

Biology: Part 1- Section A ^{5.}

1.

Photosynthesis in C₄ plants is relatively less limited by atmospheric CO₂ levels because

1. The primary fixation of CO₂ is mediated via PEP carboxylase
2. Effective pumping of CO₂ into bundle sheath cells
3. Four carbon acids are the primary initial CO₂ fixation products.
4. Rubisco in C₄ plants has higher affinity for CO₂

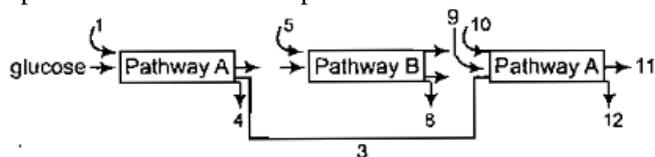
2.

The chemiosmotic coupling hypothesis of oxidative phosphorylation proposes that adenosine triphosphate (ATP) is formed because

1. there is a change in the permeability of the inner mitochondrial membrane toward adenosine diphosphate (ADP)
2. high bonds are formed in mitochondrial proteins
3. ADP is pumped out of the matrix into the intermembrane space
4. a proton gradient forms across the inner membrane

3.

The three boxes in this diagram represent the three major biosynthetic pathways in aerobic respiration. Arrow represent net reactants or products



Arrows numbered 4, 8, 12 can all be

1. NADH
2. ATP
3. H₂O
4. FAD⁺ or FADH₂

4.

The energy-releasing metabolic process in which substrate is oxidised without an external electron acceptor is called

1. glycolysis
2. fermentation
3. aerobic respiration
4. photorespiration

How many ATP molecules could maximally be generated from one molecule of glucose, if the complete oxidation of one mole of glucose to CO₂ and H₂O yields 686 kcal and the useful chemical energy available in the high energy phosphate bond of one mole of ATP is 12 Kcal?

1. Two
2. Thirty
3. Fifty seven
4. One

6.

You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?

1. IAA and gibberellin
2. Auxin and cytokinin
3. Auxin and abscisic acid
4. Glbberellin & abscisic acid

7.

Which one of the following growth regulators is known as "stress hormone" ?

1. abscisic acid
2. Ethylene
3. GA₃
4. Indole acetic acid

8.

The logistic population growth is expressed by the equation

1. $\frac{dN}{dt} = rN \left(\frac{N-K}{N} \right)$
2. $\frac{dN}{dt} = Nr \left(\frac{K-N}{K} \right)$
3. $\frac{dN}{dt} = rN \left(\frac{K-N}{K} \right)$
4. $\frac{dN}{dt} = rN$

9.

Gause's principle of competitive exclusion states that

1. more abundant species will exclude the less abundant species through competition.
2. competition for the same resources excludes species having different food preferences.
3. no two species can occupy the same niche indefinitely for the same limiting resources.
4. larger organisms exclude smaller ones through competition.

10.

Sacred groves are specially useful in :

1. Generating environmental awareness
2. Preventing soil erosion
3. Year-round flow of water in rivers
4. Conserving rare and threatened species

11.

Which of the following is the most important cause of animals and plants being driven to extinction?

1. Co - extinctions
2. Over - exploitation
3. Alien species invasion
4. Habitat loss and fragmentation

12.

Keeping in view the fluid mosaic model for the structure of cell membrane, which one of the following statement is correct with respect to movements of lipids and proteins from one lipid monolayer to the other (described as flip flop movement) ?

1. While proteins can flip-flop, lipids cannot
2. Neither lipids nor proteins can flip-flop
3. Both lipids and proteins can flip-flop
4. While lipids can rarely flip-flop, proteins cannot.

13.

Important site for formation of glycoproteins and glycolipids in

1. Vacuole
2. Golgi apparatus
3. Plastid
4. Lysosome

14.

Which structures perform the function of mitochondria in bacteria?

