Biology

66. Mendel selected pea plant because

(a) The flower structure of pea is such as to allow uncontrolled breeding

(b) Pea flower normally remains open and undergoes self-pollination

(c) It is an annual plant with short life span and give results within 3 months

(d) Small number of seeds are produced per pea plant

67. According to the concept of dominance the following statements are given below. Read the statements carefully and choose the correct answer

(A) Wild allele is a fully functional allele that forms RNA, proteins but not enzymes

(B) The mutant allele generally produces a faulty product or no product at all

(C) The modified functional wild type allele represents the original phenotype

(D) The modified or mutated non-functional allele behave as recessive allele

(a) A, B & C are correct (b) B & D are correct

(c) Only 'D' is correct (d) B, C & D are correct

68. What is the probability of obtaining pure homozygous individuals if a cross is made between AaBbCcDd $\times$ aaBBCCdd individuals ?

(a) $\frac{2}{16}$ (b) $\frac{1}{16}$ (c) $\frac{16}{248}$ (d) $\frac{1}{64}$

69. The minimum height of guava plant is 10 metre. 2 polygene pairs contribute to the height of plant. The maximum height of plant is 34 metres. What will be the height of plant with genotype AaBb ?

(a) 12 metre (b) 22 metre (c) 32 metre (d) 30 metre

70. A plant (*Mirabillis jalapa*) with homozygous red flowers and round seeds (RRWW) was crossed with white flowers and wrinkled seeds to get the F_1 generation. What will be the percentage of plants having red flowers and round seeds obtained in F_2 generation ?

(a) 75% (b) 18.75% (c) 50% (d) 12.5%

71. Choose the correct match

(a) Dominant epistasis – 9 : 3 : 4

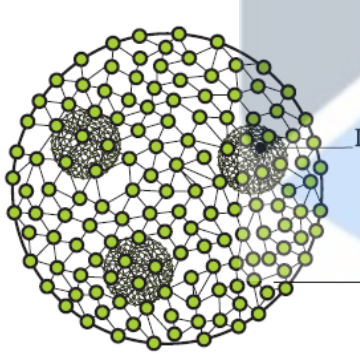
(b) Duplicate genes – 9 : 6 : 1

(c) Dominant – recessive epistasis – 13 : 3

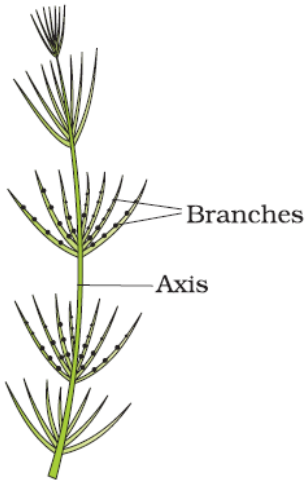
(d) Polymeric gene – 12 : 3 : 1

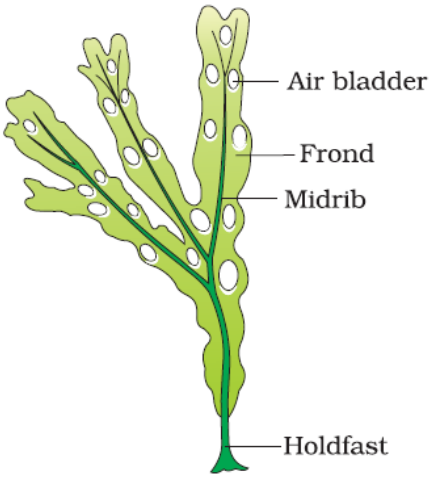
72. Identify the figure and select the correct one:

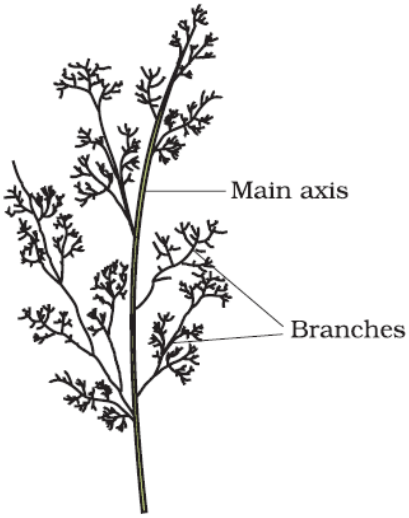
(a)



(b)



(c) 

(d) 

(a) A–*Volvox*, B–*Fucus*, C–*Chara*, D–Polysiphasia

(b) A–*Volvox*, B–*Polysiphonia*, C–*Fucus*, D–*Chara*

(c) A–*Volvox*, B–*Chara*, C–*Dictyota*, D–*Polysiphonia*

(d) A–*Volvox*, B–*Chara*, C–*Fucus*, D–*Polysiphonia*

73. The dominant phase in the life cycle of bryophytes is

(a) Gamophytic plant body

(b) Sporophytic plant body

(c) Both gametophytic and sporophytic plant body

(d) None of these

74. Parental combination in coupling and repulsion can be expressed as

	Coupling	Repulsion
(a)	AABB × aabb	AABB × AAbb
(b)	aaBB × aabb	AAbb × aabb
(c)	AABB × aabb	AAbb × aaBB
(d)	AAbb × aaBB	AaBb × aabb

75. The term X body given by Henking was actually

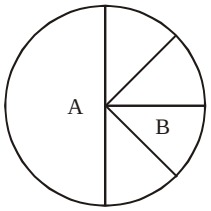
(a) Chromatin body of the nucleus (b) Centrioles

