



BIOLOGY

BOOKS - SARAS PUBLICATION

MODEL QUESTION PAPER 4

Exercise

1. Organ of Jacobson' helps in

A. Touch

B. vision

C. Smell

D. hear

Answer:



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2. The following statements are concerned with animal physiology choose incorrect statement.

A. Bile is secreted by largest gland of body

B. This alkaline secretion containing no enzyme is able to break the fat globule

C. Bile contain bile salt and bile enzyme, biliverdin and bilirubin, which is synthesised and stored by gall bladder

D. Common hepatic duct is formed by right and left hepatic duct of liver

Answer:



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3. Down's syndrome a chromosomal disorder in human is caused by

- A. monosomy of one autosome
- B. trisomy of 21st chromosome
- C. trisomy of X-chromosome
- D. nondisjunction of X-chromosome

Answer:



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4. Column of Bertini' is kidney of majority of the mammals are formed as the extension of

A. cortex into medulla

B. medulla into pelvis

C. pelvis into ureter

D. medulla into cortex

Answer:



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5. Which are represent a sesamoid bone?

A. Tarsal bone

B. Metatarsal bone

C. Patella

D. Fibula-shank zone

Answer:



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6. In amniocentesis technique which is used for biochemical assay to examine fluid karyotypically and to detect hereditary and chromosomal disorders is growing foetus by pathologist?

- A. Amniotic fluid
- B. chorionic fluid
- C. Exfoliated foetal cells
- D. Both (a) and (c)

Answer:



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7. In myogenic heart present on molluscs and vertebrates, action potentials generated from

A. AV node

B. mass of nerve cells

C. a patch of modified heart muscles and

SA node

D. SA node

Answer:



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8. The eyes of octopus and eyes of cat show different patterns of structure, yet they perform similar function .This is an example of

A. homologous organs that have evolved due to the convergent evolution

B. homologous organs that have evolved due to the divergent evolution

C. analogous organs that have evolved due to the convergent evolution

D. analogous organs that have evolved due to the divergent evolution

Answer:



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9. In an area where DDT had been used extensively, the population of birds declined significantly because

- A. birds stopped laying eggs
- B. earthworms in the area got eradicated
- C. cobras were feeding exclusively on birds
- D. many of the birds' eggs laid, did not hatch

Answer:



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10. 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?

- A. Insulin and glucagon
- B. Thyroxine and insulin
- C. Somatostatin and oxytocin
- D. Cortisol and testosterone

Answer:



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11. Maximum number of existing transgenic animals is of:

A. mice

B. cow

C. pig

D. fish

Answer:



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12. Where will you look for the sporozoites of the malarial parasite?

A. Red blood corpuscles of humans suffering from malaria

B. Spleen of infected humans

C. Salivary glands of freshly moulted female Anopheles mosquito

D. salivary glands of infected female Anopheles mosquito

Answer:



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13. Which one of the following animals is correctly matched with its particular named taxonomic category?

A. Cuttle fish -Mollusca, a class

B. Hiancm - Primate, the family

C. House fly- Musca, an order

D. Tiger - tigris, the species

Answer:



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14. Which one of the following statement is correct with respect to kidney function regulation?

A. Exposure of cold temperature stimulates

ADH release

B. An increase in glomerular blood flow

stimulate formation of angiotensin-II

C. During summer when body loses lot of water by

D. When some one drinks lot of water ADH is suppressed

Answer:



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15. Which one of the following conditions, correctly, describes the manner of determining the sex in the given example?

A. XO type of sex chromosomes determine male sex in grasshopper

B. XO condition in humans is found in Turner syndrome, determines female sex

C. Homozygous sex chromosomes (XX) produce male in *Drosophila*

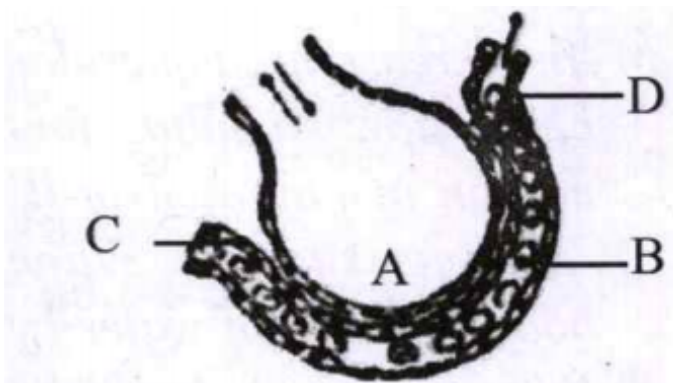
D. Homozygous sex chromosomes (ZZ) determine female sex in birds

Answer:



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16. The figure given below shows a small part of human lung where exchange of gas take place. In which are of the options given below, the one part A, B, C and D is correctly identified along with its function?



