



# BIOLOGY

## BOOKS - SARAS PUBLICATION

### STRUCTURAL ORGANISATION IN ANIMALS AND PLANTS

#### Example

1. Which of the following pairs are correctly matched ?

Animals

Morphological  
features

A) Crocodile - 4 - Chambered

B) Sea Urchin - Parapodia

C) Obelia - Metagenesis

D) Lemur - Thecodont

A. Only A and B

B. A,C and D

C. B, C and D

D. Only A and D

**Answer:**



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2. What is common between parrot, platypus and kangaroo?

A. Oviparity

B. Homoiothermy

C. Toothless jaws

D. Functional post - anal tail

**Answer:**



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3. What is true about Nersis, Scorpion, Cockroaches Silverfish?

- A. They all belong to the same phylum
- B. They all have joined paired appendages
- C. They all possess dorsal heart
- D. None of them is aquatic

**Answer:**



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4. Passage cells are thin-walled cells found in

A. Central region of style through which the pollen tube grows towards the ovary.

B. endodermis of roots facilitating rapid transport of water from cortex to pericycle

C. phloem elements that serve as entry points for substance for transport to other plant parts

D. testa of seeds to enable emergence of growing embryonic axis during seed germination.

**Answer:**



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5. The population of an insect species shows an explosive increase in numbers during rainy season followed by its disappearance at all the end of the season. What does this show?

- A. The population of its predators increase enormously
- B. S - shaped or sigmoid growth of this insect.
- C. The food plants mature and die at the end of the rainy season
- D. Its population growth curve is of J - type

**Answer:**



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6. The fleshy receptacle of syconus of fig encloses a number of:

A. Achenes

B. Samaras

C. Berries

D. Mericarps

**Answer:**



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7. Unisexuality of flower prevents:

- A. autogamy, but not geitonogamy
- B. both geitonogamy and xenogamy
- C. geitonogamy, but not xenogamy
- D. autogamy and geitonogamy

**Answer:**



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8. The length of different internodes in a culm of sugarcane is variable because of

A. shoot apical meristem

B. position of axillary buds

C. size of leaf lamina at the node below  
each internodes

D. intercalary meristem

**Answer:**



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9. Carbohydrates are commonly found as starch in plant storage organs. Which of the following five properties of starch (a - e) make it useful as a storage material?

- a) easily translocated
  - b) chemically non - reactive
  - c) easily digested by animals
  - d) osmotically inactive
  - e) synthesized during photosynthesis
- The useful properties are:

A. (b) and (c)

B. (b) and (d)

C. (a), (c) and (e)

D. (a) and (e)

**Answer:**



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**10.** Replum is present in the ovary of flower of :

A. Lemon

B. Mustard

C. Sun flower

D. Pea

**Answer:**



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**11.** Earthworms have no skeleton but during burrowing, the anterior end becomes turgid and acts as a hydraulic skeleton. It is due to:

- A. Coelomic fluid
- B. Blood
- C. Gut peristalsis
- D. Setae

**Answer:**



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**12.** Which one of the following is the true description about an animal concered?

A. Earthworm-The alimentary canal consist  
of a sequence of pharynx, gizzard and  
intestine

B. Frog - Body divisible into three regions -

head, neck and trunk

C. Rat - Left kidney is slightly higher in

position than the right one.

D. Cockroach - 10 pairs of spiracles (2 pairs

on thorax and 8 pairs on abdomen)

**Answer:**



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13. Which one of the following groups of three animals each is correctly matched with their one characteristic morphological feature?

Animals	Morphological feature
1. Liver fluke, Sea anemone, Sea cucumber	- Bilateral symmetry
2. Centipede, Prawn, Sea urchin	- Jointed appendages
3. Scorpion, Spider, Cockroach	- Ventral nervous system
4. Cockroach, Locust, Taenia	- Metameric segmentation

A.

B.

C.

D.



