1. Agrobacterium tumefaciens contains a large plasmid, which induces tumour in the plants it is termed as-
(1) Ti plasmid
(2) Ri plasmid
(3) Recombinant plasmid
(4) Shine Delgrano sequence

2. A trihybrid cross involve three pair of characters which will give rise to the f! hybrids which are heterozygous for three genes. How many types of gametes will be produced in both male and female-
(1) 2 (2) 4
(3) 6 (4) 8

3. A functional complex comprising a cluster of genes including structural gene, a promoter gene, an operator gene and a regulator gene was discovered by:-
(1) Beadle and Tatum (1958)
(2) Watson and crick (1953)
(3) Jacob and Monad (1961)
(4) Britten and Davidson (1961)

4. Which one of the following traits studied by Mendel in garden pea was a recessive character :-
(1) Axial flower positon
(2) Green cytyledon colour
(3) Green pod colour
(4) Yellow seed colour

5. When an Fj individual is crossed with its either of the two parent. Then it is known as :-
(1) Test cross (2) Back cross
(3) Reciprocal cross (4) Monohybrid cross

6. Dihybrid test cross ratio proposed by Mendel is
(1) 9 : 3 : 3 : 1 (2) 1 : 1 : 1 : 1
(3) 1:2:2:4:1:2:1:2:1 (4)3 : 1

7. In incomplete dominance ratio of Red : Pink: Whiteis :-
(1) 1 : 2 : 1 (2) 1 : 1 : 2
(3) 1 : 2 : 2 (4) 2 : 2 : 1

8. How many pairs of contrasting characters were chosen by Mendel for his study with garden pea:-
(1) 3 (2) 5
(3) 7 (4) 14

9. The term 'allelomorphic' implies :-
(1) Any two characters
(2) A pair of contrasting characters
(3) Sex linked characters
(4) A pair of non-contrasting characters

10. If a homozygous red flowered plant is crossed with white plant, the offspring will be :-
(1) All red flowered
(3) Half red flowered
(2) All white flowered
(4) Half white flowered

11. What would be the colour of flower in Fj progeny as a result of cross between homozygous red and homozygous white flowered Snapdragon :-
(1) Red (2) White
(3) Red and White (4) Pink

12. Who postulated the 'Chromosome Theory of Inheritance' :-
(1) De Vries (2) Mendel
(3) Sutton and Boveri (4) Morgan

13. Drosophila melanogaster has :-
(1) 2 pairs of autosomes and 1 pair of sex chromosomes x
(2) 3 pairs of autosomes and 3 pairs of sex chromosomes
(3) 1 pairs of autosomes and 3 pairs of sex chromosomes
(4) 3 pairs of autosomes and 1 pairs of sex chromosomes I

14. Incomplete dominance is found in :-
(1) Pisum sativum
(2) Antrrhinum majus
(3) Both Pisum sativum and Antirrhinum majus
(4) None of these

15. How many types of genotypes are formed in F2 progeny obtained from self polination of a dihybrid
Fj :-
(1) 9 (2) 3
(3) 6 (4) 1

16. Functioning of structural genes is controlled by -
(1) Operator (2) Promoter
(3) Ligase (4) Regulator gene

17. Which of the following is a test cross :-
(1) Tt x Tt (2) TT x Tt
(3) TT x tt (4) tt x Tt

18. Mendel observed that certain characters not assort independently. Later research found it to be dueto :-
(1) Amitosis
(2) Linkage of characters
(3) Dominance of one trait over the other
(4) Crossing-over

19. Nobel prize for the concept of jumping genes was awarded to :-
(1) H.G. khorana
(2) Barabara Me clintock
(3) Kornberg
(4) Watson

20. More advancement in genetic engineering is dueto :
(1) Restriction endonuclease
(2) Reverse transcriptase
(3) Protease
(4) Zymase

21. The 1:2:1 ratio with the pink flower in the F2 generation indicate the phenomenon of :-
(1) dominance
(2) codominance
(3) incomplete dominance
(4) segregation

22. Transgenic crops are modified through genetic engineering to develop natural resistance to insect pests. Which one is a transgenic plant :-
(1) Tobacco and cotton
(2) Tomato and rice
(3) Maize and sugarcane
(4) Tomato and wheat

23. In Mirabilis red (RR) and white (rr) flower produces pink (Rr) flower. A plant with pink flower is crossed with white flower the expected phenotypic ratioIS :-
(1) red : pink : white (1
(2) pink : white (1 : 1)
(3) red : pink (1 : 1)
(4) red : white (3 : 1)