A. B : Red blood cell - transport of CO₂

mainly

B. C : Arterial capillary - passes oxygen to

tissues

C. A : alveolar cavity - main site of exchange

of respiratory gases

D. D : Capillary wall - exchange of O₂ and

CO₂ takes place here

Answer:



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17. A young infant may be feeding entirely on mother's milk, which is white in colour, but the stool, which the infant passes out is quite yellowish, what is this yellow colour due to the

A. intestinal juice

B. bile pigments passed through bile juice

C. undigested milk protein casein

D. pancreatic juice poured is to duodenum

Answer:



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18. Which part of human brain is concerned with the regulation of body temperature?

A. Medulla oblongata

B. Cerebellum

C. Cerebrum

D. Hypothalamus

Answer:



19. In the case of peppered moth (*Biston betularia*) the black - coloured form became dominant over the light - coloured form in England during industrial revolution. This is an example of

A. natural selection where by the darker forms were selected

B. appearance of the darker coloured individuals due to the very poor sun

light

C. protective mimicry

D. inheritance of darker colour character

acquired due to the darker environment

Answer:



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20. What is vital capacity of our lungs?

A. Inspiratory reserve volume + tidal volume

B. Total lung capacity - expiratory reserve volume

C. Inspiratory reserve volume + expiratory reserve volume

D. Total lung capacity-residual volume

Answer:



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21. A drop of each of the following is placed separately on four slides. Which of them will not coagulate

A. Blood plasma

B. Blood serum

C. Sample from the thoracic duct of
lymphatic system

D. Wholeblood from pulmonary vein

Answer:



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22. Both sickle cell anaemia and Huntington's chorea are

- A. bacterial related disease
- B. Congenital disorders
- C. pollutant induced disorders
- D. virus related diseases

Answer:



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23. The 'blue baby'syndrome result from

A. excess of chloride

B. Methaemoglobin

C. Excess of dissolved O_2

D. excess of TDS (Total Dissolved Solids)

Answer:



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24. A woman with normal vision, but whose husband is colour blind marries a colour blind man. Suppose that the fourth child of this couple was a boy. This boy

A. must (have normal colour vision

B. will be partially colourblind since, he is heterozygous for the colourblind mutant allele

C. must be colourblind

D. may be colourblind or maybe of normal vision

Answer:



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25. If Henle's loop were absent from mammalian nephron, which one of the following is to be expected?

- A. The urine will be more concentrated
- B. The urine will be more dilute
- C. There will be no urine formation

D. There will be hardly any change in the quality and quantity of urine formed

Answer:



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26. In which of the animal dimorphic nucleus is found?

A. Amoeba

B. Trypanosoma gambiens

C. Plasmodium vivax

D. Paramecium caudatum

Answer:



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27. Hormones that control menstrual cycle.

A. FSH

B. LH

C. FSH, LH and oestrogen

D. Progesterone

Answer:



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28. Two crosses between the same pair of genotype or phenotype in which the sources of the gametes are reversed in the cross in known as

A. dihybrid cross

B. reverse cross

C. test cross

D. reciprocal cross

Answer:



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29. Which group of vertebrates comprises the highest number of endangered species?

A. Reptiles

B. Birds

C. Mammals

D. Fishes

Answer:



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30. Match the following column I with column

II

Column I

Column II

A. African sleeping sickness

B. Dum-dum fever

C. Pneumonia

D. Parasitic castration

1. Sacculina

2. Haemophilus influenzae

3. Leishmania donovani

4. Trypanosoma gambiense

5. Leishmania tropica

A. ABCD 4 3 2 1

B. ABCD-3 4 2 1

C. ABCD 3 1 2 4

D. ABCD 4 3 1 5

Answer:



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31. In the cycle of *Ascaris lumbricoides* rhabdites form larva undergoes 2nd and 3rd moulting in

A. Liver

B. heart

C. lungs

D. small intestine

Answer:



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32. Minisatellites or VNTRs are used as

- A. DNA fingerprinting
- B. Polymerase Chain Reaction (PCR)
- C. gene therapy
- D. gene mapping

Answer:



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33. Match the following with reference to adaptations.

