BIOLOGY

BOOKS - SARAS PUBLICATION

MODEL QUESTION PAPER 6

Exercise

1. Consider the following statements and choose the correct option. I. The ovule is attached to the placenta by of a stalk called

filament. II.The ovule fuses with the stalk in the region called hilum . III.Two protective envelopes of ovule are called integuments. IV. The small opening in the tip of ovule is called germ pores.Of the above statements, are correct.

A. I and IV are correct

B. I and III are correct

C. II and IV are correc

D. II and III are correct

Answer:

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2. Who proved that blends of polyblend (plastic waste) and bitumen, when used to lay roads, enhanced the bitumen's water repellant properties and helped to increase road life ?

A. Amrita Devi

B. Ramdeo Misra

C. WH Pearsall

D. Ahmed Khan

Answer:

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3. Match the following.

Column I	Column II
A. Earthworm	1. Catabolism
B. Bacterial and fungal enzymes	2. Break down detritus into smaller particles

C. Accumulation of dark coloured amorphous substance	3. Detritivores	
D. Fragmentation	4. Humus	

A. A)3- B)- 2 C)- 4 D)-1

B. A)-3 B)-1 C)-4 D)-2

C. A)-2 B)-1 C)-4 D)-3

D. A)-2 B)-3 C)-4 D)-1

Answer:

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4. The first trophic level in an ecosystem consists of:

A. Primary producers

B. Primary consumers

C. secondaiy producers

D. secondary consumers

Answer:

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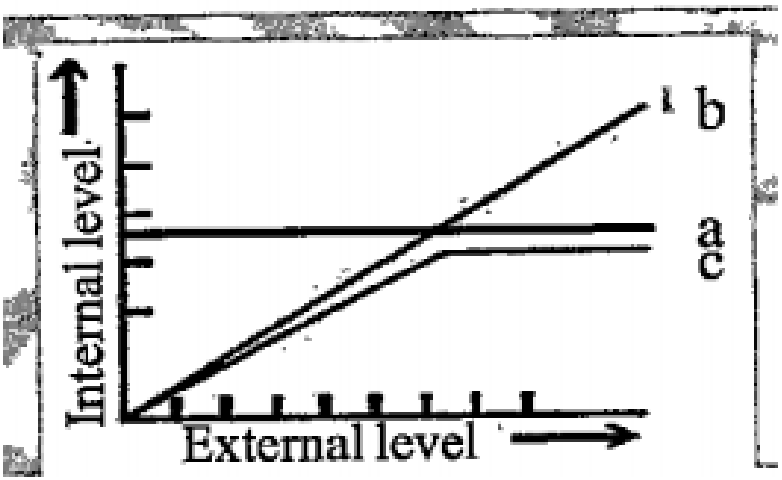
5. The figure given is a diagrammatic representation of response of organisms to abiotic factors. What do a , band c represent respectively?



A. A-Conformers, B-Regulators, C-Partial regulators

B. A- Regulators, B-Partial regulators, C-Conformers

C. A-Partial regulators, BRegulators, C-Conformers

D. A-Partial regulators, BConformers, C-Regulators

Answer:

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6. Select the correct statement:

A. Phosphorus cycle is an example of gaseous nutrient cycle

B. The pyramid of biomass in sea is generally inverted.

C. By the process of humification, soluble inorganic nutrients go down into the soil horizon.

D. A given organism may not occupy more than one trophic level simultaneously.

Answer:

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7. The rate of biomass production and the rate of production of organic, matter during photosynthesis are called respectively:

A. total productivity, primary production

B. gross primary productivity, gross secondary productivity

C. net primary productivity,secondary productivity

D. Productivity, gross primary productivity

Answer:

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8. Allen's rule applies to:

A. tribes living in high altitudes

B. mammals from colder climates

C. fish living in Antarctic waters

D. desert lizards

Answer:

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9. Pick out the correct option from (a) to (e).I. Primary succession begins in areas where natural communities have been destroyed.II.