24. If a dwarf plant is treated with gibberellins it becomes tall and this plant now crosses with pure tall plant then progeny of first generation (Fi) is
(1) All dwarf
(2) All tall
(3) 75% tall and 25% dwarf
(4) 75% dwarf and 25% tall

25. A child with mother of 'A' blood group and father of 'AB1 blood group :-
(1) O (2) A
(3) A and O (4) O and B

26. Which one of the following is associated with sex- linked inheritance :-
(1) Night-blindness
(2) muscular dystrophy
(3) astigmatism
(4) Polydactyly

27. Haemophilia is :-
(1) deficiency disorder
(2) male sex disorder
(3) female sex disorder
(4) autosomal sex disorder
(2) female (4) intersex

28. Sex determination ratio in an organism is given by $\frac{X}{A}$ 1-5 , then organism will be
(1) male (2)female
(3) super female (4)intersex

29. Epistasis implies :-
(1) One pair of genes can completely mask the expression of another pair of genes ,
(2) One pair of genes independently controls a particular phenotype
(3) One pair of genes enhances the phenotypic expression of another pair of genes
(4) Many genes collectively control a particular phenotype

30. The possible blood groups of children born to parents having A and AB groups are :-
(1) O, A (2) A, B, AB
(3) O, A, B (4) O, A, B, AB

31. A test cross is performed
(1) by selfing of p2-generation plants
(2) by selfing of Fj-generation plants
(3) to determine whether F^plant is homozgous or heterozygous
(4) between a homozygous dominant and homozygous recessive plant

32. Barr body is associated with :-
(1) sex chromosome of female
(2) sex chromosome of male
(3) autosome of female
(4) autosome of male

33. Colour blindnesses due to :-
(1) recessive female chromosome
(2) dominant female chromosome
(3) recessive male chromosome
(4) dominant male chromosome

34. Alleles are :-
(1) Alternate forms of a gene
(2) homologous chromosome
(3) Pair of sex chromosome
(4) none of these

35. Genetic recombination is due to :-
(1) fertilization and meiosis
(2) mitosis and meiosis
(3) fertilzation and mitosis
(4) fertilization and amitosis

36. The function of polymerase chain reaction (PCR)is
(1) translation (2) transcription
(3) DNA amplification (4) None of these

37. A man with blood group B marries a female with blood group A and their first child is having blood group B. What is the genotype of child :-
(1) IAIB (2) IAI°
(3) IBI° (4) IBIB

38. If a cross is made between A A and aa, the nature of f! progeny will be :-
(1) genotypically AA, phenotypically a
(2) genotypically Aa, phenotypically a
(3) genotypically Aa, phenotypically A
(4) genotypically aa, phenotypically A

39. When a tall plant with round seeds (TTRR) is crossed with a dwarf plant with wrinkled seeds (ttrr), the fi generation consists of tall plants with rounded seeds. How many types of gametes Fj plant would porduce :-
(1) One (2) Three
(3) Four (4) Eight

40. Family has 9 girls, Probability of son at 10th birth is :-
(1) 50% (2) 100%
(3) 25% (4) 75%

41. Height is :-
(1) somatogenic variation
(2) discontinuous variation
(3) continuous variation
(4) blastogenic variation

42. Haemophilic female marries normal male, the theoretical ratio of their offsprings regarding haemophilia will be :-
(1) All offsprings are haemophilic
(2) All girls are haemophilic
(3) All sons are haemophilic
(4) half daughters and half sons are haemophilic

43. A child with mother of blood group A and father of blood group AB, will not have which of the following blood group :-
(1)A (2)B
(3) AB (4) O

44. Gynandromorphs are animals having :-
(1) same sex in all cells of the body
(2) different sexes in all cells of the body
(3) same sex in different cells of the body
(4) different sexes in different cells of the body

45. In male grass hoppers and moths there are two pairs of autosomes and :-
(1) X only (2) X and Y
(3) Y only (4) none of these

46. Which genotype represents a true hybrid condition-
(1) TTrr (2) TtRr
(3) TTRr (4) ttrr

47. A dihybnd plant on self pollination, produced 400 phenotypes with 4 types of genotype. How many seeds will have genotype TtRr:-
(1) 200 (2) 100
(3) 50 (4) 150

