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Chapter – 05

Genetics and Molecular Biology

- 'Linkage' was discovered by–
(A) Blakslee (B) Morgan
(C) Muller (D) Bateson
- The virus without capsid but only with nucleic acids is called
(A) Capsomere (B) Nucleoid
(C) Prion (D) Virion
- Thymidine dimer formation in DNA is caused by–
(A) X-rays (B) P and y-rays
(C) UV rays (D) Infrared rays
- How many pairs of contrasting characters in pea were selected by Mendel?
(A) 7 (B) 3
(C) 4 (D) 2
- DNA differs from RNA in having nitrogenous base–
(A) Adenine (B) Guanine
(C) Cytosine (D) Thymine
- Who coined the term 'Gene'?
(A) Mendel (B) Johannsen
(C) Watson (D) Beadle
- The sugar present in DNA is
(A) Pentose (B) Xylulose
(C) Hexose (D) Heptulose
- Who among the following analysed DNA for the first time?
(A) Arthur Kornberg (B) Hargobind Khorana
(C) MW Nirenberg (D) Watson and Crick
- A cross between homozygous recessive and heterozygous plant is
(A) Back cross (B) Test cross
(C) Monohybrid cross (D) Dihybrid cross
- Transfer of genetic information from one generation to the next generation is by–
(A) RNA (B) Codon
(C) DNA (D) Messenger RNA
- Which of the following correctly explains the phenomenon of 'Test-tube baby'?
(A) When every process of embryo formation is in the test-tube
(B) When the embryo develops in a test-tube
(C) When the fertilisation is external and development is internal
(D) When the fertilisation is internal and development is external
- Chromosomes consist of–
(A) DNA and Lipids (B) RNA and Amino acids
(C) DNA and Proteins (D) RNA and Sugar
- Which chromosomal combination is responsible for maleness in man?
(A) XO (B) XXX
(C) XX (D) XY
- The coding segment of DNA is called in–
(A) Codon (B) Muton
(C) Intron (D) Exon
- DNA fingerprinting is used to identify the–
(A) Parents (B) Rapist
(C) Thieves (D) All of the above
- 'Dolly', the world's first cloned animal was a–
(A) Sheep (B) Cow
(C) Goat (D) Pig
- Human cloning is permitted in Britain for the purpose of
(A) Reproduction (B) Research
(C) Therapeutics (D) Genetics
- HYV refers to
(A) Hybrid Yielding Variety
(B) Human Yellow Virus
(C) High Yielding Variety
(D) Human Yellow Vaccine





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19. DNA test was developed by-

- (A) Dr Alec Jeffreys (B) Dr VK Kashyap
(C) Watson and Crick (D) Gregor Mendel

20. Gregor Johnn Mendel is famous for propounding-

- (A) Theory of Mutation
(B) Laws of Heredity
(C) Cell Theory
(D) Theory of Acquired Characters
- Law of Segregation
 - Law of Dominance.
 - Law of independent assortment

21. The term 'GM food' refers to the food-

- (A) That grows under genetic measures
(B) That is genetically modified
(C) That grows under geographical modification
(D) With greater glucose metabolism

22. What determines the sex of a child?

- (A) Chromosome of the father
(B) Chromosomes of the mother
(C) Rh factor of the parents
(D) Blood group of the father

23. The name of the first cloned sheep was-

- (A) Molly (B) Dolly
(C) Jolly (D) Roly

24. A test tube baby means

- (A) A baby grown in a test-tube
(B) Embryo fertilised in uterus and developed in test-tube
(C) Embryo fertilised and developed in uterus
(D) Fertilisation in vitro and then transplantation in the uterus

25. The hybrid between horse and donkey is called-

- (A) Pony (B) Colt
(C) Mule (D) Zebra

26. What is the chromosome number in a human ovum?

- (A) 24 (B) 46
(C) 48 (D) None of these

27. Genes, the hereditary units are located in the-

- (A) Nuclear membrane (B) Chromosomes
(C) Lysosomes (D) Cell membrane

28. Of the total number of genes inherited by a child-

- (A) More from the father
(B) More from the mother
(C) There are an equal number from each parent
(D) There is never a constant number from the parents