**Answer:**



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**14. Ground tissue includes**

- A. All tissues internal to endodermis
- B. All tissues external to endodermis
- C. All tissues except epidermis and vascular bundles
- D. Epidermis and cortex

**Answer:**



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**15.** A fruit developed from hypanthodium inflorescence is called

A. Sorosis

B. Syconus

C. Caryopsis

D. Hesperidium

**Answer:**



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**16.** Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by the

- A. Absence of secondary phloem
- B. Presence of cortex
- C. Position of protoxylem
- D. Absence of secondary xylem

**Answer:**



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**17.** The annular and spirally thickened conducting elements generally develop in the protoxylem when the root or stem is

- A. elongating
- B. widening
- C. differentiating
- D. maturing

**Answer:**



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**18.** Cotyledons and testa respectively are edible parts in:

- A. walnut and tamarind
- B. french bean and coconut
- C. cashew nut and litchi
- D. groundnut and pomogranate

**Answer:**



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**19.** Palisade parenchyma is absent in the leaves  
of

A. Mustard

B. Soyabean

C. Gram

D. Sorghum

**Answer:**



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**20.** In barley stem, vascular bundles are

- A. closed and scattered
- B. open and in a ring
- C. open and radial
- D. open and scattered

**Answer:**



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21. In unilocular ovary with a single ovule the placentation is:

- A. Marginal
- B. Basal
- C. Free Central
- D. Axile

**Answer:**





22. Apomictic embryos in citrus arise from:

- A. Synergids
- B. Maternal sporophytic tissue in ovule
- C. Antipodals cells
- D. Diploid egg

**Answer:**



23. Keel is the characteristic feature of flower of

A. Gulmohur

B. Cassia

C. Calotropis

D. Bean

**Answer:**



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24. A common biocontrol agent for the control of plant diseases is:

- A. Baculovirus
- B. *Bacillus thuringiensis*
- C. Glomus
- D. Trichoderma

**Answer:**



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25. The scutellum observed in a grain of water or maize is comparable to which part of the seed in other monocotyledons?

- A. Cotyledon
- B. Endosperm
- C. Aleurone layer
- D. Plumule

**Answer:**



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26. Which one of the following kinds of animals are triploblastic?

A. Flat worms

B. Sponges

C. Ctenophores

D. Corals

**Answer:**



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27. Which one of the following statement about certain given animals is correct?

A. Roundworms (Aschelminthes) are pseudocoelomates.

B. Molluscs are acoelomates

C. Insects are pseudocoelomates

D. Flatworms (Platyhelminthes) are coelomates

**Answer:**



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28. The Eyes of the potato tuber are

A. Axillary buds

B. Root buds

C. Flower buds

D. Shoot buds

**Answer:**



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**29.** Which of the following have the highest number of species in nature?

A. Angiosperms

B. Fungi

C. Insects

D. Birds

**Answer:**



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30. The function of leghaemoglobin in the root nodules of legumes is

- A. Expression of nif gene
- B. Inhibition of nitrogenase activity
- C. Oxygen removal
- D. Nodule differentiation

**Answer:**



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**31. Ground tissue includes**

- A. All tissues internal to endodermis
- B. All tissues external to endodermis
- C. All tissues except epidermis and vascular bundles
- D. Epidermis and cortex

**Answer:**



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32. The cork cambium, cork and secondary coetex are collectively called

- A. Phellen
- B. Phelloderm
- C. Phellogen
- D. Periderm

**Answer:**



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33. Which one of the following is wrongly matched

A. Cassia- Imbricate aestivation

B. Root pressure - Guttation

C. Puccinia - Smut

D. Root - Exarch protoxylem

**Answer:**



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

A. Housefly - Musca, an order

B. Tiger - Tigeris, the species

C. Cuttlefish- Mollusca, a class

D. Humans - Primate, the family

**Answer:**



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**35.** Which of the following is correctly stated as happens in the common cockroach?

A. The food is ground by mandibles and gizzard

B. Malpighian tubules are excretory organ projecting out from the colon

C. Oxygen is transported by haemoglobin blood

D. Nitrogenous excretory product is urea

**Answer:**



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**36.** One very special feature in the earthworm *Pheretima* is that

A. It has a long dorsal tubular heart

B. Fertilisation of eggs occurs inside the  
body

C. The typhlosole greatly increase the effective absorption area of the digested food in the intestine

D. The S - shaped setae embedded in the integument are the defensive weapons used against the enemies

**Answer:**



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**37.** Uricotelic mode of passing out nitrogenous wastes is found in