48. Which of the following points further strengthened Mendelism :-
(1) law of independent assortment which was based on monohybrid cross
(2) law of independent assortment which could be stated on the basis of segregation of gametes
(3) incomplete dominance gave a new way to mendelism
(4) a character controlled by a pair of unit factors

49. Which of the following symbols are used for representing chromosome of birds :-
(1) ZZ - ZW (2) XX - XY
(3) XO – XX (4) ZZ – WW

50. Genotypic ratio of a monohybrid cross is :-
(1) 1 : 2 : 1 (2) 3 : 1
(3) 9 : 3 : 3 : 1 (4) 1 : 1 : 1 : 1

51. If Aabb xaaBb, then genotypic ratio of its progeny Will be :-
(1) 9 : 3 : 3 : 1 (2) 1 : 2 : 1
(3) 1 : 1 : 1 : 1 (4) 4 : 1

52. Gene for colourblindness is located on :-
(1) Y chromosome (2) 13th chromosome
(3) X chromosome (4) 21th chromosome

53. A pure tall and a pure dwarf plant were crossed to produce offsprings. Offsprings were self crossed, then find out the ratio between true breeding tall to true breding dwarf :-
(1) 1 : 1 (2) 3 : 1
(3) 2 : 1 (4) 1 : 2 : 1

54. X-linked recessive gene is :-
(1) always expressed in male
(2) always expressed in female
(3) lethal
(4) sub lethal

55. Which of the follwing is used as a best genetic vectorin plants :-
(1) Bacillus thuriengenesis
(2) Agrobacterium tumifaciens
(3) Pseudomonas putida
(4) All of these

56. Who explained the operon model for the first time
(1) Francois Jacob
(2) Jacques Monod
(3) Francois Jacob and Jacques Monod
(4) Beadle & Tatum

57. Functioning of structural genes is controlled by:-
(1) Operator (2) Promoter Ligase
(3) Regulatory gene (4) polymerase

58. A mutant micro-organism unable to synthesize a compound required for its growth but able to grow if the compound is provided, is known as :-
(1) Auxotroph (2) prototroph
(3) Autotroph (4) None of these

59. Linkage was first studied by
(1) Darwin (2) Morgan
(3) Bateson and Punnett (4) Mendel

60. When Fj generation hybrid tall Tt is crossed with dwarf tt parent, it is a case of
(1) Dihybrid cross (2) test cross
(3) Crossing over (4) Reciprocal cross

61. Red and tall dominant character hybrid plant when crossed with recessive white dwarf plant (Rr Tt x rr tt). What will be the ratio of respective four combinations red tall, red dwarf, white tall and white dwarf plants in the next generation :-
(1) 9 : 3 : 3 : 1 (2) 15 : 1 : 0 : 0
(3) 9 : 3 : 4 : 0 (4) 4 . 4 . 4 . 4

62. If hybrid red flowered plants of pea are crossed back to pure red flowered parent, the progeny will show :-
(1) All red flowered plants
(2) White flowered plants
(3) 50% red and 50% white flowered plants
(4) 3 Red : 1 white flowered plants

63. Jumping genes are found in :-
(1) eukaryotes
(2) bacteriophage
(3) bacteria
(4) eukaryotes and prokaryotes

64. Mendel choose pea plant due to :-
(1) its economic importance
(2) presence of contrasting characters
(3) its availability
(4) its cheapness

65. Kappa-particles shows :-
(1) cytoplasmic inheritance
(2) Nuclear inheritance
(3) Nucleo-cytoplasmic inheritance
(4) Mutation

66. Genetically engineered human insulin is called
(1) Humulin (2) Haematin
(3) Hybridoma (4) Hybrid

67. An individual having identical alleles is called is called
(1) Homozygous (2) Hybrid
(3) Phenotype (4) Heterozyous

68. The genes that keeps on changing-their location on chromosomes are known as
(1) Jumping genes (2) Duplicate genes
(3) Lethal genes (4) Spit genes

69. Mendel's Law is valid only when
(1) Two f! hybids are crossed
(2) One parent is crossed with Fj hybrid
(3) Two pure breeding contrasting characers are crossed
(4) None of the above

70. Mendel's laws of inheritance are applicable on the plants which :-
(1) Reproduce asexually
(2) Reproduce sexually
(3) Reproduce vegetatively
(4) All of the above plants