1. Nucleoid
2. Ribosomes
3. Cell wall
4. Mesosomes

15.

Which one of the following diagrams represents the placentation in Dianthus?



1.



2.



3.



4.

16.

Among bitter gourd, mustard, brinjal, pumpkin, china rose, lupin, cucumber, sunhemp, gram, guava, bean, chilli, plum, Petunia, tomato, rose, Withania, potato, onion, Aloe and tulip how many plants have hypogynous flower ?

1. Ten
2. Fifteen
3. Eighteen
4. Six

17. Which statement is wrong for viruses
1. All are parasites
 2. All of them have helical symmetry
 3. They have ability of synthesise nucleic acids and proteins
 4. Antibiotics have no effect on them

18. Which one of the following matches is correct?

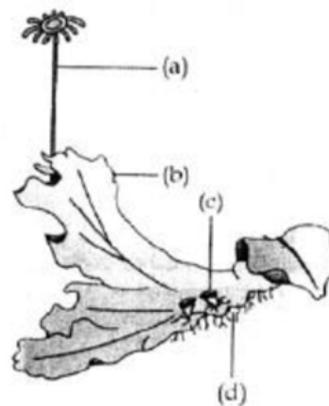
- | | | | |
|----|--------------|-----------------------------|----------------|
| 1. | Alternaria | Sexual reproduction absent | Deuteromycetes |
| 2. | Mucor | Reproduction by Conjugation | Ascomycetes |
| 3. | Agaricus | Parasitic fungus | Basidiomycetes |
| 4. | Phytophthora | Aseptate mycelium | Basidiomycetes |

19. Chrysophytes, Euglenoids, Dinoflagellates and slime moulds are included in the kingdom:

1. Animalia
2. Monera
3. Protista
4. Fungi

20. Selaginella and Salvinia are considered to represent a significant step toward evolution of seed habit because:
1. Female gametophyte is free and gets dispersed like seeds
 2. Female gametophyte lacks archegonia.
 3. Megaspores possess endosperm and embryo surrounded by seed coat.
 4. Embryo develops in female gametophyte which is retained on parent sporophyte.

21. Examine the figure given below and select the right option giving all the four parts (a, b, c and d) correctly identified.



	(A)	(B)	(C)	(D)
1.	Archegoniophore	Female' thallus	Gemmacup	Rhizoids
2.	Archegoniophore	Female' thallus	Bud	Foot
3.	Seta	Sporophyte	Protonema	Rhizoids
4.	Antheridiophore	Male thallus	Globule	Roots

22. Identify the meiotic stage in which the homologous chromosomes separate while the sister chromatids remains associated at their centromeres
1. Anaphase I
 2. Anaphase II
 3. Metaphase I
 4. Metaphase II

23.

A somatic cell that has just completed the S phase of its cell cycle, as compared to gamete of the same species, has

1. Twice the number of chromosomes and twice the amount of DNA
2. Same number of chromosomes but twice the amount of DNA
3. Twice the number of chromosomes and four times the amount of DNA
4. Four times the number of chromosomes and twice the amount of DNA

24.

Measuring biochemical oxygen demand (BOD) is a method used for

1. Measuring the activity of *Saccharomyces cerevisiae* in producing curd on a commercial scale.
2. Working out the efficiency of RBCs about their capacity to carry oxygen.
3. Estimating the amount of organic matter in sewage water.
4. Working out the efficiency of oil--driven automobile engines.

25.

Match the following list of microbes and their importance.

- | | | | |
|-----|------------------------------------|-------|---|
| (a) | <i>Saccharomyces cerevisiae</i> | (i) | Production of immunosuppressive drug |
| (b) | <i>Moascus purpureus</i> | (ii) | Ripening of Swiss cheese |
| (c) | <i>Trichoderma polysporum</i> | (iii) | Commercial production of ethanol |
| (d) | <i>Propionibacterium shermanii</i> | (iv) | Production of blood cholesterol lowering agents |

- (a) (b) (c) (d)
1. (iii) (i) (iv) (ii)
 2. (iii) (iv) (i) (ii)
 3. (iv) (iii) (ii) (i)
 4. (iv) (ii) (i) (iii)

26.

