



BIOLOGY

BOOKS - SARAS PUBLICATION

MODEL QUESTION PAPER 1

Exercise

1. 'Systema Naturae' was written by

- A. Ernst Mayr
- B. Carolus Linnaeus
- C. RH Whittaker
- D. WM Stanley

Answer:

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2. Identify the correct statements from the below about "Meiosis".

- (I) Meiosis takes place in the reproductive organs
- (II) Results in the formation of gametes
- (III) Haploid sperms are made in testes
- (IV) Haploid eggs are made in ovaries of animals

A. I, II and III

B. II, III and IV

C. I and IV

D. II and III

Answer:

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3. Five kingdom system of classification suggested by RH Whittaker is not based on

- A. the presence or absence of a well defined nucleus
- B. mode of reproduction
- C. mode of nutrition
- D. complexity of body organisation

Answer:



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4. Archaeobacteria differ from eubacteria in

- A. cell membrane structure

- B. mode of nutrition
- C. cell shape
- D. mode of reproduction

Answer:

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5. Phylogenetic system of classification is based on

- A. evolutionary relationships
- B. morphological features
- C. chemical constituents
- D. floral characters

Answer:

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6. A marine cartilaginous fish that can produce electric current is

- A. Pristis
- B. Torpedo
- C. Trygon
- D. Scoliodon

Answer:

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7. Select the correct statements(I) From the region of elongation, some of the epidermal cells form root hairs,(II)Pneumatophores are seen in Rhizophora,(III)Adventitious roots are seen in banyan tree, (IV) Maize and sugarcane have prop roots

A. I and IV

B. I, III and IV

C. I, II and IV

D. II and III

Answer:

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8. Describe cyathium inflorescence

A. scorpioid cyme showing central female, many peripheral male flowers

B. scorpioid cyme showing central male, many peripheral female flowers

C. dichasial cyme showing two whorls of 3- 9 flowers

D. dichasial cyme showing two whorls, one of the male and another of female flowers

Answer:

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9. Match the following columns

column I (Stem modifications)	column II (Found in)
A. Underground stem	1. Euphorbia
B. Stem tendrils	2. Opuntia
C. Stem thorns	3. Potato
D. Flattened stem	4. Citrus
E. Fleshy cylindrical stem	5. Cucumber

A.

Codes: (A) – (1), (B) – (2), (C) – (3), (D) – (5), (E) – (4)

B. Codes:

Codes: (A) – (2), (B) – (3), (C) – (4), (D) – (5), (E) – (1)

C.

Codes: (A) – (3), (B) – (4), (C) – (5), (D) – (1), (E) – (2)

D.

Codes: (A) – (3), (B) – (5), (C) – (4), (D) – (2), (E) – (1)

Answer:



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10. Tracheids differ from other treachery elements in

A. having casparian strips

B. being imperforate

C. lacking nucleus

D. being lignified

Answer:



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11. Companion cells are closely associated with _____

A. sieve elements

B. vessel elements

C. trichomes

D. guard cells

Answer:



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12. The striated appearance of a myofibril is due to the distribution pattern of

- A. actin and myosin
- B. fascicles
- C. troponin
- D. meromyosin

Answer:

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13. The lining of intestine and kidneys in human is

- A. keratinised

B. brush border

C. ciliated

D. None of the above

Answer:



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14. In cockroach, the arthroal membrane

A. forms the hindwings

B. covers the compound eyes

C. forms the hypopharynx

D. joins the sclerites

Answer:



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15. Which one of the following also acts as a catalyst in a bacterial cells?

- A. snRNA
- B. hnRNA
- C. 23S rRNA
- D. 5SrRNA

Answer:

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16. Glutamine is an important protein in

- A. potato

B. Wheat

C. Soyabean

D. spinach

Answer:



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17. At metaphase, chromosomes are attached to the spindle fibres by their

A. Satellites

B. Secondary constrictions

C. Kinetochores

D. Centromere

Answer:



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18. Transpiration is manifestation of

- A. turgor pressure
- B. wall pressure
- C. root pressure
- D. None of these

Answer:



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19. In land plants the guard cells are different from other epidermal cells in having

- A. mitochondria
- B. endoplasmic reticulum
- C. chloroplasts
- D. cytoskeleton

Answer:

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20. Which one of the following is not an essential mineral element for plants, while the remaining three are?

