

I.CHOOSE THE CORRECT ANSWER

(100 X 1 = 100)

1. Mendel observed 7 pairs of contrasting characters in *Pisum sativum*. Which one of the following is not a part of that?

- i) Tall and dwarf ii) Yellow and green seed colour iii) Terminal and axial flower iv) Smooth and rough stem

2. Primitive man evolved in _____

- i) Africa ii) America iii) Australia iv) India

3. Which of the following is inheritable?

- i) an altered gene in sperm ii) an altered gene in liver cells iii) an altered gene in skin cells iv) an altered gene in udder cells

4. The theory of Natural Selection was proposed by ____.

- i) Charles Darwin ii) Hugo de Vries iii) Gregor Johann Mendel iv) Jean Baptise Lamarck

5. Somatic gene therapy causes _____.

- i) changes in sperm ii) changes in progeny iii) changes in body cell iv) changes in ovum

6. In a pea plant, the yellow colour of the seed dominates over the green colour. The genetic make up of the green colour of the seed can be shown as _____:

- i) GG ii) Gg iii) Yy iv) yy

7. Some people can roll their tongue and this is a genetically controlled auto-somal dominant character. [Roller = RR / Rr; Non-roller = rr] A child who can roll the tongue has one brother who is a non-roller and two sisters who are rollers. If both the parents are rollers, the genotypes of their parents would be ____.

- i) RR x RR ii) Rr x Rr iii) RR x rr iv) rr x rr

8. Hydra, a multi-cellular invertebrate of phylum cnidaria (coelenterata) can give rise to new offspring by various methods. Choose the method by which the offspring are produced with significant variations.

- i) budding ii) regeneration iii) sexual reproduction iv) asexual reproduction

9. The following are the events in the formation of the first cloned animal – the sheep Dolly.

- a) Removal of haploid nucleus from the ovum. b) Implantation of ovum with diploid nucleus into the surrogate mother. c) Collection of udder cell from the sheep. d) Injection of diploid nucleus of udder cell into the enucleated ovum. e) Development of a young clone.

The correct sequential order of these events is _____. i) abcde ii) cabed iii) cadbe iv) edcba

10. The following are statements about stem cells:

- a) There are unspecialised / undifferentiated cells. b) They can be transformed into any type of body cell. c) They can multiply rapidly to form a large number of similar types of cells. d) They cannot transform into cardiac cells or nerve cells. e) They are obtained from reproductive progeny only.

The correct statements are _____: i) a,b,c only ii) c,d,e only iii) a,c,e only iv) b,c,e only

11. In persons suffering from insulin-dependent diabetes, the cells of pancreas are degenerated.

- i) Alpha ii) Beta iii) Gamma iv) Delta

12. Identical twins are born as a result of fertilization between _____.

- i) two eggs and two sperms ii) two eggs and one sperm iii) one egg and one sperm iv) one egg and two sperms

13. Identify the incorrect statement about identical twins.

- i) developed from a single zygote ii) always of the same sex iii) look alike in many aspects iv) differ in their blood groups

14. The correct statement about Neanderthal man is:

- i) the first human like hominid ii) started agriculture iii) ate meat and walked erectly iv) buried the dead

15. The inheritance of characteristics through generation is called “heredity”. In Mendel's *Pisum sativum* plant, the genetic material present is _____.

- i) DNA ii) RNA iii) Protein iv) Cytoplasm

16. Pick out a case of healthy state of an individual.

- i) Mr. X is recovering from an infectious disease. ii) Mr. Y takes insulin injection every day. iii) Mrs. Z is very depressed. iv) Mr. K does his duty and spends time joyfully.

17. Which one of the following is not socially balanced ?

- i) He enjoys a birthday party. ii) He behaves rudely over trivial matters. iii) He adjusts well to the surrounding situation. iv) He attends to his ailing mother at the hospital.

18. _____ is a bacterial disease.

- i) Meningitis ii) Rabies iii) Tetanus iv) Small pox

19. One of the following is transmitted through air. Find it out.

i) Tuberculosis ii) Meningitis iii) Typhoid iv) Cholera

20. The most serious form of malaria is caused by Plasmodium _____.

i) ovale ii) malariae iii) falciparum iv) vivax

21. An example of protozoan infecting our intestine is _____.

i) Plasmodium vivax ii) Entamoeba histolytica iii) Trypanosoma gambiense iv) Taenia solium

22. One of the means of indirect transmission of a disease is _____.

i) sneezing ii) coughing iii) through placenta iv) using utensils of patients

23. When antibodies, extracted from other animals are injected into your body, what kind of immunity do you gain?

i) Artificially active acquired immunity ii) Artificially passive acquired immunity

iii) Naturally active acquired immunity iv) Naturally passive acquired immunity

24. The first vaccine injected into a just born baby is _____.

i) Oral polio ii) DPT iii) DPT and Oral polio iv) BCG

25. In order to lead a healthy life, a person should enjoy physical, mental and social well-being. If a person lacks any one of them, then that person is suffering from _____.