Linkage map of X-chromosome of fruitfly has 66 map units with yellow body gene(y) at one end & bobbed hair (b) at the other. The recombination frequency between y and b gene would be

1. 66%
2. > 50%
3. 50%
4. 100%

27.

A woman with normal vision but with colorblind father marries a colorblind man. The fourth child of the couple is a boy. This boy

1. May or may not be colorblind
2. Must be colorblind
3. Must have normal vision
4. Will be partially colorblind due to being heterozygous

28. A disease caused by an autosomal primary non-disjunction is :
1. Down's Syndrome
 2. Klinefelter's Syndrome
 3. Turner's Syndrome
 4. Sickle Cell Anemia
29. Wind pollinated flowers are
1. Small, producing large number of dry pollen grains
 2. Large producing abundant nectar and pollen
 3. Small, producing nectar and dry pollen
 4. Small, brightly coloured, producing large number of pollen grains
30. Which one of the following statements is correct?
1. Sporogenous tissue is haploid
 2. Endothecium produces the microspores
 3. Tapetum nourishes the developing pollen
 4. Hard outer layer of pollen is called intine
31. The wheat grain has an embryo with one, large, shield-shaped cotyledon known as:
1. Coleorrhiza
 2. Scutellum
 3. Coleoptile
 4. Epiblast
32. A gene encoding for polypeptide of 50 amino acids get mutated at 25 codon UAU becoming UAA. The result would be
1. Polypeptide of 24 amino acid
 2. Two polypeptides one with 24 amino acids and second with 25 amino acids
 3. A polypeptide with 49 amino acid
 4. A polypeptide of 25 amino acids
33. Select the two correct statements out of the four (a-d) given below about lac operon.
- (a) Glucose or galactose may bind with the repressor and inactivate it
 - (b) In the absence of lactose the repressor binds with the operator region
 - (c) The z-gene codes for permease
 - (d) This was elucidated by Francois Jacob and Jacques Monod
- The correct statements are
1. (a) and (c)
 2. (b) and (d)
 3. (a) and (b)
 4. (b) and (c)
34. What is it that forms the basis of DNA Fingerprinting?
1. The relative proportions of purines and pyrimidines in DNA
 2. The relative difference in the DNA occurrence in blood, skin and saliva
 3. The relative amount of DNA in the ridges and grooves of the fingerprints.
 4. Satellite DNA occurring as highly repeated short DNA segments
35. During DNA replication, Okazaki fragments are used to elongate
1. The leading strand towards replication fork.
 2. The lagging strand towards replication fork.
 3. The leading strand away from replication fork
 4. The lagging strand away from the replication fork
36. The rupture and fractionation do not usually occur in the water column in vessel/tracheids during the ascent of sap because of
1. lignified thick walls
 2. cohesion and adhesion
 3. weak gravitational pull
 4. transpiration pull

Biology: Part 1- Section B

37.

Water vapor comes out from the plant leaf through the stomatal opening. Through the same stomatal opening carbon dioxide diffuses into the plant during photosynthesis. Reason out the above statements using one of the following options

1. Both processes cannot happen simultaneously
2. Both processes can happen together because the diffusion coefficient of water and CO₂ is different
3. The above processes happen only during night time
4. One process occurs during day time, and the other at night