Column I

Column II

A. Sea gulls

1. Chloride secreting glands

B. Kangaroo

2. Water cells in rumen

C. Turtles

3. Salt excreting glands

D. Salmon

4. Oxidation of fats to generate water

5. Anadromous migration

A. ABCD-2 4 3 1

B. ABCD 3 2 1 5

C. ABCD-2 3 4 1

D. ABCD-3 4 1 5

Answer:



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34. In which Assisted Reproductive Technology (ART), test tube baby, procedure is applied?

A. Gamete Intra Fallopian Transfer (GIFT)

B. Intra Cytoplasmic Sperm Injection (ICSI)

C. Vitro Fertilization and Embryo Transfer
(IVFET)

D. Zygote Intra Fallopian Transfer (ZIFT)

Answer:



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35. Skin colour in man in an example of

A. sex linked inheritance

B. multiple allelism

C. pleiotropy

D. Polygenic inheritance

Answer:



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36. Which of the protein is found in spindle fibre?

A. Tubulin

B. Albumin

C. Mucin

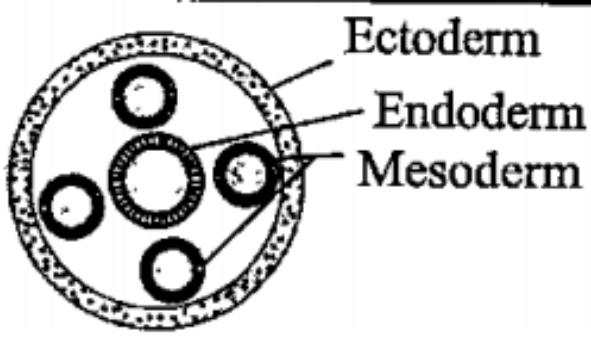
D. Haemoglobin

Answer:



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37. The kind of coelome represented in the diagram given below is characteristic of



- A. Earth worm
- B. cockroach
- C. Round worm
- D. tapeworm

Answer:



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38. In humans, what is the ratio of number of gametes produce from are male primary sex cell to the number of gametes produced from one female primary sex cell?

A. 1 : 1

B. 1 : 3

C. 1 : 4

D. 4 : 1

Answer:



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39. Monoclonal and polyclonal antibodies are produced by

A. T-memory cells

B. NK cells

C. Plasma cells of B-lymphocytes

D. memory cells of B-lymphocytes

Answer:



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40. Which is the correct statement regarding gastrointestinal hormone?

A. There are either amino acids or their derivatives

B. Their secretion is released directly into blood

C. They are peptide or polypeptide in nature and stimulate gland to secrete digestive juice

D. They are generally known as neurotransmitter

Answer:



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41. Which one of the following is an example of negative feedback loop in human?

A. Constriction of skin blood vessels and contraction of skeletal muscles when it

is to cold

B. Secretion of tears after falling of sand particles into the eye

C. Salivation of mouth at the sight of delicious food

D. Secretion of sweat glands and constriction of skin blood vessels when it is too hot

Answer:



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42. Angiotensinogen is secreted by

A. macula densa cells

B. Endothelial cells

C. Liver cells

D. Juxtaglomerular(JG) cells

Answer:



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43. From the following statements select the wrong are

A. millipedes have two pairs of appendages
in each segment of the body

B. Prawn has two pairs of antennae

C. animals belonging to phylum-porifera
are exclusively marine

D. nematocytes are characteristic of the
phylum Cnidaria

Answer:



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44. which of the following is not a hereditary disease?

- A. Cretinism
- B. Cystic fibrosis
- C. Thalassaemia
- D. Haemophilia

Answer:



45. In which of the following chlorocruorin pigment is found?

- A. Annelida
- B. Echinodermata
- C. Insecta
- D. Lower chordata

Answer:



46. Interfascicular cambium develops from the cells of

- A. medullary rays
- B. Xylem parenchyma
- C. Endodermis
- D. pericycle

Answer:



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47. Besides paddy fields, cyanobacteria are also found inside vegetative part of

A. Pinus

B. Cycas

C. Equisetum

D. Psitotum

Answer:



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48. Advantage of cleistogamy is

- A. higher genetic variability
- B. more vigorous offspring
- C. no dependence on pollinators
- D. vivipary

Answer:



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49. Variation in gene frequencies within populations can occur by chance rather than by natural selection. This is referred to as

- A. genetic flow
- B. genetic drift
- C. random mating
- D. genetic load

Answer:



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50. What is true about ribosomes?

