



# BIOLOGY

## BOOKS - MTG IIT JEE FOUNDATION

### DIVERSITY IN LIVING ORGANISMS

#### Illustrations

1. Why do we classify organisms?



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2. Give three examples of the range of variations that you see in life forms around you.



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3. Which do you think is a more basic characteristic for classifying organisms?

(a) The place where they live.

(b) The kind of cells they are made of. Why?



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4. In the hierarchy of classification, which grouping will have the smallest number of organisms with maximum common characteristics and which will have the largest number of organisms?



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5. On what bases are plants and animals put into different categories?



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6. Which organisms are called primitive and how are they different from the so-called advanced organisms?



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7. Will advanced organisms be the same as complex organisms? Why?



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**8.** What do you mean by biodiversity? What are the various ways of measuring biodiversity?



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**9.** Define taxonomy.



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**10.** What convention are followed while writing the scientific names ?



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**11.** Why is binomial nomenclature called so?



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**12.** What are the four factors of Whittaker's scheme of classification?



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**13.** What is the criterion for classification of organisms as belonging to kingdom Monera or Protista?



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**14.** In which kingdom will you place an organism which is single-celled, eukaryotic and photosynthetic?





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**15.** Give two basic differences between byrophytes and pteriophytes .



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**16.** Mention the differences between gymnosperms and angiosperms.



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**17.** Which division among plants has the simplest organisms?



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**18.** How do gymnosperms and angiosperms differ from each other?



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**19.** How are pteridophytes different from the phanerogams?



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20. List two peculiar characters of Phylum Echinodermata.



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21. What are cnidoblasts ?



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**22.** How do poriferan animals differ from coelenterate animals?



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**23.** How do annelid animals differ from arthropods?



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**24.** Give the scientific names of the following organisms.

Frog, Cockroach, Earthworm, Lion, Tiger,  
Mango and Man



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**25.** Differentiate between lizards and snakes.



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**26.** What are the differences between amphibians and reptiles?



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**27.** What are the differences between animals belonging to the Aves group and those in the mammalia group?



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1. One important phylum of kingdom-Animalia of two kingdom system was removed and placed in kingdom Protista of 5 Kingdom system. Name this phylum and give important features.



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2. A, B and C are three plants. A bears seeds but no fruits. B bears sporangia arranged in sori and the plant body of C is gametophyte

and has no vascular tissue. Identify the groups to which these plants belong.



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3. Why are the protozoan placed in Kingdom Protista and not in Kingdom Animalia?



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4. Which group - Pisces or Amphibia is advanced? Give two reasons.



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5. A student soaks some seeds of green gram, wheat, maize, peas and tamarind in water overnight. Next morning, he tries to split the seeds. Can he split all the seeds in two nearly equal halves? What can be conclude from this activity?



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6. Why are whales not grouped in fishes?



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7. Why is Euglena is called plant-animal ?



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**Ncert Section**

1. What are the advantages of classifying organisms ?



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2. How would you choose between two characteristics to be used for developing a hierarchy in classification ?



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**3.** Explain the basis for grouping organisms into five kingdoms.



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**4.** What are the major divisions in the Plantae ?  
What is the basis for these divisions ?



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5. How are the criteria for deciding divisions in plants different from the criteria for deciding the subgroups among animals ?



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6. Explain how animals in Vertebrata are classified into further subgroups.



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1. Which group of animals belong to the same phylum?

A. Palamnaeus, Pila, Limax

B. Tubifex, Nereis, Aphrodite

C. Ascaris, Dugesia, Ancylostoma

D. Sycon, Hydra, Obelia

**Answer: B**



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2. Which of the following is respiratory organ of Sepia?

A. Ctenidia

B. Gills

C. Tracheae

D. Book lungs

**Answer: A**



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3. five kingdom system of classification suggested by R.H whittaker is not based on
- A. presence or absence of a well defined nucleus
  - B. mode of reproduction
  - C. mode of nutrition
  - D. complexity of body organisation.

**Answer: B**



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4. Which of the following is not a criterion for classification of living organisms?