(c) Autosomes (d) X chromosome

76. Turner's syndrome has the following genotype

(a) XXX (b) XXYY (c) XYY (d) XO

77. In the global biodiversity of vertebrates, (A) and (B) in the following figure represent



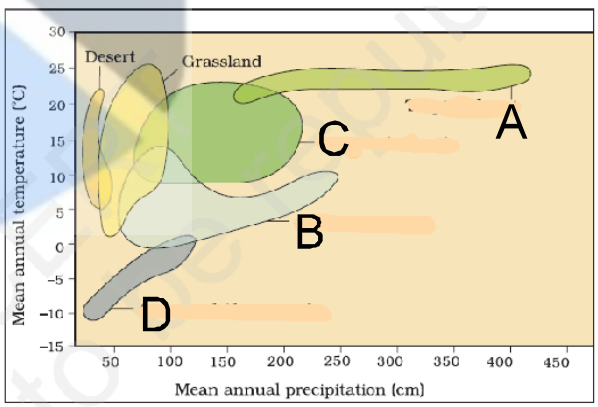
(a) Amphibians and Reptiles

(b) Fishes and Reptiles

(c) Mammals and Birds

(d) Fishes and Birds

78. In the given diagram biome distribution with respect to annual temperature and precipitation. A, B and C represent



(a) A-Coniferous forest, B-Desert, C-Grassland, D-Alpine tundra

(b) A-Desert, B-Grassland, C-Temperate forest, D-Arctic

(c) A-Tropical forest, B-Coniferous forest, C-Temperate forest, D-Alpine tundra

(d) A-Temperature forest, B-Alpine tundra, C-Arctic, D-Grassland

79. Undifferentiated layer present between extoderm and endoderm is called

(a) Mesoglea (b) Mesoderm (c) Epithelium (d) Spongocoel

80. In some, animals body is externally and internally divided into segments, this phenomenon of segmentation is called

(a) Division (b) Amitosis (c) Fragmentation (d) Metamerism

81. Bath sponge commanly called as

(a) Sycon (b) Spongilla (c) Euspongia (d) Pleurobrachia

82. Which of the following statement is incorrect ?

(a) Inspiration can occur if there is a positive pressure in the lungs with respect to atmospheric pressure

(b) An increase in pulmonary volume decreases the intra-pulmonary pressure to less than the atmospheric pressure

(c) Expiration takes place when the intra-pulmonary pressure is higher than the atmospheric pressure

(d) On an average, a healthy human breathes 12-16 times/minute

83. For completion of respiration process, write the given steps in sequential manner

(A) Diffusion of gases (O_2 and CO_2) across alveolar membrane.

(B) Transport of gases by blood.

(C) Utilisation of O_2 by the cells for catabolic reactions and resultant release of CO_2.

(D) Pulmonary ventilation by which atmospheric air is drawn in and CO_2 rich alveolar air is released out.

(E) Diffusion of O_2 and CO_2 between blood and tissues.

(a) D A B E C (b) B D C A E (c) A B E C D (d) C E A D B

84. Identify the correct and incorrect match about respiratory volume and capacities and mark the correct answer

i. Inspiratory capacity (IC) = Tidal Volume + Residual Volume

ii. Vital Capacity (VC) = Tidal Volume (TV) + Inspiratory Reserve Volume (IRV) + Expiratory Reserve Volume (ERV).

iii. Residual Volume (RV) = Vital Capacity (VC) - Inspiratory Reserve Volume (IRV)

iv. Tidal Volume (TV) = Inspiratory Capacity (IC) - Inspiratory Reserve Volume (IRV)

Options:

(a) (i) Incorrect, (ii) Incorrect, (iii) Incorrect, (iv) Correct

(b) (i) Incorrect, (ii) Correct, (iii) Incorrect, (iv) Correct

(c) (i) Correct, (ii) Correct, (iii) Incorrect, (iv) Correct

(d) (i) Correct, (ii) Incorrect, (iii) Correct, (iv) Incorrect

85. The 24 hour (diuranal) rhythm of our body such as the sleep-wake cycle is regulated by the hormone

(a) Melatonin (b) Calcitonin (c) Prolactin (d) Adrenaline

86. Hormones are called chemical signals that stimulate specific target tissues. Their specificity is due to the presence of signal receiving 'receptors' only in the respective target tissues. Where are these receptors present in case of hormones of protein nature ?

(a) Extra cellular matrix (b) Blood

(c) Plasma membrane (d) Nucleus

87. Which one is involved in carbohydrate metabolism ?

(a) Cortisol (b) Paratharmone (c) Somatotrophin (d) Aldosterone

88. How many of the given statements are correct with regard to placenta in embryonic development ?

(A) The chorionic villi and uterine tissue become interdigitated with each other and jointly form placenta.

(B) Placenta is a structural and functional unit between developing embryo (foetus) and maternal body.

(C) The placenta facilitates the supply of oxygen and nutrients to the embryo and also removal of carbon dioxide and excretory/waste materials produced by the embryo.

(a) None (b) One (c) Two (d) Three

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

(a) One X and one Y chromosome (b) Two X chromosomes

(c) Only one Y chromosome (d) Only one X chromosome

90. Which one can be considered as most advanced type of IUD ?

(a) Lippes loop (b) CuT (c) Multiload 375 (d) LNG-20