- A. Iron
- B. Manganese
- C. Cadmium
- D. Phosphorus

Answer:

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21. A nitrogen-fixing microbe associated with *Azolla* in rice fields is

- A. *Spirulina*
- B. *Anabaena*
- C. *Frankia*
- D. *Tolypothrix*

Answer:

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22. The correct sequence of cell organelles during photorespiration is

- A. chloroplast - Golgi bodies- mitochondria
- B. chloroplast-rough endoplasmic reticulum - dictyosomes
- C. chloroplast- mitochondria -peroxisome
- D. chloroplast - vacuole -peroxisome

Answer:



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23. CAM pathway is observed in

- A. pineapple
- B. maize

C. sunflower

D. sugarcane

Answer:

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24. In which one of the following processes CO_2 is not released?

A. Aerobic respiration in plants

B. Aerobic respiration in animals

C. Alcoholic fermentation

D. Lactate fermentation

Answer:

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25. Which of the metabolites is common to respiration mediated breakdown of fat, carbohydrates and proteins?

- A. Glucose - 6-phosphate
- B. Fructose 1,6-bisphosphate
- C. Pyruvic acid
- D. Acetyl Co - A

Answer:



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26. What is the role of bile in digestion of fats.

- A. act as coenzymes during the digestion of carbohydrates
- B. emulsify fats and facilitate their absorption

- C. aid in the break-up of proteins into amino acids and their absorption
- D. stimulate the pancreas to release its enzymes

Answer:

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27. If for some reason our goblet cells are non-functional this will adversely affect

- A. production of somatostatin
- B. secretion of sebum from the sebaceous glands
- C. maturation of sperms
- D. smooth movement of food downwards the intestine

Answer:



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28. Approximately 70 % of carbon dioxide absorbed by the blood will be transported to the lungs

- A. as bicarbonate ions
- B. in the form of dissolved gas molecules
- C. by binding to RBC
- D. as carbaminohaemoglobin

Answer:



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29. The volume of a air that can be breathed in by maximum forced inspiration over and above the normal inspiration is called

- A. expiratory reserve volume
- B. inspiratory reserve volume
- C. vital capacity
- D. inspiratory capacity

Answer:

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30. In a typical heart , if EDV is 120 mL of blood and ESV is 50 mL of blood, the stroke Volume (SV) is

- A. $120 - 50 = 70 \text{ mL}$
- B. $120 + 50 = 170 \text{ mL}$
- C. $120 \times 50 = 6000 \text{ mL}$
- D. $120 \div 52 = 2.3 \text{ mL}$

Answer:

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31. Which of the following causes an increase in sodium reabsorption in the distal convoluted tubule

- A. Increase in aldosterone levels
- B. Increase in antidiuretic hormone levels
- C. Decrease in aldosterone levels
- D. Decrease in antidiuretic hormone levels

Answer:

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32. The principal nitrogenous excretory compound in human is synthesized

- A. in kidneys, but eliminated mostly through liver
- B. in kidneys as well as eliminated by kidneys
- C. in liver and also eliminated by the same through bile
- D. in the liver, but eliminated mostly through kidneys

Answer:



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33. Chemical ions responsible for muscle contraction are



C. Na^+ and Ca^{2+}

D. Ca^{2+} and Mg^{2+}

Answer:

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34. The U-shaped bone present at the base of the buccal cavity is

A. malleus

B. ethmoid

C. zygomatic

D. hyoid

Answer:

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35. How do parasympathetic neural signals affect the working of the heart

- A. Reduce both heart rate and cardiac output
- B. Heart rate is increased without affecting the cardiac output
- C. Both heart rate and cardiac output increase
- D. Heart rate decreases, but cardiac output increases

Answer:



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36. Which part of the human ear plays no role in hearing as such, but is otherwise very much required?

- A. Eustachian tube

B. Organ of Cord

C. Vestibular apparatus

D. Ear ossicles

Answer:



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37. What is correct to say about the hormone action in humans?

A. Glucagon is secreted by β - cells of islets of Langerhans and stimulates glycogenolysis

B. Secretion of thymosin is stimulated with ageing

C. In female, FSH first binds with specific receptors on ovarian cell membrane

D. FSH stimulates the secretion of oestrogen and progesterone

Answer:

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38. Injury to adrenal cortex is not likely to affect the secretion of which one of the following?

- A. Aldosterone
- B. Both androstenedione and dehydroepiandrosterone
- C. Adrenaline
- D. Cortisol

Answer:

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39. Banana is vegetatively propagated by

- A. tubers
- B. rhizomes
- C. bulbs
- D. suckers

Answer:



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40. Asexual reproduction in fungi takes place by

- A. endospore
- B. gametangia
- C. exospore

D. conidiospore

Answer:

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41. Non-albuminous seed is produced in

A. maize

B. castor

C. wheat

D. pea

Answer:

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42. Which one of the following statement is correct?