- A. Cells are prokaryotic or eukaryotic
- B. Cells occur singly or in cluster
- C. Organisation of different body parts
- D. All of these

**Answer: D**



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5. Which is the most commonly used classification scheme?

- A. Linnaeus's five kingdom scheme
- B. Whittaker's five kingdom scheme
- C. Darwin's five kingdom scheme
- D. Hooke's five kingdom scheme

**Answer: B**



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6. Organisms in the Kingdom Animalia are

A. multicellular and heterotrophic

B. multicellular and autotrophic

C. unicellular and autotrophic

D. unicellular and heterotrophic.

**Answer: A**



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7. Scientific name of an organism contains its

A. family and species

B. genus and species

C. phylum and order

D. class and family.

**Answer: B**



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8. The levels in classification are called

A. families

B. taxa

C. orders

D. kingdoms

**Answer: B**



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9. The sequence of taxa in the animal kingdom is

A. kingdom, phylum, class, order, family, species and genus

B. kingdom, phylum, class, order, family, genus and species

C. kingdom, phylum, class, family, order, species and genus

D. phylum, kingdom, class, family, order,  
genus and species.

**Answer: B**



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**10.** The plants which have naked seeds belong  
to the group

A. angiosperms

B. cryptogams

C. gymnosperms

D. thallophytes

**Answer: C**



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**11.** Nerve cord is \_\_\_\_\_ in invertebrates.

A. dorsal

B. lateral

C. ventral

D. absent

**Answer: C**



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**12.** Water vascular system is a distinctive feature of

A. Echinodermata

B. Annelida

C. Chordata



D. Mollusca

**Answer: A**



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**13.** The coelom in arthropods is reduced and known as 'haemocoel' because

A. coelomic fluid flows in the blood vessel

B. blood flows in the blood vessels present

in the coelom

C. coelom is filled with haemoglobin

D. blood flows in the coelom.

**Answer: D**



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**14.** Who among the following is called the "Father of taxonomy"?

A. Aristotle

B. Carolus Linnaeus

C. John Ray

D. Theophrastus

**Answer: B**



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**15.** In a hierarchial scheme of taxonomic classification, the category just below the order is

A. family

B. genus

C. phylum

D. class

**Answer: A**



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**16.** Algae can be described as

A. autotrophic and photosynthetic

B. autotrophic and chemosynthetic

C. heterotrophic and photosynthetic

D. heterotrophic and chemosynthetic.

**Answer: A**



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**17.** Which of the following is the common 'black bread mould' fungus?

A. *Aspergillus*

B. *Mucor*

C. Rhizopus

D. Neurospora

**Answer: C**



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**18. Pneumatic bones are found in :**

A. insects

B. birds

C. snakes

D. whales

**Answer: B**



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**19.** Which of the following is the use of lichens in case of pollution?

A. They treat the polluted water.

B. They act as bioindicators of air pollution.

C. They promote pollution.

D. Lichens are not related with pollution.

**Answer: B**



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**20.** Bryophyta acts as connecting link between

A. Thallophyta and Pteridophyta

B. Algae and Fungi

C. Pteridophyta and Gymnosperms

D. terrestrial fungi and aquatic fungi



**Answer: A**



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**21. Unicellular eukaryotic organisms are included in**

A. Monera

B. Protista

C. Fungi

D. Plantae

**Answer: B**



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**22.** In which of the following groups chlorophyll is not present?

A. Algae

B. Fungi

C. Bryophyta

D. Pteridophyta

**Answer: B**



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**23.** Which of the following is not the feature of Phylum Mollusca?

- A. Muscular foot
- B. Soft unsegmented body
- C. Calcareous shell
- D. Jointed legs

**Answer: D**



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**24.** The branch of biology dealing with classification is known as

- A. physiology
- B. taxonomy
- C. palaeontology
- D. mycology

**Answer: B**



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**25.** One of the following groups have organisms having perforated body.