26. A child eats food rich in carbohydrates and avoids protein in its diet. Which type of nutritional deficiency will affect that child? i) Kwashiorkor ii) Nyctalopia iii) Diabetes iv) Down syndrome

27. Assertion (A) Expulsion of excess unused glucose in the blood through urine is observed in a diabetic mellitus person.

Reason (R) : insulin is not produced in sufficient quantity by pancreas.

i) Both 'A' and 'R' are true and 'R' explains 'A'. ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.

iii) Only 'A' is true but 'R' is false. iv) A is false but 'R' is true.

28. Unipolar neurons are found in the _____.

i) Brain ii) Spinal Cord iii) Embryonic nervous tissue iv) Adult nervous tissue

29. The sensory organs contain _____.

i) Unipolar neuron ii) Bipolar neuron iii) Multipolar neuron iv) Medullated neuron

30. The part of brain which controls emotional reactions in our body is _____.

i) Cerebellum ii) Cerebrum iii) Thalamus iv) Hypothalamus

31. One of the following is a part of the brain stem. Pick it out.

i) Forebrain and midbrain ii) Midbrain and hindbrain iii) Forebrain and hindbrain iv) Forebrain and spinal cord

32. Spinal nerves are _____.

i) sensory nerves ii) motor nerves iii) mixed nerves iv) innervating the brain

33. An endocrine gland found in the neck is _____.

i) adrenal gland ii) pituitary gland iii) thyroid gland iv) pancreas

34. An endocrine gland which is both exocrine and endocrine is the _____.

i) pancreas ii) pituitary iii) thyroid iv) adrenal

35. Normal blood glucose level in 1dl of blood is _____.

i) 80-100 mg/dl ii) 80-120 mg/dl iii) 80-150 mg/dl iv) 70-120 mg/dl

36. The "T" lymphocytes are differentiated to resist infection in the _____.

i) parathyroid gland ii) lymph gland iii) thymus gland iv) adrenal gland

37. In Meiosis-I, the pairing of homologous chromosomes take place during _____ stage.

i) leptotene ii) zygotene iii) pachytene iv) diplotene

38. The two systems of the human body which help in the control and co-ordination of metabolic activities are _____.

i) digestive and circulatory ii) respiratory and circulatory iii) excretory and skeletal iv) nervous and endocrine

39. Neurotransmitters are released at the synapse by _____.

i) Tips of Dendrites ii) Synaptic Knobs iii) Organelles of Cyton iv) Myelin sheath of Axon

40. The endocrine gland related to the immune system is _____.

i) Thyroid ii) Thymus iii) Adrenal iv) Pineal

41. The hormone administered by doctors to a pregnant woman to help in childbirth during the time of natural delivery is _____.

i) Oestrogen ii) Progesterone iii) Insulin iv) Relaxin

42. The important event of meiosis is the crossing over. It occurs during _____.

i) Leptotene ii) Pachytene iii) Diplotene iv) Zygotene

43. Reduction division is the process by which gametes are produced. The cells in which reduction division take place are _____.

i) germinal epithelial cells ii) the sensory epithelial cells iii) cuboidal epithelial cells iv) columnar epithelial cells

44. In Amoeba, the cell division takes place _____

i) involving changes in the chromatin reticulum ii) without involving changes in the chromatin reticulum iii) leading to reduction in the number of chromosomes iv) without dividing the nucleus

45. Pick out the item which has sequential arrangement.

i) zygotene -> Leptotene -> Pachytene -> Diplotene -> Diakinesis
ii) Diakinesis -> zygotene -> Leptotene -> Pachytene -> Diplotene
iii) Leptotene -> zygotene -> Pachytene -> Diplotene -> Diakinesis

46. Polio is a viral disease and the affected child suffers from physical disability of limbs. Which system of the body is mostly affected due to this infection?

i) Nervous system ii) Digestive system iii) Respiratory system iv) Excretory system

47. Blinking when a beam of light is suddenly focussed on the eyes and sudden withdrawal of hand upon touching a hot body are some of the examples of reflex actions. Which part of the central nervous system acts as the centre these actions? i) Forebrain ii) Spinal cord iii) Hindbrain iv) Synapse

48. The following are the parts of a neuron:

a) Axon b) Terminal branches c) Cyton d) Dendrites

The correct pathway of a nerve impulse through these parts are _____. i) badc ii) dcab iii) bdac iv) adbc

49. For minor surgeries in the body, doctors administer local anaesthesia to a part of the body so that the pain will not be felt by the patient. At which part, do you think, the nerve impulse is being arrested due to the effect of anaesthesia? i) at cyton ii) at axon iii) at synapse iv) in the middle of axon

50. Assertion (A) : All spinal nerves are mixed nerves.

Reason (R) : Each spinal nerve has a sensory root and a motor root.

i) Both 'A' and 'R' are true and 'R' explains 'A'.
ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.
iii) Only 'A' is true but 'R' is false.
iv) 'A' is false but 'R' is true.