- A. Hard outer layer of pollen is called intine
- B. Sporogenous tissue is haploid
- C. Endothecium produces the microspores
- D. Tapetum nourishes the developing pollen

Answer:



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43. Pappus helps in dispersal of pollen in

- A. Asteraceae
- B. Brassicaceae
- C. Malvaceae

D. Solanaceae

Answer:

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44. The shared terminal duct of the reproductive and urinary system in the human male is

A. urethra

B. ureter

C. vas deferens

D. vas efferentia

Answer:

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45. Twins may be identical or non-identical. Identical twins are

A. monozygotic

B. isozygotic

C. bizygotic

D. All of these

Answer:



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46. _____ is a hormone releasing IUD

A. Multiload 375

B. LNG 20

C. Cervical cap

D. Vault

Answer:

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47. The technique called Gamete Intra fallopian Transfer (GIFT) is recommended for those females

- A. who cannot produce an ovum
- B. who cannot retain the foetus inside uterus
- C. who cannot provide suitable environment for fertilisation
- D. whose cervical canal is too narrow to allow passage for the sperms

Answer:

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48. A human female with Turner's syndrome

- A. has 45 chromosomes with XO
- B. has one additional X-chromosome
- C. exhibits male characters
- D. is able to produce children with normal husband

Answer:



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49. A normal-visioned man whose father was colour blind, marries a woman whose father was also colour blind. They have their first child as a daughter. What are the chances that this child would be colourblind?

A. 1

B. 0

C. 0.25

D. 0.5

Answer:



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50. Mendel's principle of segregation means that the germ cells always receive

A. one pair of alleles

B. one quarter of the genes

C. one of the paired alleles

D. any pair of alleles

Answer:

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51. Removal of introns and joining of exons in a defined order during transcription is called

- A. looping
- B. inducing
- C. slicing
- D. splicing

Answer:

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52. Which one of the following is not a part of a transcription unit in DNA?

- A. The inducer
- B. A terminator
- C. A promoter
- D. The structural gene

Answer:

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53. Forelimbs of cat, lizard used in walking forelimbs of whale used swimming and forelimbs of bats used in flying are an example of:

- A. analogous organs

- B. adaptive radiation
- C. homologous organs
- D. convergent evolution

Answer:

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54. The primate which existed 15 mya among these was

- A. Homo habilis
- B. Australopithecus
- C. Ramapithecus
- D. Homo erectus

Answer:

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55. Which one of the following statements is correct with respect to AIDS?

- A. The HIV can be transmitted through eating food together with an infected person
- B. Drug addicts are least susceptible to HIV infection
- C. AIDS patients are being fully cured cent per cent with proper care and nutrition
- D. The causative HIV retrovirus enters helper T-lymphocytes thus, reducing their numbers

Answer:



56. Production of monoclonal antibodies by

A. obtained from a cell and act on one antigen

B. obtained from group of cells and act on more than one antigens

C. obtained from a group of same type of cells and act on single antigen

D. obtained from a group of same type of cells and act on more than one antigens

Answer:



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57. Which one of the following is breed of cattle?

- A. Ayrshire
- B. Ghagus
- C. Kadaknath
- D. Scampi

Answer:

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58. Which of the following is a case of wrong matching?

- A. Micropropagation- In vitro production of plants in large number
- B. Callus - Unorganised mass of cell produced in tissue culture
- C. Callus - Unorganised mass of cells produced in tissue culture
- D. Vector DNA-site for tRNA synthesis

Answer:

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59. Making two varieties of a cattle breed like red dance which have no common ancestors on either sides of their pedigree upto 4-6 generations is an example fo

- A. inbreeding
- B. crossbreeding
- C. outcrossing
- D. interspecific hybridisation

Answer:

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60. Which one of the following is used in the production of citric acid?

- A. *Aspergillus niger*
- B. *Rhizopus arrhizus*
- C. *Acefobacter*
- D. *Saccharomyces cerevisiae*

Answer:

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61. Ergotamine tartarate extracted from *Claviceps* is used for cure of

- A. bodyache
- B. headache

C. fever

D. severe stomach pain

Answer:

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62. The most abundant prokaryotes helpful to human in making curd from milk and in production of antibiotics are the ones categorised as

A. cyanobacteria

B. archaebacteria

C. chemosynthetic autotrophs

D. heterotrophic bacteria

Answer:



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63. Which one of the following is used as biological insecticide?

A. Tiger beetle

B. Caterpillar

C. Silkworm

D. Majra poka

Answer:



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64. An organism used as a biofertiliser for raising soyabean crop production is

A. Azospirillum

B. Rhizobium

C. Nostoc

D. Azotobacter

Answer:



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65. Which vector can clone only a small fragment of DNA?