29. In test-tube babies, the

- (A) Ovum is fertilised and developed in test-tubes
(B) Ovum is fertilised in the test-tubes and developed in uterus
(C) Ovum is fertilised in the uterus and developed in test tubes
(D) Ovum is developed without fertilisation in test-tubes

30. Which one of the following is a hereditary disease?

- (A) Haemophilia (B) Myopia
(C) Anaemia (D) Leukaemia

31. By which of the following the sex of a child is determined before birth?

- (A) Sperms of father (B) Foetus of mother
(C) Both 'a' and 'b' (D) Nutrition of mother

32. Which of the following is correct?

- (A) DNA is the genetic material in most of the organism
(B) RNA is the genetic material in most viruses and bacteria
(C) DNA is the genetic material in all the viruses
(D) RNA is the genetic material in all the viruses

33. Anglo Nubian is a breed of

- (A) Sheep (B) Goat
(C) Poultry (D) Cattle

34. The drone in honeybee are

- (A) Fertile male (B) Fertile female
(C) Sterile male (D) Sterile female

35. Breeding and management of bees is known as-

- (A) Sericulture (B) Silviculture





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(C) Pisciculture (D) Apiculture

36. What is an antibiotic?

- (A) A chemical compound produced by a living organism that inhibits the growth of other organisms
(B) A compound synthesised by a living organism that inhibits the growth of microbes
(C) A synthetic compound inhibiting the growth of other organisms
(D) A synthetic compound inhibiting the growth of bacteria

37. According to your text, "what can be thought of as the genetic library that keeps life going on Earth"?

- (A) A bio-engineering lab
(B) Human genes
(C) The human genome project
(D) Biodiversity

38. Polyploidy arises due to change in the

- (A) Number of chromatids
(B) Structure of genes
(C) Number of chromosomes
(D) Structure of chromosomes

39. A genetically engineered form of brinjal known as the BT-brinjal has been developed. The objective of this is

- (A) To make it pest resistant
(B) To improve its taste and nutritive value
(C) To make it drought resistant
(D) To make its shelf-life longer

40. Which of the following is a Dominant Autosomal Disorder ?

- (A) Albinism (B) Cystic Fibrosis
(C) Phenyl Ketonuria (D) Alzheimer's Disease

41. Mendel is known as

- (A) Father of Physiology (B) Father of Geology
(C) Father of Genetics (D) Father of Biology

42. The primary function of RNA is

- (A) Photosynthesis (B) Protein Synthesis
(C) Replication (D) Translation

43. In a Punnett Square with the cross AaBb, AaBb, how

many Aabb genotypes would be created?

- (A) 1 (B) 8
(C) 2 (D) 3

44. The Mutation Theory was proposed by ____.

- (A) Charles Lyell (B) William Smith
(C) Hugo De Vries (D) Harrison Schmitt

45. RNA is a polymeric molecule. What does RNA stand for?

- (A) Rado Nuclear Acid (B) Ribo Nucleic Acid
(C) Rhino Nuclear Acid (D) Resto Nucleus Acid