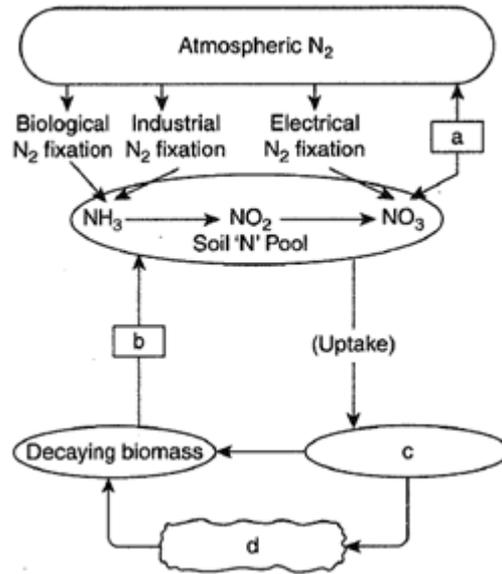
38.

A plant requires magnesium for

1. holding cells together
2. protein synthesis
3. chlorophyll synthesis
4. cell wall development

39.

Study the cycle shown in below and select the option which gives correct words for all the four blanks a, b, c and d:



- | | (a) | (b) | (c) | (d) |
|----|-----------------|-----------------|---------|---------|
| 1. | Denitrification | Ammonification | Plants | Animals |
| 2. | Nitrification | Denitrification | Animals | Plants |
| 3. | Denitrification | Nitrification | Plants | Animals |
| 4. | Nitrification | Ammonification | Animals | Plants |

40.

Treatment of seed at low temperature under moist conditions to break its dormancy is called ?

1. scarification
2. vernalization
3. chelation
4. stratification

41. One set of a plant was grown at 12 hours a day and 12 hours night period cycles and it flowered while in the other set night phase was interrupted by a flash of light and it did not produce a flower. Under which one of the following categories will you place this plant?
1. Darkness neutral
 2. Day neutral
 3. Short day
 4. Long day
42. In barley stem vascular bundles are
1. closed and radial
 2. open and scattered
 3. closed and scattered
 4. open and in a ring
43. The cork cambium, cork and secondary cortex are collectively called
1. Phellogen'
 2. Phelloqen '.
 3. Periderm
 4. Phellem
44. Stems modified into flat green organs performing the functions of leaves are known as :
1. Scales
 2. Cladodes
 3. Phyllodes
 4. Phylloclades
45. The floral formula $\oplus \overset{\text{♂}}{\text{K}}_{2+2} \text{C}_4 \text{A}_{2+4} \text{G}_{(2)}$ represents
1. Solanum nigrum
 2. Hibiscus rosa-sinensis
 3. Citrus aurantium
 4. Brassica campestris
46. Monoecious plant of Chara shows occurrence of
1. Upper oogonium and lower antheridium on the same plant
 2. Antheridiophore and archegoniophore on the same plant
 3. Stamen and carpel on the same plant
 4. Upper antheridium and lower oogonium on the same plant
47. In Maize, hybrid vigour is produced by
1. Crossing two inbred lines
 2. Inducing mutations
 3. Bombarding the protoplast with DNA
 4. Harvesting seeds from most productive plants
48. In order to obtain virus-free plants through tissue culture the best method is
1. protoplast culture
 2. embryo rescue
 3. anther culture
 4. meristem culture
49. Which of the following pairs is correctly matched?
- | | Joint | Location |
|---|---------------------|---|
| 1 | Fibrous joint | Between Phalanges |
| 2 | Cartilaginous joint | Skull bones |
| 3 | Gliding joint | Between zygapophysial of the successive vertebrae |
| 4 | Hinge joint | Between vertebrae |

50. Three of the following pairs of the human skeletal parts are correctly matched with their respective inclusive skeletal category and one pair is not matched. Identify the non-matching pair.

	Pairs of skeletal parts	Category
1	Malleus and stapes	Ear ossicles
2	Sternum and ribs	Axial skeleton
3	Clavicle and glenoid cavity	Pelvic girdle
4	Humerus and ulna	Appendicular skeleton

53. A person is having problems with calcium and phosphorus metabolism in his body. Which one of the following glands may not be functioning properly?