A. Coelenterates

B. Molluscs

C. Echinodermata

D. Porifera

**Answer: D**



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**26. Which among the following have scales?**

(i) Amphibians (ii) Pisces

(iii) Reptiles (iv) Mammals

A. (i) and (iii)

B. (iii) and (iv)

C. (ii) and (iii)

D. (i) and (ii)

**Answer: C**



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**27.** The locomotory organs of Echinodermata are

- A. tube feet
- B. muscular feet
- C. jointed legs
- D. parapodia

**Answer: A**



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**28.** Which of the following pairs belong to the category of cold blooded animals?

- A. Snakes and birds
- B. Bat and rats
- C. Frog and snakes
- D. Birds and monkey



**Answer: C**



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**29.** The presence of feathers and power of flight are characteristic feature of

A. mammals

B. reptiles

C. Aves

D. amphibians

**Answer: C**



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**30.** A completely four-chambered heart is present in

A. frog

B. crocodile

C. shark

D. lizard

**Answer: B**



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## Exercise Mcq Level 2

1. Locomotive structures found in some protists include

A. muscles

B. flagella

C. tentacles

D. contractile vacuoles.

**Answer: B**



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2. The Linnaean system of classification uses which one among the following as the basis of organism classification?

A. Leaf anatomy

B. Flower colour

C. Sexual organs

D. Stem and root structure

**Answer: C**



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**3. Which of the following are characteristics of both bacteria and fungi?**

A. Cell wall, unicellular and mitochondria

B. Cell wall, DNA, and plasma membrane

C. Plasma membrane, multicellularity, and

Golgi apparatus

D. Nucleus, organelles and unicellularity

**Answer: B**



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**4. Vascular and mechanical tissue is absent in**

A. Bryophyta

B. Pteridophyta

C. Gymnosperms

D. Angiosperms

**Answer: A**



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**5. The most primitive vascular plants are**

A. Cycas

B. ferns

C. moss

D. brown algae

**Answer: B**



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**6. Motile sperms are absent in**

A. Rhizopus

B. Funaria

C. ferns

D. Cycas



**Answer: A**



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7. In which of the following groups would you place a plant which produces spores and embryos but lacks seeds and vascular tissue.

A. Fungi

B. Pteridophytes

C. Bryophytes

D. Gymnosperms

**Answer: C**



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**8.** Diploblastic, aquatic animals with tissue level of organisation belong to the Phylum

A. Protozoa

B. Porifera

C. Cnidaria

D. Helminthes

**Answer: C**



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**9. Which fish has an electric organ?**

A. Pristis

B. Torpedo

C. Scoliodon

D. Anabas

**Answer: B**



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**10.** Binomial system of nomenclature means that every organism has

A. two names one scientific and the other popular

B. one name given by two scientists

C. one scientific name consisting of a generic and specific name

D. a number in an international catalogue  
by which it can be identified

**Answer: C**



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**11. True roots are absent in**

A. bryophytes

B. pteridophytes

C. gymnosperms

D. angiosperms

**Answer: A**



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**12.** Body cylindrical, divided into ring like segments, with coelom and digestive system are characteristics of Phylum

A. Coelenterata

B. Arthropoda

C. Annelida

D. Mollusca

**Answer: C**



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**13.** Which among the following has specialised tissue for conduction of water?

A. (i) and (ii) only

B. (ii) and (iii) only

C. (iii) and (iv) only

D. (i) and (iv) only

**Answer: C**



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**14.** Which among the following have open circulatory system?

(i) Periplaneta

(ii) Limax



(iii) Pheretima

(iv) Hydra

A. (i) and (ii) only

B. (iii) and (iv) only

C. (i) and (iii) only

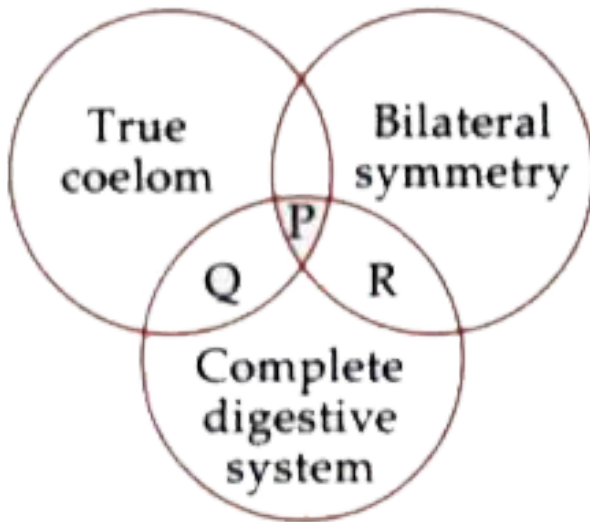
D. (ii) and (iv) only

**Answer: A**



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15. Refer to the given Venn diagram and select the correct statement regarding P, Q and R.