A. The prokaryotic ribosomes are 80S, where S stand for sedimentation coefficient

B. These are composed of ribonucleic acid and proteins

C. These are found only in eukaryotic cells

D. These are self-splitting introns of borne RNAs

Answer:



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51. Which of the following statements are true regarding DNA polymerase used in PCR ?

- A. It is used to ligate introduced DNA in recipient cells
- B. It serves as selectable marker
- C. It is isolated from a virus

D. it remains active at high temperature

Answer:



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52. Continuous addition of sugars in 'fed batch' fermentation is done to:

A. obtain antibiotics

B. purify enzymes

C. degrade sewage

D. produce methane

Answer:



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53. Selaginella and Salvinia are considered to represent a significant step towards evolution of seed habit because

A. a female gametophyte is free and gets dispersed like-seeds

B. female gametophytes lacks archegonia

C. megaspores possess endosperm and embryo surrounded by seed coat

D. embryo develops in female gametophyte, which is retained on parent sporophyte

Answer:



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54. C_4 plants are more efficient in photosynthesis than C_3 plants due to

A. Higher leaf area

B. presence of larger number of chloroplasts in the leaf cells

C. presence of thin cuticle

D. lower rate of photorespiration

Answer:



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55. Which of the following plant species. You would select for the production by bioethanol?

A. Brassica

B. Zea mays

C. Pongamia

D. Jatropha

Answer:



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56. Two plants can be conclusively , said to belong to the same species, if they

A. can reproduce freely with each other and form seeds

B. have more than. 90% similar genes

C. look similar and posses identical secondary metabolites

D. have some number of chromosomes

Answer:



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57. Parthenocarpic tomato fruits can be produced by

A. removing androecium of flowers before pollen grains are released

B. treating the plants with low concentrations of gibberellic acid and

auxins

C. raising the plants from vernalized seeds

D. treating the plants with phenylmercuric

acetate

Answer:



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58. Identify the type of ovule, where the nucellus acquires a horse - shoe shaped structure.

A. Circinotropous

B. Anatropous

C. Amphitropous

D. Atropous

Answer:



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59. In your opinion, which is the most effective way to conserve the plant diversity of an area?

- A. By tissue culture method
- B. By creating biosphere reserve
- C. By creating botanical garden
- D. By developing seed bank

Answer:



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60. The most likely reason for the development of resistance against pesticides in insect damaging crop as

- A. random mutations
- B. genetic recombination
- C. directed mutations
- D. acquired heritable changes

Answer:



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61. When a diploid female plant is crossed with a tetraploid male, the ploidy of endosperm cells in the seeds is

A. tetraploidy

B. pentaploidy

C. diploidy

D. triploidy

Answer:



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62. Common indicator organism of water pollution is

A. *Lemna paucicostata*

B. *Eichhornia crassipes*

C. *Escherichia coli*

D. *Entamoeba histolytica*

Answer:



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63. Which of the following plants are used as green manure in crop fields and in sandy soils?

A. *Saccharum musga* and *Lantana camara*

B. *Dichanthium annulatum* and *Agola nilotica*

C. *Crotalaria juncea* and *Alhagi camelorum*

D. *Calotropis procera* and *Phyllanthus niruri*

Answer:



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64. Ergot of rye is caused by a species of

A. Phytophthora

B. Unicinuta

C. Ustilago

D. Claviceps

Answer:



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65. One gene one enzyme relationship was established

- A. *Neurospora crassa*
- B. *Salmonella typhimurium*
- C. *Escherichia coli*
- D. *Diplococcus pneumoniae*

Answer:



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66. In an annual ring, the light coloured part is brown's

A. early wood

B. late wood

C. heart wood

D. sap wood

Answer:



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67. Which one of the following is a pseudocarp?

A. apple

B. Guava

C. Tomato

D. Banana

Answer:



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68. Boron in green plants assists in

- A. activation of enzymes
- B. acting as enzyme cofactor
- C. photosynthesis
- D. sugar transport

Answer:



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69. Which statement about photosynthesis is false?

A. The electron carriers involved in the photophosphorylation are located on the thylakoid membranes

B. Photosynthesis is a redox process, in which water is oxidised and CO_2 is reduced

C. The enzymes required for carbon fixation are located only in grana of chloroplasts

D. In green plants, both PS I and PS-II are required for the formation of $NADPH + H^+$

Answer:



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70. FAD is electron acceptor during oxidation of the following.

A. α -ketoglutarate -Succinyl Co-A

B. Succinic acid- Fumaric acid

C. Succinyl Co-A-Succinic acid

D. Fumaric acid- Malic acid

Answer:



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71. One set of plants was grown at 12 hrs day and 12 hrs night period cycles and it flowered while in the other set, night phase was interrupted by flash of light and it did not produce flower, under which one of the following categories will you place this plant?