51. The method of reproduction in unicellular organisms like amoeba and bacteria in which they split into two equal halves and produce new ones is called _____.

i) fragmentation ii) binary fission iii) budding iv) spore formation

52. In sexual reproduction of flowering plants, the first event involved in this is _____.

i) fertilization ii) germination iii) regeneration iv) pollination

53. Which of the following statement is true?

i) Thin-walled non-mobile spores are called zoospores.
ii) A motile asexual spore produced by some algae, bacteria and fungi are Akinetes.
iii) Uninucleate, non-motile, asexual spores produced by fungus are called conidia.
iv) Thick-walled vegetative cells produced by algae during adverse conditions are called aplanospores.

54. The fertilized ovary is a fruit. The fruit that develops from a single flower with multicarpellary, apocarpous superior ovary is _____.

i) Aggregate fruit ii) Composite fruit iii) Simple fruit iv) Multiple fruit

55. If a water soaked seed is pressed, a small drop of water comes out through the _____.

i) stomata ii) lenticel iii) micropyle iv) radicle

56. The mango fruit is called a stone fruit because it has _____.

i) skinny epicarp ii) stony mesocarp iii) fleshy endocarp iv) hard endocarp

57. Pick out the wrong statement.

i) In a dicot seed there is a short longitudinal whitish ridge called the raphae.
ii) The minute opening in a dicot seed is known as micropyle.
iii) The rudimentary stem portion is known as radicle.
iv) The rudimentary root portion is called radicle.

58. Consider the following statements regarding the dispersal of fruits and seeds by wind and select the correct answer.

i) Fruits and seeds are dispersed with a sudden jerk by an explosive mechanism.
ii) The fruits of tridax carry a persistent calyx modified into pappus.

iii) The fruits of xanthium have sharp pointed stiff hooks.

iv) The mesocarp of coconut is fibrous.

59. The product of triple fusion which acts as nutritive tissue for the development of an embryo is _____.

i) zygote ii) placenta iii) scutellum iv) endosperm

60. The disadvantage of self-pollination is _____.

i) There is no wastage of pollen grains. ii) The seeds are less in number.

iii) Self-pollination is sure in bisexual flowers iv) Flowers need not depend on agents of pollination.

61. The flower is important to a plant because it helps in _____.

i) attracting ii) production of nectar iii) pollination iv) sexual reproduction

62. The essential organs of the flower are _____.

i) Calyx and Corolla ii) Androecium and Gynoecium iii) Calyx and Androecium iv) Corolla and Gynoecium

63. Cross pollination is important for producing _____.

i) new varieties of plants ii) plants with better growth iii) disease resistant plants iv) all of the above

64. Anemophily occurs in _____.

i) Vallisneria ii) Grass iii) Coconut iv) Datura

65. Which of the following structure / arrangement favours entomophily ?

i) Pollen grains with wings and feathery stigma ii) Colourful petals and nectar secretion

iii) A bunch of flowers with less pollen iv) Pollen grains with mucous covering.

66. Post-fertilization, the ovule changes into a/an _____.

i) seed ii) fruit iii) endosperm iv) pericarp.

67. Which of the following is correctly matched?

i) False fruit – mango ii) Multiple fruit – apple iii) Aggregate fruit – polyalthia iv) Caryopsis – banana

68. Identify the mismatched pair.

i) Legume – Dry dehiscent fruit ii) Cypsela – Dry indehiscent fruit

iii) Pome – Fleshy fruit iv) Regma – Resembles legume

69. Select important characteristic features of mammals

i) four-chambered heart ii) fore-limbs and hind limbs iii) milk-producing glands iv) post anal tail

70. Carnivorous animals use these teeth to tear flesh.

i) incisors ii) canines iii) premolars iv) molars

71. The Henle's loop of nephron is mainly responsible for reabsorption of water in the kidney. Which of the following has a long loop of Henle in its nephrons to conserve water?