A. R could be *Enterobius* which is parasitic in nature.

B. P could be *Planaria* which shows well marked regeneration power.

C. Q could be Ascaris that excretes through renette cells.

D. All of these

**Answer: A**



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**16.** Organisms having cells without nuclear envelope and cell organelles belong to

(i) Fungi

(ii) Protista

(iii) Cyanobacteria

(iv) Archaeobacteria

A. (i) and (ii) only

B. (iii) and (iv) only

C. (i) and (iv) only

D. (ii) and (iii) only

**Answer: B**



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17. The feature that is not a characteristic of protochordata?

- A. presence of notochord
- B. bilateral symmetry and coelom
- C. lateral gill slits
- D. presence of circulatory system.

**Answer: C**



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**18.** Meena and Hari observed an animal in their garden. Hari called it an insect while Meena said it was an earthworm. Choose the character from the following which confirms that it is an insect.

- A. Body metamerically segmented
- B. Body with jointed legs
- C. Body enclosed in calcareous shell
- D. Body soft and unsegmented

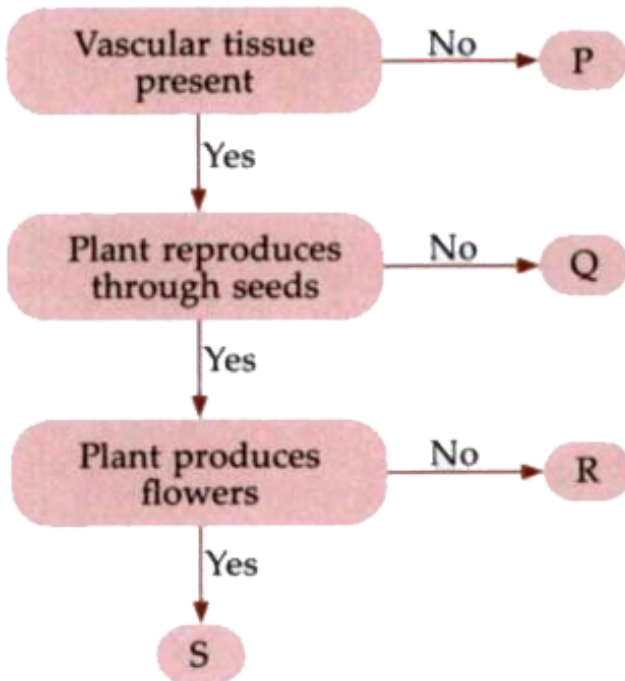
**Answer: B**





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19. Refer to the given flow chart.



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20. Which of the following is a chordate feature, not shared by the non-chordates?

- A. Pharyngeal gill slits
- B. Bilateral symmetry
- C. Metamerism
- D. Tissue level organisation

**Answer: A**



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1. Assertion : Euglena possesses characteristics of both plant and animal.

Reason : Euglena is a genus of unicellular protist.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: B**



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**2. Assertion :** Organisms are named according to binomial nomenclature.

**Reason :** Names consist of two words-one scientific and other vernacular.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: C**



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**3. Assertion :** Fungal cells have eukaryotic structure.

**Reason :** They lack plastids.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: B**



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**4. Assertion :** Sponges are multicellular.

**Reason :** Sponges have tissue level of organisation.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: C**



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**5. Assertion :** Metamerism is the characteristic of annelida

**Reason :** Metamerism is one type of body segmentation

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: B**



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**6. Assertion :** Tube feet are characteristic organs of Echinodermata.