A. Long-day

B. Darkness neutral

C. Chloroplast

D. Short day

Answer:



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72. In which one of the following is living fossil?

A. Cycas

B. Moss

C. Saccharomyces

D. Spirogyra

Answer:



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73. Sexual reproduction in Spirogyra is an advanced feature because it shows

- A. morphologically different sex organ
- B. physiologically differentiated sex organs
- C. different sizes of motile sex-organs
- D. same size of motile sex organs

Answer:



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74. Introduction of food plants developed by genetic engineering is not desirable because

A. economy of developing countries may alter

B. there products are less tasty as compared to the already existing

products

C. This method is costly

D. There is danger of introduction viruses

anti toxins with introduced crop

Answer:



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75. What are photolithotrophs?

- A. obtain energy from radiation and hydrogen from organic compounds
- B. obtain energy from radiation and hydrogen from inorganic compounds
- C. obtain energy from organic compounds
- D. obtain energy from inorganic compounds

Answer:



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76. Which aquatic fern performs nitrogen-fixation?

A. Azolla

B. Nostoc

C. Salvia

D. Salvinia

Answer:



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77. Adhesive pads of fungi penetrate the host with the help of

- A. mechanical pressure and enzymes
- B. hooks and suckers
- C. softening by enzymes
- D. only by mechanical pressure

Answer:



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78. Which of these do not follow independent assortment?

A. Genes on non-homologous

chromosomes and absence of linkage

B. Genes on homologous chromosomes

C. Linked genes on same chromosomes

D. Unlinked genes on same chromosome

Answer:



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79. Which breaks dormancy of potato tuber?

A. Gibberellin

B. IAA

C. ABA

D. Zeatin

Answer:



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80. An improved variety of transgenic basmati rice:

A. does not require chemical fertilizers and growth hormones

B. gives high yield and is rich in vitamin-A

C. is completely resistant to all insect pests and diseases of paddy

D. gives high yield, but has no characteristics aroma

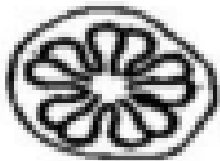
Answer:



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81. Which one of the following diagrams represents the placentation in *Dianthus*?

A.



B.



C.



D.



Answer:



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82. Choose the incorrect combination from the following

- A. Triglyceride-Ester bond
- B. Carbohydrates -Monosaccharides
- C. Polysaccharides- Glycosidic bond
- D. Dipeptide - Two peptide bonds

Answer:



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83. Match the vegetative propagules listed under column I with the plants given under column I. Choose the appropriate option from the given choices.

Column I**Column II**

A. Rhizome

1. Ginger

B. Offset

2. Bryophyllum

C. Sucker

3. Chrysanthemum

D. Leaf buds

4. Eichhomia

Codes

ABCD

ABCD

*a) 34 12**b) 41 2 3**c) 143 2**d) 2 1 3 4*

A. ABCD -3 4 1 2

B. ABCD -4 1 2 3

C. ABCD-1 4 3 2

D. ABCD-2 1 3 4

Answer:



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84. In garden pea, round-shape of seeds is dominant over wrinkled-shape. A pea plant heterozygous for round shape of seeds is selfed and 1600 seeds, produced during the cross are subsequently germinated. How many seedlings would have the parental phenotype?

A. 1600

B. 800

C. 400

D. 1200

Answer:



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85. One of the chief reasons among the following for the depletion in the number of species making endangered is

- A. greenhouse effect
- B. habitat destruction
- C. over hunting and pouching
- D. competition and predation

Answer:



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86. Roquefort cheese' is ripened by using a

- A. type of yeast

B. fungus

C. bacterium

D. cyanobacteria

Answer:



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87. With respect to angiosperms, identify the incorrect pair from the following.

A. Antipodals -2n

B. Vegetative cell of male gametophyte-n

C. primary endosperm nucleus -3n

D. Cells of nucellus of ovule -2n

Answer:



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88. Eco RI is

A. a restriction enzyme

B. a plasmid

C. used to join two DNA fragments

D. the abbreviation for bacterium E.coli

Answer:



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89. Which of the following is true for eutrophicated water body?

A. High mineral content

B. High O_2 content

C. Rich species diversity

D. Low organic content

Answer:



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90. When the two ecosystems overlap each other the area is called

A. habitat

B. niche

C. ecotone

D. ecotype

Answer:



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