Hydrarch succession takes place in water.III. The climax communityis the community that is in near equilibrium with the immediate environment.IV. Newly cooled lava secondary succession.

A. I and (II) are correct, (III) and IV) are incorrect

B. II and (III) are correct. (I) and IV) are incorrect.

C. I and (IV) are correct, (II) and- III) are incorrect.

D. II only is correct, (I), (III) and (V) are incorrect.

Answer:

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10. Select the wrong statement.

A. The presence of chromogenic substrate gives bluecolour colonies, if the plasmid in the bacteria does not have an insert

B. Retroviruses in animals have the ability to transform normal cells into cancerous cells.

C. In microinjection, cells are bombarded with high velocity microparticles of gold or tungsten coated with DNA.

D. Since, DNA is a hydrophilic molecule it cannot pass through cell membranes.

Answer:

11. Which of the following organisms breeds only once in lifetime?

A. Bamboo

B. Oysters

C. Pelagic fishes

D. Birds

Answer:

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12. Select the wrong statement.

A. Human insulin is being commercially produced from a transgenic species of Escherichia coli.

B. The genetically modified Bacillus thuringiensis is used as biopesticide on the commercial scale’

C. Human protein, alpha-lantitrypsin is used to treat emphysema.

D. Btoxin genes Cry 1 Ac control the corn borer.

Answer:

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13. Choose the correct statement.

A. Members of phycomycetes are facultative parasites on plants.

B. Fusion of protoplasms between two motile or non-motile gametes is called plasmogamy.

C. Kingdom-Plantae includes all eukaryotic chlorophyll containing organisms and non-chlorophyll organisms called plants

D. Trichoderma belongs to Basidiomycetes.

Answer:

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14. Which of the following characters belongs to the Kingdom-Monera?

A. Eukaryotic

B. Heterotrophic

C. Multicellular

D. Presence of cell walls made of cellulose

Answer:

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15. Which one of the following is used extensively in biochemical and genetic work?

A. Neurospora

B. Aspergillus

C. Claviceps

D. Penicillium

Answer:

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16. Match column I with column II and choose right option.

Column I	Column II
A. Claviceps	1. Deuteromycetes
B. Puccinia	2. Ascomycetes
C. Trichoderma	3 Basidomycetes

A. A)-3 B)-1 C)-2

B. A)-2 B)-3 C)-1

C. A)-1 B)-3 C)-2

D. A)-3 B)-2 C)-1

Answer:

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17. Which one of the following is a very good pollution indicator?

A. Fungi

B. Slime mould

C. Lichens

D. Euglenoids

Answer:

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18. In one plant, underground stems are modified to store food and in another plant, the stem tendrils develop from axillary buds to help plants climb. They are:

A. ginger, cucumber

B. carrot, jasmine

C. sweet Potato, Bougainvillea

D. Opuntia, Eichhornia

Answer:

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19. Consider the following statements:-I. In leguminous plants, leaf base becomes swollen, called Pulvinus.II. The fleshy leaves of onion and garlic store food.III. The buds in Australian acacia tree become green and synthesise food.IV. In Alstonia, leaves show alternate phyllotaxy. Of the above statements:

A. ll and IV are correct

B. I and III are correct

C. I and II are correct

D. I and IV are correct

Answer:

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20. Pick out the statement that does not apply to bryophytes:

A. Includes the ferns and horse tails.

B. Thallus is a gametophyte.

C. Sporophyte shows root,septa and capsule

D. Gemmae help in reproduction.

Answer:

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21. Which one of the following is considered important in the development of seed habit?

A. Homospory

B. Heterospory

C. Dependent sporophyte

D. Free-living gametophyte

Answer:

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22. Which of the Mowing is a char acteristic feature of Gymnosperms?

A. The gymnosperms are homosporous

B. The male and female gametophytes do not have independent free living existence

C. The sporophyte is dependent on the gametophyte

D. The ovules are enclosed by the ovary

Answer:

23. Consider the following statements with respect to angiosperms. I. The male sex organ in a flower is the stamen.II. The anthers following mitosis produce pollen grains.III. In an embryo sac, the Primary Endosperm Nucleus (PEN) is diploid. IV. After double fertilisation the ovules develop into seeds and ovaries develop into fruit. Of the above statements.