A. Insects and Amphibians

B. Reptiles and Birds

C. Birds and Annelids

D. Amphibians and Reptiles

**Answer:**



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**38.** Compared to those of humans, the erythrocytes in frog are

- A. Without nucleus but with haemoglobin
- B. nucleated and with haemoglobin
- C. very much smaller and fewer
- D. nucleated and without haemoglobin

**Answer:**



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**39.** In which one of the following the genus name, its two characters and its phylum are not correctly matched, whereas the remaining three are correct

A. Genus name : Pila Two characters: (a)

Body Segmented. (b) Mouth with Radula

phylum : Mollusca

B. Genus name : Asterias Two characters:

(a) Spiny skinned (b) Water vascular

system phylum : Echinodermata

C. Genus name : Sycon Two characters: (a)

Pore bearing (b) Canal system Phylum :

Porifera

D. Genus name : Periplaneta Two

characters: (a) Jointed appendages (b)

Chitinous exoskeleton phylum :

Arthropoda

**Answer:**



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40. Which one of the following is correctly matched

A. Onion - Bulb

B. Ginger - Sucker

C. Chlamydomonas- Conidia

D. Yeast - Zoospores

**Answer:**



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**41. Closed vascular bundles lack**

- A. Ground tissue
- B. conjucutive tissue
- C. Cambium
- D. Pith

**Answer:**



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**42.** Vexillary aestivation is characteristic of the family

A. Fabaceae

B. Asteraceae

C. Solanaceae

D. Brassicaceae

**Answer:**



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**43.** Select the correct statement from the ones given below with respect to *Periplaneta americana*

A. Nervous system located dorsally, consist of segmentally arranged ganglia joined by a pair of longitudinal connective

B. Males bear a pair of short thread like anal styles

C. There are 16 very long Malphigian tubules present at the junctions of



midgut and hindgut

D. Grinding of food is carried out only by the mouth parts.

**Answer:**



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**44.** Match the name of the animals with one characteristics and the phylum class to which it belong

A. Petromyzon - Ectoparasite -

Cyclostomata

B. Ichthyophis - Terrestrial - Reptilia

C. Limulus - Body covered by chitinous  
exoskeleton - Pisces

D. Adamsia - Radially symmetrical - Porifera

**Answer:**



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**45.** Which of the following correctly matched with respect to their taxonomic classification?

A. Flying fish, cuttlefish silverfish, - Pisces

B. Centipede, millipede, spider, scorpion -  
Insecta

C. House fly, butterfly, tse-tse fly, silverfish -  
Insecta

D. Spiny anteater, sea urchin, sea cucumber  
- Echinodermata

**Answer:**



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**46.** Which group of animals belong to the same phylum?

- A. Malarial parasite, Amoeba, Mosquito
- B. Earthworm, Pinworm, Tapeworm
- C. Prawn, Scorpion, Locusta
- D. Sponge, Sea anemone, Starfish

**Answer:**



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**47.** What external changes are visible after the last moult of a cockroach nymph?

- A. Mandibles becomes harder
- B. Anal cerci develop
- C. Both fore wings and hind wings develop
- D. Labium develops

**Answer:**



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**48.** The common characteristics between tomato and potato will be maximum at the level of their

A. Genus

B. Family

C. Order

D. Division

**Answer:**



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**49.** Animal vectors are required for pollination  
in

A. Maize

B. Vallisneria

C. Mulberry

D. Cucumber

**Answer:**



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**50.** The characteristics of class Reptilia are:

- A. Body covered with dry and cornified skin, scales over the body are epidermal, they do not have external ears
- B. Body covered with moist skin which is devoid of scales, the ear is represented



by a typanum alimentary canal, urinary and reproductive tracts open into a common cloaca

C. Fresh water animals with bony endoskeleton, air - bladder to regulate buoyancy

D. Marine animals with cartilaginous endoske -leton, body covered with placoid scales

**Answer:**



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51. Which one of the following animals is correctly matched with its one characteristics and the taxon?