1. Parathyroid
2. Parotid
3. Pancreas
4. Thyroid

54. Person with blood group AB is considered as universal recipient because he has

1. Both A and B antigens on RBC but no antibodies in the plasma
2. Both A and B antibodies in the plasma
3. No antigen on RBC and antibody in the plasma
4. Both A and B antigens in the plasma but no antibodies.

Biology: Part 2- Section A

51. Identify the hormone with its correct matching of source and function.

1. Oxytocin-posterior pituitary, growth and maintenance of mammary glands
2. Melatonin-pineal gland, regulates the normal rhythm of sleep-wake cycle
3. Progesterone-corporus luteum, stimulation of growth and activities of female secondary sex organs
4. Atrial natriuretic factor-ventricular wall increases the blood pressure

52. Which one of the following pairs of hormones are the examples of those that can easily pass through the cell membrane of the target cell and bind to a receptor inside it (mostly in the nucleus)?

1. Insulin and glucagon
2. Thyroxin and insulin
3. Somatostatin and oxytocin
4. Cortisol and testosterone

55. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because

1. there is a negative pressure in the lungs
2. there is a negative intrapleural pressure pulling at the lung walls
3. there is a positive intrapleural pressure
4. pressure in the lungs is higher than the atmospheric pressure

56. Reduction in pH of blood will

1. reduce the blood supply to the brain
2. decrease the affinity of hemoglobin with oxygen
3. release bicarbonate ions by the liver
4. reduce the rate of heart beat

57. Which one of the following correctly explains the function of a specific part of a human nephron?
1. Henle's loop - most reabsorption of the major substances from the glomerular filtrate
 2. Distal convoluted tubule - reabsorption of ions into the surrounding blood capillaries
 3. Afferent arteriole - carries the blood away from the glomerulus towards the renal vein
 4. Podocytes- create minute spaces (slit pores) for the filtration of blood into the Bowman's capsule
58. When a neuron is in a resting state, i.e., not conducting any impulse, the axonal membrane is
1. equally permeable to both Na^+ and K^+ ions
 2. impermeable to both Na^+ and K^+ ions
 3. comparatively more permeable to K^+ ions and nearly impermeable to Na^+ ions
 4. comparatively more permeable to Na^+ ions and nearly impermeable to K^+ ions
59. Which of the following depicts the correct pathway of transport of sperms?
1. Rete testis → Efferent ductules → Epididymis → vas deferens
 2. Rete testis → Epididymis → Efferent ductules → vas deference
 3. Rete testis → Vas deference → Efferent ductules → Epididymis
 4. Efferent ductules → Rete testis → Vas deference → Epididymis
60. Select the incorrect statement
1. LH and FSH triggers ovulation in ovary
 2. LH and FSH decrease gradually during the follicular phase
 3. LH triggers secretion of androgens from the Leydig cells
 4. FSH stimulates the Sertoli cells which help in spermiogenesis
61. Menstrual flow occurs due to lack of
1. progesterone
 2. FSH
 3. oxytocin
 4. vasopressin
62. The function of copper ions in copper releasing IUD's is
1. they suppress sperm motility and fertilising capacity of sperms
 2. they inhibit gametogenesis
 3. they make uterus unsuitable for implantation
 4. they inhibit ovulation
63. Sliding filament theory can be best explained as
1. when myofilaments slide past each other actin filaments shorten while myosin filaments do not shorten
 2. actin and myosin filaments shorten and slide past each other
 3. actin and myosin filaments do not shorten but rather slide past each other
 4. when myofilaments slide past each other myosin filaments shorten while actin filaments do not shorten
64. Skeletal muscles appear striated due to presence of two characteristic proteins in alternating dark and light bands. Which of the following is a correct match of the protein with its light refractive property and colour?
- | Protein | Colour | Property |
|-----------|--------|-------------|
| 1. Myosin | Light | Anisotropic |
| 2. Actin | Dark | Anisotropic |
| 3. Myosin | Dark | Isotropic |
| 4. Actin | Light | Isotropic |

65. Which one of the following statements is incorrect?

(1) In competitive inhibition, the inhibitor molecule is not chemically changed by the enzyme.