A. III and IV are correct

B. I and II are correct

C. I and III are correct

D. I and IV are correct

Answer:

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24. Select the wrong statement:

A. Indigofera is used as a dye.

B. Ashwagandha is a medicinal plant.

C. Seeds are non-endospermous in Fabaceae.

D. Ovary bicarpellary with ovules on axile - placentation in Liliaceae

Answer:

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25. Which of these is an example for a zygomorphic flower with diadelphous stamen and marginal placentation:

A. Pea

B. Lemon

C. Brinjal

D. Cucumber

Answer:

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26. Select the wrongly matched pair.

A. Fibre - Sunn hemp

B. Spices - Belladonna

C. Edible oil - Ground nut

D. Fodder - Trifolium

Answer:

27. Match the modification in column I with the part modified in column II and choose the right option.

Column I	Column II
A. Pneumatophores in Rhizophora	1. Axillary buds
B. Tendrils in pea	2. Roots
C. Thorns in Citrus	3. Leaves

A. A)-2 B)-1 C)-3

B. A)-3 B)-1 C)-2

C. A)-3 B)-2 C)-1

D. A)-2 B)-3 C)-1

Answer:

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28. Select the characters which are not applicable to the anatomy of dicot roots?I. Conjunctive tissue present.II. Presence of protein compounds in the Casparian strips. III. Polyarch xylem bundles.IV. Presence of pericycle.

A. I and II

B. II and IV

C. III and IV

D. I and IV

Answer:

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29. Lenticels are involved in:

A. photosynthesis

B. food transport

C. conduction of water

D. transpiration

Answer:

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30. Pick out the wrong statement.

A. Gymnosperms lack vessels in their xylem

.

B. The cell wall of parenchyma is made up

of pectin

C. The first formed primary xylem elements are called protoxylem.

D. Gymnosperms have albuminous cells and have cells in their phloem.

Answer:

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31. 1. They help in respiration.II. They help in cell wall formation.III. They help in DNA replication.IV. They increase surface area of

plasma membrane.Which of the following prokaryotic structures has all the above roles?

A. Chromosome

B. Ribosome

C. Mesosome

D. Lysosome

Answer:

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32. Which of the following cell organelle is excluded from endomembrane system?

A. Endoplasmic reticulum

B. Mitochondria

C. Golgi complex

D. Lysosomes

Answer:

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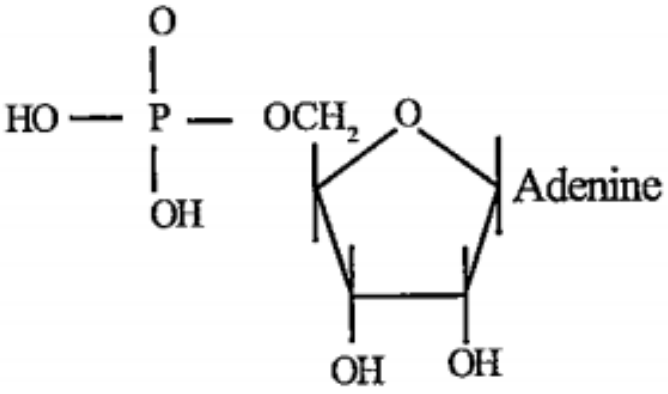
33. The given organic compound is a diagrammatic representation of:



A. Lecithin

B. Adenosine

C. Adenylic acid

D. Uridine

Answer:

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34. Which one of the following is the significance of mitosis?

A. Restricted to haploid cells

B. Cell repair

C. Increases the genetic variability

D. Recombination of chromosomes

Answer:

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35. Which of the following statements about the structure of proteins is true?

