B



Watch Video Solution

298. Which of the following crosses and resultant phenotypic ratios are mismatched?

a. $Tt \times Tt$ % 3:1

b. $tt \times Tt$ % 2:1

c. $TtYy \times ttyy$ % 1:1:1:1

d. $TtYy \times TtYy$ % 9:3:3:1

A. $Tt \times Tt$ % 3:1

B. $tt \times Tt$ % 2:1

C. $TtYy \times ttyy$ % 1:1:1:1

D. $TtYy \times TtYy$ % 9:3:3:1

Answer: B



Watch Video Solution

299. The segment of DNA which participates in crossing over is termed as

1. Recon
2. Cistron
3. Muton
4. Operon

A. Recon

B. Cistron

C. Muton

D. Operon

Answer: A



Watch Video Solution

300. Lampbrush chromosomes are giant chromosomes which are commonly seen in

1. Salivary glands of Chironomous
2. Salivary glands of Drosophila
3. Oocytes of sharks
4. Gametes of Drosophila

A. Salivary glands of Chironomous

B. Salivary glands of Drosophila

C. Oocytes of sharks

D. Gametes of Drosophila

Answer: C



Watch Video Solution

301. In which type of chromosome, one arms is very long and one arm is very short

1. Acrocentric
2. Metacentric
3. Submetacentric
4. Telocentric

A. Acrocentric

B. Metacentric

C. Submetacentric

D. Telo centric

Answer: A



Watch Video Solution

302. Highest number of chromosomes is found in the gamete of

- A. Onion
- B. Potato
- C. Rice
- D. Ophioglossum

Answer: D



Watch Video Solution

303. X-chromosomes or X-body was first observed by

- A. Mendel-1901
- B. Castle-1910
- C. Henking-1891

Answer: C



Watch Video Solution

304. In a Hardy-Weinberg population, if a gene has only two alleles A and a, and the gene frequency of allele A is 0.4. What is the frequency of allele 'a'?

- a. 0.6
- b. 0.48
- c. 0.16
- d. 0.36

A. 0.6

B. 0.48

C. 0.16

D. 0.36

Answer: A



Watch Video Solution

305. If both parents are carriers for thalassemia, which is an autosomal recessive disorder, what are the chances for pregnancy resulting in an affected child?

A. 0.25

B. 1

C. no chance

D. 0.5

Answer: A



Watch Video Solution

306. which mendelian idea is depicted by a cross in which the F1 generation resembles both the parents

- A. inheritance of one gene
- B. co-dominance
- C. incomplete dominance
- D. law of dominance

Answer: B



Watch Video Solution

307. The incorrect statement with regard to haemophilia is

- A. It is a dominant disease

- B. A single protein involved in the clotting of blood is affected
- C. it is a sex-linked disease
- D. it is a recessive disease

Answer: A

 [Watch Video Solution](#)

308. Which of the following statements is not true of two genes that show 50% recombination frequency?

- A. The genes show independent assortment
- B. if the genes are present n the same chromosome, they undergo more than one crossovers in every meiosis
- C. the genes may be on different chromosomes
- D. the genes are tightly linked

Answer: D



Watch Video Solution

309. A man whose father was colour blind marries a woman who has a colour blind mother and normal father .What percentage of male children of this couple will be colour blind ?

A. 0.75

B. 0.25

C. 0

D. 0.5

Answer: D



Watch Video Solution

310. In a population of 1000 individuals 360 belong to genotype AA, 480 to Aa and the remaining 160 to aa. Based on this data, the frequency of allele A in the population is

A. 0.7

B. 0.4

C. 0.5

D. 0.6

Answer: D

 [Watch Video Solution](#)

311. A human female with turner's syndrome

A. Is able to produce children with normal husband

B. Has 45 chromosomes with XO

C. has one additional X chromosome

D. Exhibits male characters

Answer: B



Watch Video Solution

312. Fruit colour in squash is an example of

A. Inhibitory genes

B. recessive epistasis

C. Dominant epistasis

D.