(2) The competitive inhibitor does not affect the rate of breakdown of the enzyme-substrate complex.

(3) The presence of the competitive inhibitor decreases the K_m of the enzyme for the substrate.

(4) A competitive inhibitor reacts reversibly with /the enzyme to form an enzyme-inhibitor complex.

66. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins?

(1) Ester bonds

(2) Hydrogen bonds

(3) Electrostatic interaction

(4) Hydrophobic interaction

67. Cellulose, the most important constituent of plant cell wall is made of

(1) Unbranched chain of glucose molecules linked by α 1, 4 glycosidic bond

(2) Branched chain of glucose molecules linked by β 1, 4 glycosidic bond in straight chain and α 1, 6 glycosidic bond at the site of branching

(3) Unbranched chain of glucose molecules linked by β 1, 4 glycosidic bond

(4) Branched chain of glucose molecules linked by α 1, 6 glycosidic bond at the site of branching

68. Nomenclature is governed by certain universal rules. Which one of the following is contrary to the rules of nomenclature.

1. When written by hand, the names are to be underlined

2. Biological names can be written in any language

3. The first word in a biological name represents the genus name, and the second is a specific epithet

4. The names are written in Latin and are italicized

69. Body having meshwork of cell, internal cavities lined with food filtering flagellated cells and indirect development are the characteristics of phylum –

1. Porifera
2. Mollusca
3. Protozoa
4. Coelenterate

70. Which one of the following groups of animals is correctly matched with its one characteristic feature without even a single exception ?

1. Reptilia : possess 3 - chambered heart with one incompletely divided ventricle
2. Chordata : possess a mouth provided with an upper and lower jaw
3. Chondrichthyes : possess cartilaginous endoskeleton
4. Mammalia : give birth to young one.

71. Match the name of the animal (column I), with one characteristics (column II), and the phylum/class (column III) to which it belongs

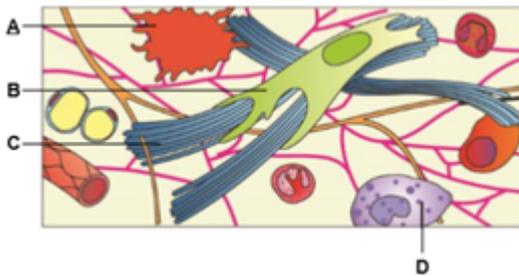
	Column I	Column II	Column III
1.	Ichthyophis	terrestrial	Reptilia
2.	Limulus	body covered by chitinous exoskeleton	Pisces
3.	Adamsia	radially symmetrical	Porifera
4.	Petromyzon	ectoparasite	Cyclostomata

72. The cells lining the blood vessels belong to the category of

1. Smooth muscle tissue
2. Squamous epithelium
3. Columnar epithelium
4. Connective tissue

74. Which one of the following option gives the correct matching of a disease with its causative organism and mode of infection.

73. Given below is the diagrammatic sketch of a certain type of connective tissue. Identify the parts labelled A, B, C and D, and select the right option about them.



Disease	Gausative Organisms	Mode of Infection
1. Typhoid	Salmonella typhi	With inspired air
2. Pneumonia	Streptococcus pneumoniae	Droplet infection
3. Elephantiasis	Wuchereria bancrofti	infected water and food
4. Malaria	Plasmodium vivax	Bite of male anopheles mosquito

	Part A	Part B	Part C	Part D
1	Macrophage	Fibroblast	Collagen fibres	Mast cell
2	Mast cell	Macrophage	Fibroblast	Collagen fibres
3	Macrophage	Collagen fibres	Fibroblast	Mast cell
4	Mast cell	Collagen fibres	Fibroblast	Macrophage

75. Transplantation of tissues / organs fails often due to non-acceptance by the patient's body. Which type of immune-response is responsible for such rejection

1. Autoimmune response
2. Cell- mediated immune response
3. Hormonal immune response
4. Physiological immune response

76.