A. The sequence of amino acids in a protein represents the secondary structure.

B. The helices of proteins are always left handed.

C. Adult human haemoglobin consists of two subunit .

D. Proteins am heteropolymers containing strings of amino acids.

Answer:

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36. In a typical eukaryotic cell cycle, Gap-I, synthesis and Gap-Z are the three phrases included in the:

A. prophase

B. metaphase

C. anaphase

D. interphase

Answer:

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37. Find out the correct statement:

A. During mitosis endoplasmic reticulum and nucleus disappear completely at early prophase.

B. Chromosomes are arrange J along the equator during prophase of mitosis.

C. Chromosome is made up of two sister chromatids at anaphase of mitosis.

D. Small disc shaped structures at the surface of the centromeres that appear during metaphase are kinetochores.

Answer:

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38. Which of the following secondary metabolites belong to the group drugs?I. Morphine II. Curcumin III. Codeine IV. Vinblastine V.Abrin:

A. I and II

B. I and V

C. II and IV

D. II and IV

Answer:

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39. Which of the following statements about the mass flow hypothesis is wrong?

A. It is the accepted mechanism or translocation of sugars from source to sink

B. As glucose is prepared at source it is converted sucrose

C. Sucrose is actively loaded into a sieve tube.

D. The process of loading at source produces a hypotonic condition in the phloem.

Answer:

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40. Pick out the wrong statement I. Apoplast is the system of adjacent cell walls that is continuous throughout the plant II. Endodermis is impervious to water molecules. III.Pinus seeds germinate and establish without the presence of mycorrhizae

A. l and ll

B. l and II

C. Only III

D. Only II

Answer:

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41. 3-phosphoglyceric acid (PGA) as the first CO_2 fixation product in algal photosynthesis was discovered by

A. Joseph Priestley

B. Jan Ingenhousz

C. TW Engelmann

D. Melvin Calvin

Answer:

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42. Which of the following statements about plasmolysis is/are true?I. Plasmolysis occurs when water moves into the cell.II. Cells shrink in hypotonic solutions.III. If the external solution balances the osmotic pressure of the cytoplasm, it is said to be isotonic.

A. Only I

B. Only ll

C. Only III

D. l and Li

Answer:

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43. FAD is electron acceptor in the citric acidcycle during the oxidation of:

A. malic acid to oxaloacetic acid

B. succinic acid to malic acid

C. citric acid to alpha-ketoglutaric acid

D. alpha-ketoglutaric acid to succinic acid

Answer:

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44. Maximum absorption of light by chlorophyll-a occurs in which regions of the absorption spectrum?I. Blue,II. Red,III. Green,IV. Yellow.

A. I and II

B. II and III

C. I and IV

D. II and IV

Answer:

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45. In which one of the following reactions of glycolysis, oxidation takes place?

A. Glucose 6-phosphate to fructose 6-phosphate

B. Fructose 6-phosphate to fructose 1,6 -bisphosphate

C. I, 3-bisphosphoglycerate to 3-phosphoglyceric acid

D. 3-phosphoglyceraldehyde to 1,3-bisphosphogycerate

Answer:

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46. Cyclic photophosphorylation results in the formation of:

A. $NADPH + H^+$

B. ATP and $NADPH + H^+$

C. ADP

D. ArP

Answer:

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47. One hormone stimulates the closure of stomata and another on influences the swelling of the axis in dicot plants.They are-

A. gibberellins and ethylene

B. abscisic acid and cytokinins

C. gibberellins and cytokinins

D. auxin and cytokinins

Answer:

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48. Which of the following statements regarding photoperiodism is false?

A. The response of plants to periods of light/day is termed photoperiodism.

B. The shoot apices cannot perceive photoperiods.

C. In day neutral plants there is no correlation between exposure to light

duration and induction of flowering response.

D. The site of perception of the light/dark duration is the flower.

Answer:

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49. The residual persistent nucellus in the seed of black pepper and beet is called

A. perisperm

B. perisperm

C. pericarp

D. scutellum

Answer:

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50. Consider the following statements with respect to flowering plants I. The pollen grains represent the male gametes.II. The functional

megaspore develops into the embryo sac represent the female gamete.III. Transfer of pollen grains from anther to the stigma of different plant is known as xenogamy.IV. Transfer of pollen grains from anther to the stigma of another flower of the same plant is known as geitonogamy. Of the above statements.