Animal	Characteristic	Taxon
1) Duck-billed platypus	Oviparous	Mammalian
2) Millipede	Ventral nerve cord	Arachnida
3) Sea Anemone	Triploblastic	Cnidaria
4) Silverfish	Pectoral and Pelvic fins	Chordata



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**52.** Select the correct option with respect to cockroaches

A. The fore wings are tegmina which are used in flight

B. Malpighian tubules convert nitrogenous wastes into urea

C. Males bear short anal styles not present in females

D. Nervous system comprises of a dorsal nerve cord and ten pairs of ganglion

**Answer:**



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**53.** Which one of the following is one of the paths followed by air /  $O_2$  during respiration in an adult male *Periplaneta americana* as it enters the animal body?

A. Hypopharynx, mouth, pharynx. Trachea, tissues

B. Spiracle in metathorax trachea, tracheoles, oxygen diffuses into cell

C. Mouth, bronchial tube, trachea, oxygen enters cell

D. Spiracles in prothorax, tracheoles, trachea, oxygen diffuses into cells

**Answer:**



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54. You given a fairly old piece of dicot stem and dicot root. Which of the following anatomical structures will you use to distinguish between the two?

- A. Secondary xylem
- B. Secondary phloem
- C. Protoxylem
- D. Cortical cells

**Answer:**



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**55.** An example of edible underground stem is

- A. Carrot
- B. Groundnut
- C. Sweet potato
- D. Potato

**Answer:**



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**56.** Dr. F. Went noted that if coleoptile were removed and placed on agar for one hour, the agar would produce a bending when placed on one side of freshly - cut - coleoptile stumps  
Of what significance is this experiment?

A. It made possible the isolation and exact identification of auxin

B. It is the basis for quantitative determination of small amounts of growth - promoting substances



C. It supports the hypothesis that IAA is auxin

D. It demonstrated polar movement of auxins

**Answer:**



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**57.** A major characteristic of the monocot root is the presence of

A. Open vascular bundles

B. Scattered vascular bundles

C. Vasculature without cambium

D. Cambium sandwiched between phloem  
and xylem along the radius

**Answer:**



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58. Which of the following characteristics is mainly responsible for diversification of insects on land?

- A. Segmentation
- B. Bilateral symmetry
- C. Exoskeleton
- D. Eyes

**Answer:**



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59. The terga, sterna and pleura of cockroach body are joined by

- A. Cementing glue
- B. Muscular tissue
- C. Arthroal membrane
- D. Cartilage

**Answer:**



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60. A gymnast is able to balance his body upside down even in the total darkness because of

- A. Cochlea
- B. Vestibular apparatus
- C. Tectorial membrane
- D. Organ of Corti

**Answer:**



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**61.** Which one of the following animals has two separate circulatory pathways?

A. Lizard

B. Whale

C. Shark

D. Frog

**Answer:**



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**62.** Outbreeding is an important strategy of animals husbandry because it:

A. is useful in producing pure lines of animals.

B. is useful in overcoming inbreeding depression

C. exposes harmful recessive genes that are eliminated by selection

D. help in accumulation of superior genes

**Answer:**



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**63.** The body cells in cockroach discharge their nitrogenous waste in the haemolymph mainly in the form of

- A. Potassium urate
- B. Urea
- C. Calcium carbonate
- D. Ammonia



**Answer:**



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**64.** Root pressure develops due to:

- A. Low osmotic potential in soil
- B. Passive absorption
- C. Increase in transpiration
- D. Active absorption

**Answer:**



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65. Which part of the tobacco plant is infected by plant is infected by *Meloidogyne incognita*?

A. Root

B. Flower

C. Leaf

D. Stem

**Answer:**



66. Which of the following characteristics features always hold true for the corresponding group of animals?

1) 3 - chambered heart with one incompletely divided ventricle	Reptilia
2) Cartilaginous endoskeleton	Chondrichthyes
3) Viviparous	Mammalia
4) Possess a mouth with an upper and a lower jaw	Chordata

A.

B.

C.

D.

**Answer:**



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**67.** Match the terms in Column I with their description in Column II and choose the correct option

Column I	Column II
(a) Dominance	(i) Many genes govern a single character
(b) Co-dominance	(ii) In a heterozygous organism only one allele expresses itself
(c) Pleiotropy	(iii) In a heterozygous organism both alleles express themselves fully
(d) Polygenic inheritance	(iv) A single gene influences many characters



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

A. Metamerically segmented body

B. Schizocoelom as body cavity

C. Indeterminate and radial cleavage during embryonic development

D. Exoskeleton composed of N-acetylglucosamine

**Answer:**





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69. In mammals, which blood vessel would normally carry largest amount of urea?