71. The genotypic ratio in F2 generation in a monohybrid cross would be :-
(1) 1 : 1 : 2 (2) 1 : 2 : 1
(3) 2 : 1 : 1 (4) None of the above

72. Genes are the units of :-
(1) Morphological units
(2) Functional units
(3) Hereditary units
(4) None of the above

73. In man sex linked characters are mainly transmitted through :-
(1) X-chromosome
(2) Autosomesg
(3) Y-chromosome
(4) X-chromosome, Y-chromosome and Autosomes

74. Klinefelter's syndrome has chromosome arrangement :-
(1) XX (2) XXY
(3) XY (4) XO

75. If a colourblind woman marries with a normal man. The offspring will be :-
(1) All colourblind
(2) All daughters normal and all son will be colourblind
(3) All normal
(4) All daughters will be colourblind and all sons will be normal

76. A cross used to ascertain whether a dominant is homozygous or heteroxygous :-
(1) Reciprocal (2) Back cross
(3) Test cross (4) Monohybrid

77. Chromosomal theory of genes
(1) segregation of genes
(2) diploidy and haploidy
(3) sex linkage
(4) presence of sex chromosomes

78. If somatic cells of a human male contain single Barrbody, the genetic composition of the person would be :-
(1) XYY (2) XXY
(3) XO (4) XXXY

79. Abzymes are :-
(1) abnormal enzymes
(2) enzymes act on antibodies
(3) antibodies act as enzymes
(4) all these

80. Where as the number of chromosomes is reduced to half in first reduction division of meiosis, then what is the need for second meiotic division :-
(1) For the segregation of replicated chromosomes
(2) For equal distribution of haploid chromosomes
(3) For the formation of four gometes
(4) for equal distribution of genes on chromosomes

81. If mother has blood group B, father has A group, the offspring will be of :-
(1) A group (2) O group
(3) AB (4) any of the above

82. Hybridoa technology was developed by :-
(1) Taggart, 1982
(2) Prie and Saxton, 1987
(3) Vitella et al, 1982
(4) Kohler and Milstein

83. If a colourblind man is married to a normal woman, then from the point of view of disease, their offsprings will be :-

(1) All sons will be colourblind
(2) All daughters will be colourblind
(3) all sons and daughters will be normal
(4) All sons and daughters will be colour blind

84. The theory where ratio between the number of X-chromosomes and number of complete sets of autosomes will determine the sex is known as :-
(1) Chromosome theory of sex determination
(2) Genie balance theory of sex determination
(3) Harmonal balance theory of sex determination
(4) environmental sex determination

85. The transfer of protein from electrophoretic gel to nitrocellulose membrane is known as :-
(1) transferase (2) northern blotting
(3) western blottin (4) southern blotting

86. DNA- finger printing was discovered by :-
(1) Alec jeffery (2) Cark mullis
(3) C. Milstein (4) Dr. Paul Berg

87. Genetically which of the following marriage is not suitable :-
(1) Both Rh (-ve)
(2) Both Rh (+ve) "
(3) Man Rh (+ve) and women Rh (-ve)
(4) Man Rh (-ve) and women Rh (+ve)

88. Technique for monoclonal antibody production was discovered by :-
(1) Steward and Skoog
(2) Arban and Haberlant
(3) kohler and Milstein
(4) Lister and Koch

89. Which of the following enzyme is used to join DNA fragments :-
(1) Terminase (2) Endonuclease
(3) Ligase (4) DNA polymerase

90. Polydactyly in man is due to :-
(1) autosomal dominant gene
(2) autosomal recessive gene
(3) sex - linked dominant gene
(4) sex - linked recessive gene

91. Sex determination in humans takes place by :-
(1) sex chromosomes of father
(2) measurement of sperm
(3) measurement of ovum
(4) sex chromosomes of mother

STATE PMT EXAMS EXERCISE **ANSWER KEY**

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A.	1	4	3	2	2	2	1	3	2	1	4	3	4	2	1
Q.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A.	4	4	2	2	1	3	1	2	2	2	2	3	3	1	2
Q.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
A.	3	1	1	1	1	3	3	3	3	1	3	3	4	4	1
Q.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A.	2	2	4	1	1	3	3	1	1	2	3	3	1	3	2
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
A.	4	1	4	2	1	1	1	1	3	2	2	3	1	2	2
Q.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
A.	3	1	2	3	1	4	4	3	2	3	1	3	3	3	1
Q.	91														
A.	1														