A. I and ll alone are correct

B. I and ll alone are correct

C. I and IV alone are correct

D. III and IV alone are correct

Answer:

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51. Which of the following is false in angiosperms?

A. Egg cell - Haploid

B. Megaspore - Diploid

C. Pollen grain - Haploid

D. Synergid-Haploid

Answer:

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52. Each secondary spermatocyte after second meiotic division produces:

A. four haploid spermatids

B. only one haploid spermatid

C. two haploid spermatids

D. two diploid spermatids

Answer:

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53. What are hormone releasing IUDs?

A. LNG 20

B. Lippes loop

C. Cu-T

D. Multiload 375

Answer:

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54. Read the statements regarding a stable community and choose the correct option.I. Must be resistant to occasional disturbances.II.Should show much variation in productivity from year to year.III. Must be resistant to invasions by alien species.

A. I and ll are correct

B. I, II and III are correct

C. I only is correct

D. I and III are correct

Answer:

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55. The cytokine barrier among these is:

A. polymorphonuclear neutrophil

B. monocyte

C. NK-cell

D. interferon

Answer:

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56. Ringworms are caused by:I. Wuchereria,II. Microsporum,III. Haemophilus,IV. Epidermophyton.

A. I and II

B. ll and III

C. II and IV

D. l and IV

Answer:

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57. Read the statements.I. IgE antibodies are produced in an allergic reaction.II. B-lymphocytes mediate cell mediated immunity.III. The yellowishfluid colostrum has

abundant IgE antibodies.IV. Spleen is a secondary lymhoid organ. Of the above statements.

A. I only is correct

B. I and II are correct

C. II and III are correct

D. I and IV correct

Answer:

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58. The microbial biocontrol agent for butterfly caterpillar is:

A. Bacillus thuringiensis

B. Saccharomyces

C. Lactobacillus

D. Cyanobacteria

Answer:

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59. The first human-like hominid was called:

A. Homo habilis

B. Homo erectus

C. Homo sapiens

D. Dryopithecus

Answer:

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60. Oparin and Haldane proposed:

A. the theory of natural selection

B. that migration affects genetic equilibrium

C. that mutations caused specification

D. that the first form of life could have come pre-existing non-living organic molecules

Answer:

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61. Flame cells of flatwoims help in:I. osmoregulation,II. Digestion,III. Reproduction,IV. Excretion,V. bioluminescence.

A. ll only is correct

B. l and IV only is correct

C. III only is correct

D. I and V only is correct

Answer:

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62. Read thestatements regarding echinoderms and choose the correct option:I. All are marine with organ system level organisation.II. Adults are bilaterally symmetrical.III. They are dioecious.IV. Fertilisation is internal and indirect development is observed.V. Triploblastic and acoelomate animals.

A. I and III are correct

B. I and IV are correct

C. l, III and V are correct

D. l and V are correct

Answer:

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63. This class of animals are all ectoparasites in some fishes:

A. Amphibia

B. Osteichthyes

C. Reptilia

D. Cyclostomata

Answer:

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64. The structure in earthworm which serves as a wedge to force open cracks in the soil is:

A. peristomium

B. setae

C. clitellum

D. prostomium

Answer:

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65. Which among these is not involved in excretion in cockroaches?

A. Malpighian tubules

B. Nephrocyte

C. Urecose glands

D. Maxillary palps

Answer:

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66. Frogs:

A. are uricotelic

B. have olfactory lobes in the midbrain

C. do not have renal portal system

D. have lymphatic system

Answer:

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67. Most of the cartilages in vertebrate embryo are replaced in adult by:

A. blood

B. bones

C. tendons

D. ligaments

Answer:

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68. Name the specialised connective tissue.

A. Adipose tissue

B. Bone

C. Areolar tissue

D. Fibroblasts

Answer:

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69. The moiety present at the 5'end of ribose sugar in a polynucleotide is:

A. OH

B. CH_2

C. phosphate

D. adenine

Answer:

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70. Three alleles namely 1^A, I^B, and i control the blood grouping in human beings. How many different genotypes are likely to be present in the human population?