What is true about Bt toxin

1. The concerned Bacillus has antitoxins.
2. The inactive protoxin gets converted into active form in the insect gut
3. BT protein exists as active toxin in the Bacillus.
4. The activated toxin enters the ovaries of the pest to sterilise it and thus prevent its multiplication

77.

Silencing of mRNA has been used in producing transgenic plants resistant to:

1. Bollworms
2. Nematodes
3. White rusts
4. Bacterial blights

78.

Production of human protein in bacterial genetic engineering is possible because

1. Human chromosome replicate bacterial cell
2. Mechanism of gene regulation is identical in humans and bacteria
3. Bacterial cell can undertake RNA splicing
4. Genetic code is universal

79.

Gel electrophoresis is used for

1. Isolation of DNA molecules.
2. Cutting of DNA into fragments.
3. Separation of DNA fragments according to their size.
4. Construction of recombinant DNA by joining with cloning vector.

80.

Which of the following is not a component of downstream processing?

1. Purification
2. Preservation
3. Expression
4. Separation

81.

The contraceptive 'SAHELI'

- (1) Is an IUD
- (2) Increases the concentration of estrogen and prevents ovulation in females.
- (3) Blocks estrogen receptors in the uterus, preventing eggs from getting implanted.
- (4) Is a post-coital contraceptive.

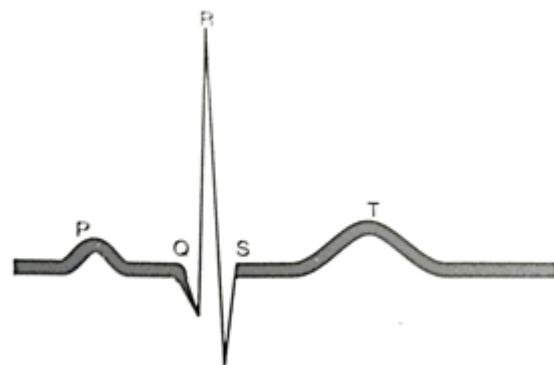
82.

The cardiac pacemaker in a patient fails to function normally. The doctors find that an artificial pacemaker is to be grafted in him. It is likely that it will be grafted at the site of

- (1) Purkinje system
- (2) Sinoatrial node
- (3) Atrioventricular node
- (4) Atrioventricular bundle

83.

Given below is the ECG of a normal human. Which one of its components is correctly interpreted below?



- (1) Peak P- Initiation of left atrial contraction only
- (2) Complex QRS-One complete pulse
- (3) Peak T-Initiation of total cardiac contraction
- (4) Peak P and Peak R together - systolic and diastolic blood pressures.

Biology: Part 2- Section B

84.

Which of the following structures or regions is incorrectly paired with its function?

1. Hypothalamus- Production of releasing hormones and regulation of temperatures, hunger and thirst.
2. Limbic system-Consists of fibre tracts that interconnect different regions of brain;controls movement.
3. Medulla oblongata-Controls respiration and cardiovascular reflexes.
4. Corpus callosum-Band of fibres connecting left and right cerebral hemispheres.

85.

Match the items given in column I with those in column II and select the correct option given below:

Column I	Column II
(a) Glycosuria	(i) Accumulation of uric acid in joints
(b) Gout	(ii) Mass of crystallised salts within the kidney
(c) Renal calculi	(iii) Inflammation in glomeruli
(d) Glomerulonephritis	(iv) Presence of glucose in urine

Codes:

- (a) (b) (c) (d)
1. (ii) (iii) (i) (iv)
 2. (i) (ii) (ii) (iv)
 3. (iii) (ii) (iv) (i)
 4. (iv) (i) (ii) (iii)

86.