46. Which of the following constitute to form a gene?

- (A) Polynucleotides (B) Hydrocarbons
(C) Lipoproteins (D) Lipids

47. The term 'gene' was coined by

- (A) T.H. Morgan (B) W.L. Johannsen
(C) G. Mendal (D) De Vries

48. The number of chromosomes present in the somatic cell of the human cell is

- (A) 23 (B) 44
(C) 46 (D) 92

49. DNA contains

- (A) Pentose sugar (B) Hexose sugar
(C) Erythrose sugar (D) Sedoheptulose sugar

50. Transfer of genetic information from one generation to the next generation is by

- (A) RNA (B) Codon
(C) DNA (D) Messenger RNA

51. The term 'genetics' was coined by

- (A) Morgan (B) Mendal
(C) Bateson (D) Water

52. The sum of genes in a population is called-

- (A) phenotype (B) Karyotype
(C) Genotype (D) Gene pool

53. Which base in place of thymine is present in RNA?

- (A) Adenine (B) Guanine





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(C) Uracil

(D) Cytosine

54. Transcription means the synthesis of-

(A) Lipids

(B) Protein

(C) DNA

(D) RNA

55. Thiamidine dimer formation in DNA is caused by

(A) IR-rays

(B) X-rays

(C) b and g-rays

(D) UV-rays

56. Coupling and repulsion are the two states of:

(A) Linkage

(B) Chiasma

(C) Mutation

(D) Crossing over

57. When a single gene controls the expression of more than one character, it is said to be

(A) Heterotrophic

(B) Autotrophic

(C) Allotropic

(D) Pleiotropic

58. Genes are not found in pairs

(A) In body cells

(B) In ovary after fertilization

(C) In gametes

(D) In zygotes

59. Which of the following Genetically Modified vegetable is recently being made available in Indian market?

(A) Carrot

(B) Radish

(C) Brinjal

(D) Potato

60. The hydrophilic nature of DNA is due to the presence of:

(A) Thymine base

(B) A number of hydrogen bonds

(C) Phosphate group

(D) Deoxyribose sugar

61. The gene which exhibits multiple effects is known as:

(A) Pseudogene

(B) Pleiotropic

(C) Complementary

(D) Polygene

62. When one gene pair hides the effect of the other unit, the phenomenon is referred to as:

(A) Epistasis

(B) Mutation

(C) None of the options

(D) Dominance

63. People with Down's syndrome invariably affected by:

(A) Huntington's disease

(B) Alzheimer's disease

(C) Meningitis

(D) Brain haemorrhage

64. The enzyme which catalyses the unwinding of DNA helix during replication is:

(A) Primase

(B) Topoisomerase

(C) Helicase

(D) DNA polymerase

65. Webbed neck is a characteristic of

(A) Down's syndrome

(B) Turner's syndrome

(C) Klinefelter's syndrome

(D) Cri-du-chat syndrome

66. Which of the following human genetic disorders is sex-linked?

(A) Haemophilia

(B) Cystic fibrosis

(C) Albinism

(D) PKU

67. DNA shows hyperchromicity on:

(A) Heating

(B) Cooling

(C) Crystallizing

(D) Replication

68. Which of the following branch of biology is related with study of heredity and variations?

(A) Microbiology

(B) Immunology

(C) Genetics

(D) Entomology

69. Which of the following is NOT a vestigial organ in human body?

(A) Thymus Gland

(B) Wisdom teeth

(C) Pharynx

(D) Thyroid gland

70. For which of the following a 'Bt' seed has also been developed?

(A) Wheat

(B) Maize

(C) Cotton

(D) Pulses

71. Dolly was an example of cloned ____.





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- (A) Dog (B) Cow
(C) Sheep (D) Hen

72. Which of the following is a vestigial organ in human body?

- (A) Wisdom teeth (B) Spleen
(C) Thyroid (D) Gall bladder

73. Who among the following is known as 'Father of Genetics'?

- (A) Darwin (B) Mendel
(C) Lamarck (D) De Vries

74. Which of the following is a vestigial organ in human body?

- (A) Tailbone (B) Spleen
(C) Thyroid (D) Gall bladder

75. Who among the following gave 'The Theory of Natural Selection'?

- (A) Richter (B) Lamarck
(C) Darwin (D) Redi

76. Who among the following gave 'Theory of Evolution'?

- (A) Mendel (B) Rutherford
(C) Darwin (D) Hooke

77. What is the full form of RNA?

- (A) Ribonucleic Acid (B) Ribonitric Acid
(C) Ribonutrient Acid (D) Reverse Nucleic Acid

78. What is the full form of DNA?

- (A) Diribo nucleic acid
(B) Di nucleic acid
(C) Dual nitrogen acid
(D) Deoxyribonucleic acid