A. Bacterial artificial chromosome

B. Yeast artificial chromosome

C. Plasmid

D. Cosmid

Answer:

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66. In genetic engineering the antibiotics are used

- A. as selectable markers
- B. to select healthy vectors
- C. as sequences from where replication starts
- D. to keep the culture free infection

Answer:

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67. Commonly used vectors for human genome sequencing are

A. T-DNA

B. BAC and YAC

C. Expression vectors

D. $T / Aclon \in g \xrightarrow{\quad} rs$

Answer:



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68. Tobacco plants resistant to a nematode have been developed by the introducing of DNA that produced (in the host cells)

A. both sense and antisense RNA

B. a particular hormone

C. an antioxidant

D. a toxic protein

Answer:

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

- A. boll worms
- B. nematodes
- C. white rusts
- D. bacterial blights

Answer:

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70. Which one of the following bacterium is used for the production of transgenic plants?

- A. Escherichia coli
- B. Pseudomonas
- C. Staphylococcus aureus
- D. Agrobacterium tumefaciens

Answer:

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71. The carrying capacity of environment for a given population can be represented by the equation

A. $dN = rN - \frac{N}{K}$

B. $\frac{dN}{dt} = rN - \frac{N}{K}$

C. $\frac{dN}{dt} = rN - \frac{1}{K}$

D. $\frac{dN}{dt} = rN \left[1 - \frac{N}{K} \right]$

Answer:



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72. Which one of the following processes during decomposition is correctly described?

- A. Fragmentation-Carried out by organisms such as earthworm
- B. Humification-Leads to the accumulation of a dark coloured substance humans, which resistant to microbial action at a very fast rate

C. Catabolism-Last step in the decomposition under fully anaerobic condition

D. Leaching - Water soluble inorganic nutrients rise to the top layers of soil

Answer:

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73. Major ecological community of plants and animals extending over large natural areas is known as:

A. bioregion

B. biosphere

C. biota

D. biome

Answer:



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74. The biomass available for consumption by the herbivores and the decomposers is called

- A. net primary productivity
- B. secondary productivity
- C. standing crop
- D. gross primary productivity

Answer:



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75. The organization which published the red list of species is

A. ICFRE

B. IUCN

C. UNEP

D. WWF

Answer:



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76. Environment Protection Act, to protect and improve the quality of our environment air, water and soil was passed in the year

A. 1971

B. 1974

C. 1981

D. 1986

Answer:

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77. A drug obtained through genetic engineering and useful for treating infertility is

A. calcitonin

B. chorionic gonadotropin

C. interleukin

D. tissue plasminogen activator

Answer:

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78. Which one of the following is not a bioindicator of water pollution

- A. Stone flies
- B. Blood worms
- C. Sludge worms
- D. Sewage fungus

Answer:



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79. What is a genetic code?

- A. GUG

B. AUG

C. AGG

D. UAA

Answer:



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80. Entero coelomate invertebrates belong to

A. Annelida

B. Echinodermata

C. Arthropoda

D. Mollusca

Answer:



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81. Menstruation is triggered by an abrupt decline in amount of a hormone secreted by

- A. Corpus luteum
- B. Pituitary gland
- C. Primary follicle
- D. All of these

Answer:

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82. The cranial nerve that is not related to movement of eyeball as it does not innervate muscles attaching eyeball to orbit

A. Abducens

B. Trochlear

C. Optic

D. Oculomotor

Answer:



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83. Out of 64 codons, 61 codons codes for 20 types of amino acids

A. Overlapping of genes

B. Universality of codons

C. Degeneracy of codons

D. Wobbling of codons

Answer:

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84. BOD of a eutrophic lake will be

- A. Moderate
- B. Higher
- C. Lower
- D. Can not say

Answer:

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85. The blood group in which both antigens (A and B) present on both surface of RBC is

- A. O
- B. A
- C. B
- D. AB

Answer:



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86. Stele in flowering plants is all tissues on the inner side of the

- A. Pericycle
- B. Endodermis

C. Vascular cambium

D. Cork cambium

Answer:

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87. The site of perception of *light / dark* in the plants are

A. Shoot apices

B. Flowering apices

C. Leaves

D. Meristems

Answer:

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88. The trophoblastic cells secrete

A. HCG

B. HPL

C. LH

D. Progesterone

Answer:



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89. Peripatus is a connecting link between :

A. Ctenophora and platyhelminthes

B. Mollusca and Echinodermata

C. Annelida and Arthropoda

D. Coelenterata and Porifera

Answer:

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90. The first transgenic crop was

A. Wheat

B. Maize

C. Tobacco

D. Pea

Answer:

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