Answer: C



[Watch Video Solution](#)

313. How many pairs of contrasting characters in pea plants were studied by Mendel in his experiments?

- A. six
- B. eight
- C. seven
- D. five

Answer: C



[Watch Video Solution](#)

314. The exchange of one part of a chromosome to the other part of another chromosome is called

- A. duplication
- B. translocation
- C. crossing over
- D. inversion

Answer: B



Watch Video Solution

315. Multiple alleles are present

- A. at different loci on the same chromosome
- B. at the same locus of the chromosome
- C. on non-sister chromatids
- D. on different chromosomes

Answer: B



Watch Video Solution

316. An abnormal human baby with XXX sex chromosomes was born due to

- A. formation of abnormal ova in the mother
- B. fusion of two ova and one sperm
- C. fusion of two sperms and one ovum
- D. formation of abnormal sperms in the father

Answer: A



Watch Video Solution

317. Alleles are:

- A. true breeding homozygotes
- B. different molecular forms of a gene
- C. heterozygotes
- D. different phenotypes

Answer: B



Watch Video Solution

318. A gene showing codominance has

- A. one allele dominant on the other
- B. alleles tightly linked on the same chromosome
- C. alleles that are recessive to each other

D. both alleles independently expressed in the heterozygote

Answer: D



Watch Video Solution

319. The term "linkage" was coined by

A. T.H. Morgan

B. T. Boveri

C. G.Mendel

D. W. Sutton

Answer: A



Watch Video Solution

320. Select the wrong statement

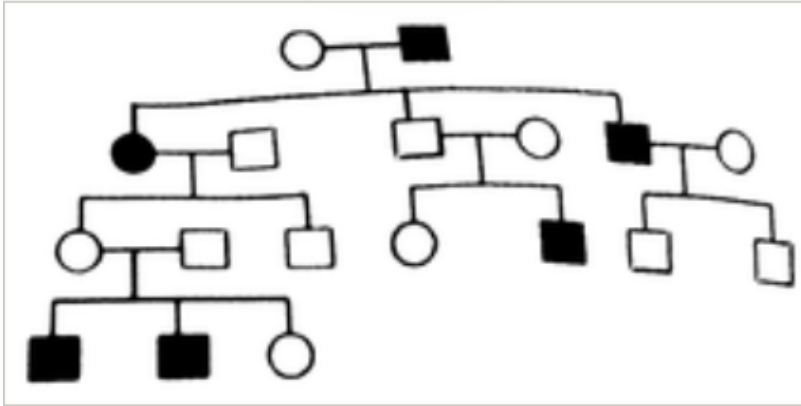
- A. The viroids were discovered by D.J. Ivanowski
- B. W.M. Stanley showed that viruses could be crystallized
- C. the term 'contagium vivum fluidum' was coined by M.W. Beijerinck
- D. Mosaic disease in tobacco and AIDS in human being are caused by viruses

Answer: A

 [Watch Video Solution](#)

321. In the following human pedigree, the filled symbols represent the affected individuals. Identify the type of given

pedigree.



- A. Autosomal dominant
- B. X-linked recessive
- C. Autosomal recessive
- D. X-linked dominant

Answer: C

 [Watch Video Solution](#)

322. A colour blind man marries a woman with normal sight who has no history of colour blindness in her family. What is the probability of their grandson being colour blind

A. 0.5

B. 1

C. Nil

D. 0.25

Answer: D



Watch Video Solution

323. In his classic experiments on pea plants Mendel did not use

1. seed colour

2. pod length

3. seed shape

4. flower position

A. seed colour

B. pod length

C. seed shape

D. flower position

Answer: B



Watch Video Solution

324. A pleiotropic gene

1. is expressed only in primitive plants

2. is a gene evolved during pliocene

3. controls a trait only in combination with another gene

4. controls multiple traits in an individuals

- A. is expressed only in primitive plants
- B. is a gene evolved during pliocene
- C. controls a trait only in combination with another gene
- D. controls multiple traits in an individuals

Answer: D

 [Watch Video Solution](#)

325. A plant species A has a diploid number of chromosomes as 12. Another plant species B has a diploid chromosome number of 16. The allopolyploid developed by hybridization of A and B shall have a diploid chromosome number as

- A. 14
- B. 28

C. 40

D. 58

Answer: B



Watch Video Solution

326. In a testcross involving F_1 dihybrid flies, more parental-type offspring were produced than the recombinant-type offspring.

This indicates

A. chromosomes failed to separate during meiosis

B. the two genes are linked and present on the same chromosome

C. both of the characters are controlled by more than one gene

D. the two genes are located on two different chromosomes

Answer: B



Watch Video Solution

327. Match the terms in column I with their description in column II and choose the correct option

Column I	Column II
(a) Dominance	(i) Many genes govern a single character
(b) Codominance	(ii) In a heterozygous organism only one allele expresses itself
(c) Pleiotropy	(iii) In a heterozygous organism both alleles express themselves fully.
(d) Polygenic inheritance	(iv) A single gene influences many characters

A. A-ii,B-iii,C-iv,D-i

B. A-iv,B-i,C-ii,D-iii

C. A-iv,B-iii,C-i,D-ii

D. A-ii,B-i,C-iv,D-iii

Answer: A



Watch Video Solution

328. A cell at telophase stage is observed by a student in a plant brought from the field. He tells his teacher that this cell is not like other cells at telophase stage. There is no formation of cell plate and thus the cell is containing more number of chromosomes as compared to other dividing cells. This would result in