**Reason :** Tube feet play an important role in reproduction.



A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: C**



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7. Assertion : Amphioxus has a simple organization compared to vertebrates.

Reason : Many important craniate structure are lacking in Amphioxus.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: A**



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**8. Assertion :** Amphibians are warm blooded animals.

**Reason :** Amphibians never undergo summer sleep.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: D**



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**9. Assertion :** All bryophytes are called as amphibians of plant kingdom.

**Reason :** Water is necessary to complete their life-cycle.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of

assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: A**



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**10. Assertion:** Gymnosperms seeds are naked.

**Reason:** They lack ovary wall.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both assertion and reason are false.

**Answer: A**



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## Exercise Very Short Answer Type

1. Name the spore producing leaves of pteridophytes.



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2. Which of the following group of plants is called vascular cryptogams ?



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3. which substances form cell wall in fungi?



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4. Viruses are placed in which kingdom?



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5. What is a common feature between amphibians and insects ?



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6. Which group of animals are called flat worms?



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7. Define a species



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8. What are phanerogams ?



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9. What is the fate of notochord in higher chordates?



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10. Write two characteristic features of pisces.



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**11.** What is the two-kingdom system of classification?

Name the scientist who has given this system.



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**12.** Give two salient features of Kingdom fungi.



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**13.** Define the term hermaphrodite. Give two examples.



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**14.** What do you mean by triploblastic organisms? Give two examples of triploblastic organisms.



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15. What is binomial nomenclature. Who proposed this nomenclature?



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## Exercise Short Answer Type

1. Why are bryophytes called 'amphibians of the plant world'?



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2. Why are protozoa are regarded as early animals ?



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3. Why are protozoans placed in Kingdom Protista and not in Kingdom Animalia?



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4. What are angiosperms ?





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**5. What is bilateral symmetry ?**



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**6. What is the meaning of "ectothermal animal"?**



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7. Give the differences between thallophyta and bryophyta.



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8. Give the differences between two types of symmetry that animals show.



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**9.** Classify the following organisms based on absence of true coelom as acoelomate, pseudocoelomate, and coelomate : Spongilla, Sea anemone, Planaria, Liver fluke, Wucherria, Ascaris, Nereis, Earthworm, Scorpion, Birds, Fishes and Horse



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**10.** Classify The following based on number of chambers in their heart. Rohu, sociodon,

From, Salamander, Flying lizard , King Cobra,  
Crocodile, Ostrich, Pigeon, Bat, Whale.



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**11.** Differentiate between flying lizard and bird.



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**Exercise Short Answer Type Fill In The Blanks**

1. Bilateral, dorsiventral symmetry is found in

\_\_\_\_\_ .



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2. Worms causing disease elephantiasis is

\_\_\_\_\_ .



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3. Open circulatory system is found in \_\_\_\_\_  
where coelomic cavity is filled with blood.



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4. \_\_\_\_\_ are known to have pseudocoelom.



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**Exercise Long Answer Type**

1. Mention five peculiar features of each of Class Mammalia and Class Amphibia.



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2. Write four important features that all chordates possess.



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3. Write one characteristic each of amphibia and aves.



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4. Write the name of the class to which following belong:

(a) Sea horse

(b) King cobra.



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5. Define classification. Give any two of its significance.



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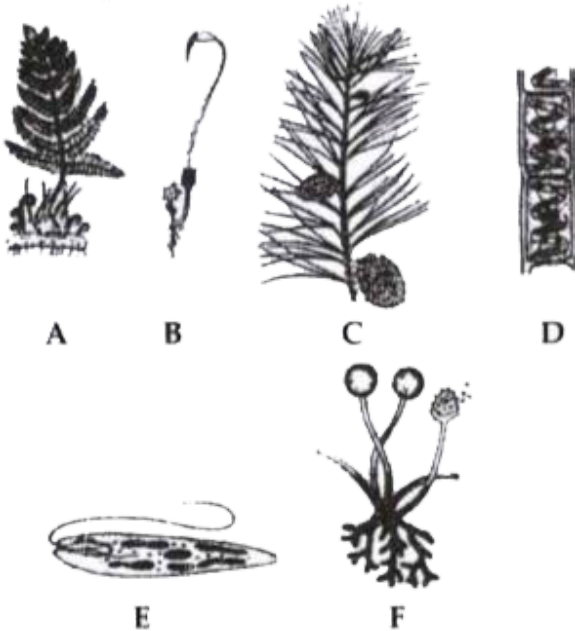
6. Classify the following plants into different plant divisions: Spirogyra, fern, Funaria, Pinus, apple tree and mustard plant.