A. 2

B. 4

C. 5

D. 6

Answer:

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71. An example for co-dominance:

A. eye colour in Drosophila

B. seed shape and colour in pea plants

C. AB blood group in man

D. haemophilia in man

Answer:

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72. The nuclear structure observed by Henking in 50% of the insect sperm after spermatogenesis was:

A. X body

B. autosome

C. Y-chromosome

D. nucleolus

Answer:

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73. Physical-association of genes one chromosome is called:

A. repulsion

B. linkage

C. aneuploidy

D. duplication

Answer:

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74. In the double-helical structure of DNA, the pitch of the helix is:

A. 3.4 nm

B. 0.34 nm

C. 6.6 nm

D. 34 nm

Answer:

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75. In the ribose of RNA, unlike DNA, (Every nucleotide residue has an additional).

A. COOH group in the 2' position

B. OH group in the 5' position

C. OH group in the 2' position

D. phosphate group in the 2'position

Answer:

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76. What is a nucleosome?

A. A vesicle containing positively charged histones within nucleolus

B. They are similar to endosomes

C. A structure formed by wrapping of negatively charged DNA around positively charged histone octamer

D. They are the transforming principles discovered by Griffith

Answer:

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77. What are microsatellites?

A. Repetitive DNA sequences

B. ESTs

C. YAC

D. BAC

Answer:

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78. Some amino acids are coded by more than one codon as the code is:

A. unambiguous

B. specific

C. universal

D. degenerate

Answer:

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79. DNA replicates semi-conservatively was first shown in:

A. Vicia faba

B. E.coli

C. Streptococcus pneumoniae

D. Drosophila

Answer:

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80. The enzyme that catalyses transcription of RNA in bacteria:

A. DNA dependent RNA polymerase

B. RNA polymerase I

C. DNA polymerase

D. RNA polymerase II

Answer:

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81. A molecule to act as a genetic material has the following properties:I. should be able to replicate.II. should be structurally more stable.III. should be more reactive and labile. IV. should provide scope for slow changes.Choose the correct option:

A. I, II and III are correct

B. III alone is correct

C. III and IV are correct

D. I, II and IV are correct

Answer:

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82. Choose the correct statement among the following.

A. Taylor and his colleagues used E.coli to prove semiconservative replication of DNA.

B. In Griffith's experiment the mice infected with R-strain of Streptococcus pneumoniae died due to pneumonia.

C. Hershey and Chase proved the transforming principle experimentally.

D. Semi-conservative replication was experimentally proved by Meselson and Stahl.

Answer:

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83. 1 Nanometer = _____

A. $10^{-9}m$

B. 10^{-4m}

C. $10^{-6}m$

D. $10^{-12}m$

Answer:

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84. The precursor of eukaryotic mRNA is:

A. 5sr RNA

B. tRNA

C. rRNA

D. snRNA

Answer:

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85. The disorder caused by point mutation is:

A. Down's syndrome

B. Sickle-cell anaemia

C. Klinefelter's syndrome

D. Tetany

Answer:

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86. The secretions of the brush border cells of the intestinal mucosa along with the secretion of goblet cells constitute the:

A. succus entericus

B. chyme

C. gastric juice

D. Chylomicrons

Answer:

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87. State the volume of air remaining in the lungs after a normal breathing.

A. vital capacity

B. junctional residual capacity

C. residual volume

D. total lung capacity

Answer:

88. Choose the correct statement among the following :

A. The intestinal mucosal epithelium has oxyntic cells.

B. Ptyalin converts proteins into proteases and peptones.

C. Crypts of Lieberkuhn is seen between the bases of villi in the intestine.

D. Sphincter of Oddi is present at the junction of oesophagus and cardiac stomach

Answer:

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89. The body temperature regulatory centre in the brain is:

A. cerebellum

B. corpus callosum

C. hypothalamus

D. hippocampus

Answer:

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