A. Hepatic Portal Vein

B. Renal Vein

C. Dorsal Aorta

D. Hepatic Vein

**Answer:**



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70. which of the following is not a stem modification?

A. Flattened structures of Opuntia

B. Pitcher of Nepenthes

C. Thorns of citrus

D. Tendrils of cucumber

**Answer:**



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71. Stems modified into flat green organs performing the functions of leaves are known as

A. Scales

B. Cladodes

C. Phyllodes

D. Phylloclades

**Answer:**



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72. In higher vertebrates, the immune system can distinguish self - cells and non - self, If this property is lost due to genetic abnormality and it attacks self - cells, then it leads to:

- A. Active immunity
- B. Allergic response
- C. Graft rejection
- D. Auto - immune disease

**Answer:**



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**73.** Which one of the following characteristic is not shared by birds and mammals?

- A. Warm blooded nature
- B. Ossified endoskeleton
- C. Breathing using lungs
- D. Viviparity

**Answer:**



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74. Conifers are adapted to tolerate extreme environmental conditions because of

- A. thick cuticle
- B. presence of vessels
- C. broad hardy leaves
- D. superficial stomata

**Answer:**



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75. Cortex is the region found between

- A. Endodermis and pith
- B. endodermis and vascular bundle
- C. Epidermis and stele
- D. Pericycle and endodermis

**Answer:**



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**76.** Select the mismatch:

A. Protists - Eukaryotes

B. Methanogens- Prokaryotes

C. Gas vacuoles - Green bacterial

D. Large central vacuoles - Animals cells

**Answer:**



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77. 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?

- A. Auxin and abscisic acid
- B. Gibberellin and abscisic acid
- C. IAA and gibberellin
- D. Auxin and cytokinin

**Answer:**



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78. Which is essential for the growth of root tip ?

A. Ca

B. Mn

C. Zn

D. Fe

**Answer:**



79. Which one of the following is not correct?

A. In potato, banana and ginger, the plantlets arise from the internodes present in the modified stem.

B. Water hyacinth, growing in the standing water, drains oxygen from water that leads to the death of fishes



C. Offspring produced by the asexual reproduction are called clone

D. Microscopic, motile asexual reproductive structures are called zoospores

**Answer:**



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**80.** Choose the correct statement:

A. All reptiles have a three - chambered heart

B. All pisces have gills covered by an operculum

C. All mammals are viviparous

D. All cyclostomes do not possess jaws and paired fins

**Answer:**



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**81.** In male cockroaches, sperms are stored in which part of the reproductive system?

A. Testes

B. Vas deferens

C. Seminal vesicles

D. Mushroom glands

**Answer:**



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82. When cell has stopped DNA replicated fork,  
Which checpoint should be perdominantly  
activated?

A. M

B. Both  $G_2 / M$  and M

C.  $G_1 / S$

D.  $G_2 / M$

**Answer:**



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**83.** Attractants and rewards are required for

.....

A. Entomophily

B. Hydrophily

C. Cleistogamy

D. Anemophily

**Answer:**



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**84.** The vascular cambium normally gives rise to

- A. Primary phloem
- B. Secondary xylem
- C. Periderm
- D. Phelloderm

**Answer:**



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**85.** In *Bougainvillea* thorns are the modification of

A. Adventitious root

B. Stem

C. Leaf

D. Stipules

**Answer:**



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**86.** Which of the following is made up of dead cells ?

A. Collenchyma

B. Phellem

C. phloem

D. xylem parenchyma

**Answer:**



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**87.** Among the following characters which one was not considered by Mendel in his experimentation pea ?

A. Trichomes - Glandular or non - glandular

B. Seed - Green or yellow

C. Pod-Infatedor Constricted

D. Stem - Tall or Dwarf

**Answer:**



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**88.** Which one from those given below is the period for Mendel's hybridization experiments?

A. 1840 - 1850

B. 1857 - 1869

C. 1870 - 1877

D. 1856 - 1863

**Answer:**



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