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7. Refer to the following figures and answer the questions given below:

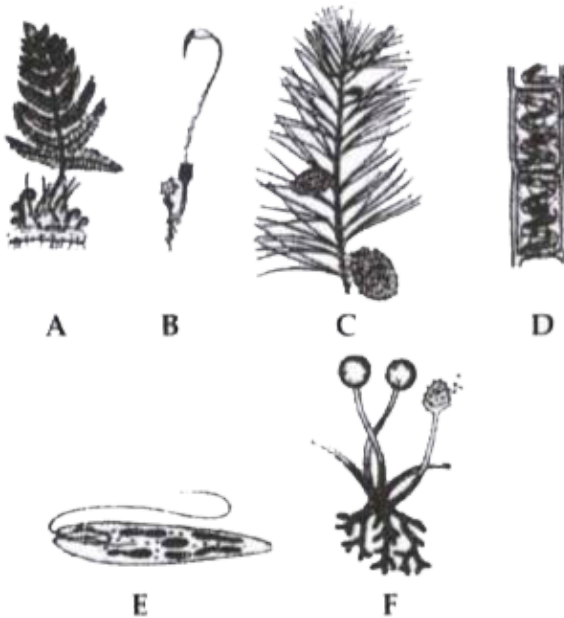


Identify figures A to F.



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8. Refer to the following figures and answer the questions given below:

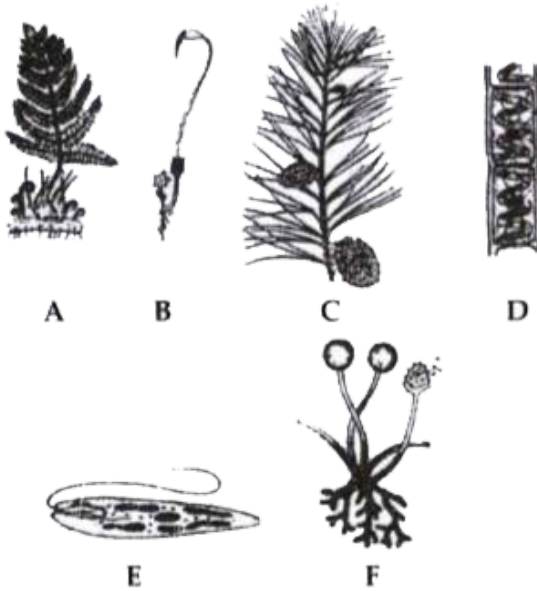


Which one is unicellular and eukaryotic organism?



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9. Refer to the following figures and answer the questions given below:

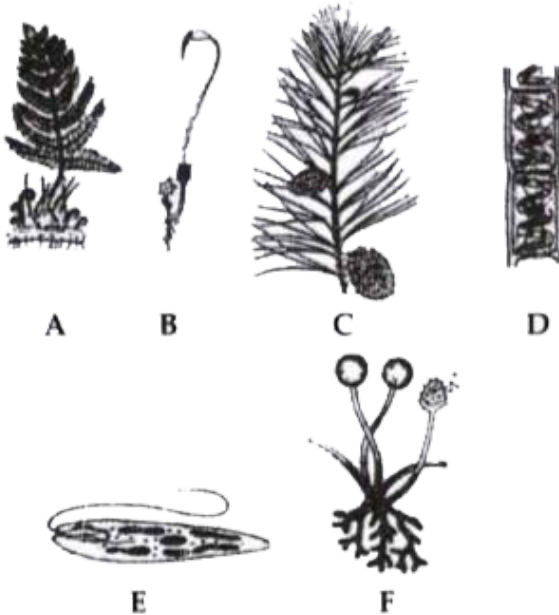


Which one shows: (a) heterotrophic nutrition  
(b) mixotrophic nutrition?