- A. polyploidy
- B. somaclonal variation
- C. Polyteny
- D. aneuploidy

Answer: A



Watch Video Solution

329. Which of the following most appropriately describes haemophilia?

- A. X-linked recessive gene disorder
- B. chromosomal disorder
- C. Dominant gene disorder
- D. Recessive gene disorder

Answer: A

 [Watch Video Solution](#)

330. Which of the following statements is not true for cancer cells in relation to mutations

- A. Mutations destroy telomerase inhibitor

- B. Mutation inactivate the cell control
- C. Mutations inhibit production of telomerase
- D. Mutations in proto-oncogenes accelerate the cell cycle

Answer: C



[Watch Video Solution](#)

331. A tall true breeding garden pea plant is crossed with a dwarf true breeding garden pea plant. When the F_1 plants were selfed the resulting genotypes were in the ratio of

- A. 1 : 2 : 1 :: tall heterozygous: tall homozygous : dwarf
- B. 3 : 1 : : tall: dwarf
- C. 3 : 1 : : dwarf: tall
- D. 1 : 2 : 1 :: tall homozygous: tall heterozygous: dwarf

Answer: D



Watch Video Solution

332. Pick out the correct statement

- (I) Haemophilia is a sex-linked recessive disease
- (II) Down's syndrome is due to aneuploidy
- (III) Phenylketonuria is an autosomal recessive gene disorder
- (IV) Sickle-cell anaemia is an X-linked recessive gene disorder

- A. (ii) & (iv) are correct
- B. (i), (iii) and (iv) are correct
- C. (i), (ii) and (iii) are correct
- D. (i) and (iv) are correct

Answer: C





[Watch Video Solution](#)

333. Which one of the following generates new genetic combinations leading to variation ?

- A. Vegetative reproduction
- B. Parthenogenesis
- C. Sexual reproduction
- D. Nucellar polyembryony

Answer: C



[Watch Video Solution](#)

334. A true breeding plant is

- A. one that is able to breed on its own

B. produced due to cross-pollination among unrelated plants

C. near homozygous and produces offspring of its own kind

D. always homozygous recessive in its genetic constitution

Answer: C



Watch Video Solution

335. If a colour -blind man marries a woman who is homozygous for normal colour vision , the probability of their son being colour -blind is

A. 0

B. 0.5

C. 0.75

D. 1

Answer: A



Watch Video Solution

336. Which one form those given below is the periods for Mendel's hybridization experiments

A. 1856-1863

B. 1840-1850

C. 1857-1859

D. 1870-1877

Answer: A



Watch Video Solution

337. Among the following characters, which one was not considered by Mendel in his experiment on pea

- A. Stem-Tall or Dwarf
- B. Trichomes-Glandular or non-glandular
- C. Seed-Green or Yellow
- D. Pod-inflated or Constricted

Answer: B

 [Watch Video Solution](#)

338. The genotypes of husband and wife are $I^A I^B$ and $I^A i$. Among the blood groups 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

Answer: C



Watch Video Solution

339. The association of histone H1 with a nucleosome indicates

- A. Transcription is occurring
- B. DNA replication is occurring
- C. The DNA is condensed into a chromatin fibre.
- D. The DNA double helix is exposed.

Answer: C

 [Watch Video Solution](#)

340. Thalassemia and sickle cell anemia are caused due to a problem in globin molecule synthesis. Select the correct statement

- A. both are due to a qualitative defect in globin chain synthesis.
- B. both are due to a quantitative defect in globin chain synthesis.
- C. thalassemia is due to less synthesis of globin molecules
- D. Sickle cell anemia is due to a quantitative problem of globin molecules

Answer: C



Watch Video Solution

341. A disease caused by an autosomal primary non-disjunction is

- A. Down's syndrome
- B. Klinefelter's syndrome
- C. turner's syndrome
- D. sickle cell anemia

Answer: A



Watch Video Solution

342. Which of the following characteristics represent 'Inheritance of blood groups' in humans?

- a. Dominance
- b. Co-dominance
- c. Multiple allele
- d. Incomplete dominance
- e. Polygenic inheritance

A. (a), (c) and (e)

B. (b), (d) and (e)

C. (a), (b) and (c)

D. (b), (c) and (e)

Answer: C



Watch Video Solution

343. A woman has an X-linked condition on one of her X chromosomes . This chromosome can be inherited by

- A. Both sons and daughters
- B. Only grandchildren
- C. Only sons
- D. Only daughters

Answer: A



Watch Video Solution