Photosensitive compound in human eye is made up of

1. opsin and Retinal
2. opsin and Retinol
3. transducin and Retinene
4. guanosine and Retinol

87.

When breast feeding is replaced by less nutritive food low in proteins and calories; the infants below the age of one year are likely to suffer from.

1. marasmus
2. rickets
3. kwashiorkor
4. pellagra

88.

Secondary productivity is rate of formation of new organic matter by:

1. Parasite
2. Consumer
3. Decomposer
4. Producer

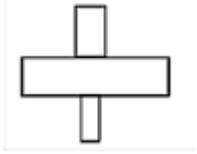
89.

The primary producers of the deep-sea hydrothermal vent ecosystem are

1. coral reefs
2. green algae
3. chemosynthetic bacteria
4. blue-green-algae

90.

The accompanying figure represents an ecological pyramid. It is



1. Pyramid of numbers in grassland
2. Pyramid of biomass in fallow land
3. Pyramid of biomass in lake
4. Energy pyramid in a spring

91.

Montreal Protocol aims at

1. Control of CO₂ emission
2. Reduction of ozone depleting substances
3. Biodiversity conservation
4. Control of water pollution

92.

A scrubber in the exhaust of a chemical industrial plant removes:

1. Gases like sulphur dioxide
2. Particulate matter of the size 5 micrometer or above
3. Gases like ozone and methane
4. Particulate matter of the size 2.5 micrometer or less

93.

Match the items given in Column I with those in Column II and select the correct option given below:

- | | |
|----------------------|--------------------------|
| A. Eutrophication | i. UV-B radiation |
| B. Sanitary landfill | ii. Deforestation |
| C. Snow blindness | iii. Nutrient enrichment |
| D. Jhum cultivation | iv. Waste disposal |

A B C D

1. ii i iii iv
2. i ii iv iii
3. iii iv i ii
4. i iii iv ii

94.

Which of the following features is not present in *Periplaneta americana*?

1. Metamerically segmented body
2. Schizocoelom as body cavity
3. Indeterminate and radial cleavage during embryonic development
4. Exoskeleton composed of N-acetylglucosamine

95.

According to Oparin, which one of the following was not present in the primitive atmosphere of the earth?

1. Oxygen
2. Hydrogen
3. Water vapour
4. Methane

96.

When two species of different genealogy come to resemble each other as a result of adaptation, the phenomenon is termed

1. Convergent evolution
2. Divergent evolution
3. Microevolution
4. Co-evolution

97.

Evolution of different species in a given area starting from a point and spreading to other geographical areas is known as

1. Migration
2. Divergent evolution
3. Adaptive radiation
4. Natural selection

98.

Which of the following gastric cells indirectly help in erythropoiesis?

1. Goblet cells
2. Mucous cells
3. Chief cells
4. Parietal cells

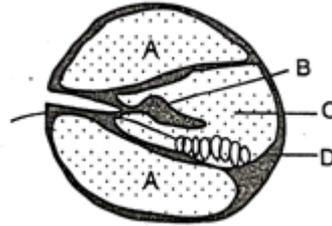
99.

Which of the following terms describe human dentition?

1. Pleurodont, Monophyodont, Homodont
2. Thecodont, Diphyodont, Heterodont
3. Thecodont, Diphyodont, Homodont
4. Pleurodont, Diphyodont, Heterodont

100.

Given below is a diagrammatic cross-section of a single loop of human cochlea.



Which one of the following options correctly represents the names of three different parts?

1. A:Perilymph, B:Tectorial membrane, C:Endolymph
2. B:Tectorial membrane, C:Perilymph, D:Secretory cells
3. C:Endolymph, D:Sensory hair cells, A:Serum
4. D:Sensory hair cells, A:Endolymph, B:Tectorial membrane

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