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10. Refer to the following figures and answer the questions given below:

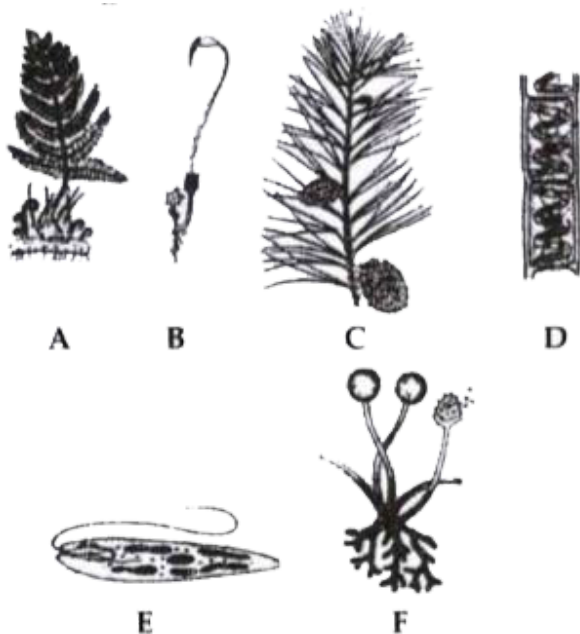


Which one is non-vascular embryophyte?



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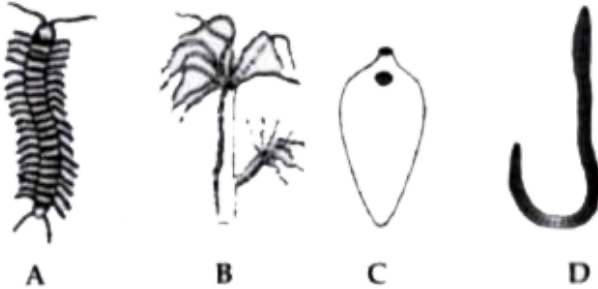
11. Refer to the following figures and answer the questions given below:



In which of these, xylem lacks vessels while phloem is devoid of companion cells?

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**12.** Refer to the following figures and answer the questions given:



Identify figures A to D.

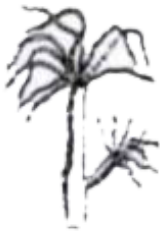


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**13.** Refer to the following figures and answer the questions given:



A



B



C



D

Which one belongs to

(a) Platyhelminthes

(b) Arthropoda

(c) Annelida?

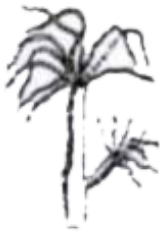


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**14.** Refer to the following figures and answer the questions given:



A



B



C



D

Which one has tissue level organisation?



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**15.** Refer to the following figures and answer the questions given:





A



B



C



D

Which one of them has poison claw?



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**16.** Refer to the following figures and answer the questions given:



A



B



C



D

Which one is

(a) Diploblastic,

(b) Triploblastic?



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17. Who proposed binomial nomenclature ?



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18. What are cryptogams and phanerogams?



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**19.** Which phyla have the following characteristics? (state only their names).

(a) Body segmented and jointed legs, with compound eyes.

(b) Body unicellular and microscopic.

(c) Body having calcareous shell and ventral foot.

(d) Spiny skinned organisms.



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20. What are fungi? Name two fungi. What is the composition of cell wall of fungi?



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21. Mention the characteristics of fungi.



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22. What are the similarities in the body of animal belonging to platyhelminthes and nematoda?



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**23.** Name the excretory organs in Platyhelminthes.



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**24.** Which nematodes are present in human intestine?