i) polar bear ii) camel iii) frog iv) whale

72. Which blood cells of mammals are concerned with immunity?

i) Young Erythrocytes ii) Leucocytes iii) Thrombocytes iv) Matured Erythrocytes

73. You were given two unlabelled slides with blood smears of an amphibian and a mammal. You would differentiate the blood samples by observing the _____.

i) colour ii) nature of RBC's iii) nature of WBC's iv) contents of plasma

74. For the digestion of cellulose, an enzyme called cellulase is required. Some mammals lodge cellulase producing bacteria in their digestive system by offering them food and shelter. These mammals are mostly _____.

i) Herbivores ii) Carnivores iii) Omnivores iv) Sanguivores

75. Forelimbs of mammals have a common basic structure or pattern, but are different in their usage/function in different animals. They can be called _____.

i) Homologous organs ii) Analogous organs iii) Vestigial organs iv) Rudimentary organs

76. Sensitive whiskers are found in _____.

i) Bat ii) Elephant iii) Deer iv) Cat

77. The tusks of elephants are modified _____.

78. Pick out an animal which has a four-chambered stomach.

i) Elephant ii) Dolphin iii) Deer iv) Kangaroo

79. Normal body temperature of man is _____.

i) 98.4 – 98.6oF ii) 96.6 – 96.8oF iii) 94.4 – 98.6oF iv) 98.4 – 99.6oF

80. Mitral valve is found between _____.

i) Right auricle and right ventricle ii) Left auricle and left ventricle

iii) Right ventricle and pulmonary artery iv) Left ventricle and aorta

81. Assertion (A) : Mammalian heart is called myogenic heart.

Reason (R) : Heartbeat is regulated by a specialized muscle bundle (pacemaker) in mammals.

i) Both 'A' and 'R' are true and 'R' explains 'A'. ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.

iii) 'A' is true but 'R' is false. iv) A is false but 'R' is true.

82. One of the following groups contains a non-mammalian animal. Pick up the group.

i) dolphin, walrus, porcupine, rabbit, bat ii) elephant, pig, horse, donkey, monkey

iii) antelope, deer, cow, buffalo, black buck iv) dog, cat, crocodile, lion, tiger

83. The epidermis of mammals contains _____ .

i) hair, bristles, quills ii) hair, nails, claws iii) hair, bristles, horns iv) hair, nails, scales

84. Based on relationship, fill up:

Whale: Flippers:

Bat : _____

85. Fill in the blank.

RBC: Carrier of oxygen

WBC: _____

86. Based on modifications, make the pairs:

Incisor: tusks of elephant;

_____ : quills of porcupine

87. In monotropa the special type of root which absorbs nourishment is the _____

i) Haustoria ii) Mycorrhizal root iii) Clinging root iv) Adventitious root

88. The product obtained in the anaerobic respiration of yeast is _____

i) Lactic acid ii) Pyruvic acid iii) Ethanol iv) Acetic acid

89. The roots of a coconut tree are seen growing far from the plant. Such a kind of movement of root for want of water is _____ .

i) Phototropism ii) Geotropism iii) Chemotropism iv) Hydrotropism

90. The xylem in the plants is responsible for _____.

i) transport of water ii) transport of food iii) transport of amino acids iv) transport of oxygen

91. The autotrophic nutrition requires

i) CO_2 and water ii) chlorophyll iii) sunlight iv) all the above

92. Leaf pores / stomata help in _____.

i) intake of CO_2 during photosynthesis ii) release of O_2 during photosynthesis

iii) release of water vapour during transpiration iv) All of these

93. _____ of green plants are called factories of food production.

i) Mitochondria ii) Chloroplasts iii) Endoplasmic reticulum iv) Nucleus.

94. The special root-like structure of plant parasites in cuscuta and viscum are called _____ .

i) Rhizoids ii) Haustoria iii) Hyphae iv) Stolons

95. Pick out the odd one : The parts of the alimentary canal are

i) pharynx ii) mouth iii) buccal cavity iv) pancreas

96. Which of the following groups contain only bio-degradable items?

i) Grass, flowers and leaves ii) Grass, wood and plastic iii) Fruit peels, cake and plastic iv) Cake, wood and glass

97. Which of the following constitutes a food chain?

i) Grass, wheat and mango ii) Grass, goat and human iii) Goat, cow and elephant iv) Grass, fish and goat

98. Which of the following are environmental friendly practices?

i) Carrying cloth bags for shopping ii) Switching off light and fans when not in use

iii) Using public transport iv) All the above

99. What is called as 'black gold'?

i) hydrocarbons ii) coal iii) petroleum iv) ether

100. Based on the food chain, pick the odd one out:

plants → grasshopper → frog → tiger → snake

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