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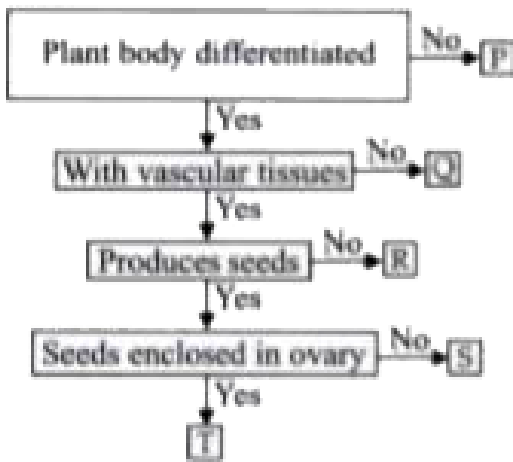
25. Give two examples of nematodes.



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## Olympiad Hots Corner

1. Refer to the given flow chart and identify P, Q, R, S and T.



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2. Select the option which correctly identifies

P-T.

Phylum/ Class	Excretory organ	Circulatory system	Respiratory organ
Arthropoda	P	Q	Book lungs/ Gills/Tracheal system
R	Nephridia	Closed	Skin
S	Nephridia	Open	T



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3. The given table represents differences between bryophytes and pteridophytes. Identify the correct ones.



S.No.	Bryophytes	Pteridophytes
(i)	Main plant body is sporophytic (diploid).	Main plant body is gametophytic (haploid).
(ii)	Plant body is either thalloid or foliose, however, true stem, leaves and roots are absent.	Plant body is differentiated into true roots, stem and leaves.

(iii)	Plant is fixed to the substratum by roots.	Plant is fixed to the substratum by rhizoids.
(iv)	Sporophyte is parasitic over gametophytic plant body.	It has small, independent gametophyte.
(v)	These are non-vascular plants.	These are vascular plants.

A. I and II only

B. II and IV only

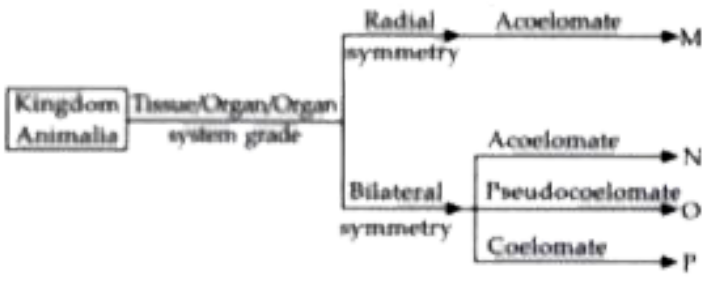
C. I, II and IV only

D. II, IV and V only

Answer: D

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4. Identify M-P in the given flow chart and select the correct statement regarding them.



A. M could be Obelia whereas N could be Sycon.

B. N could be Fasciola whereas O could be Ancylostoma.

C. M could be Pheretima whereas P could be Chiton.

D. P could be Taenia whereas O could be Ascaris.

**Answer: B**



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5. Select the pair that shows the same relationship as the animals in the box.

*Amoeba* : *Paramecium*

A. *Rhizopus* : *Chlamydomonas*

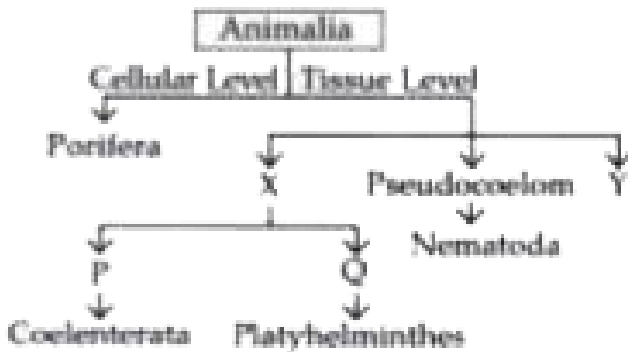
B. *Candida* : *Saccharomyces*

C. *Pteridium* : *Fasciola*

D. *Albugo* : *Adiantum*

**Answer: B**

6. Riddhi drew a classification chart as shown below.



Now, select the option that correctly identifies the characters X, Y, P or Q.

A. X is eucoelomic body cavity.

B. P is bilateral body symmetry.

C. Q is radial body symmetry.

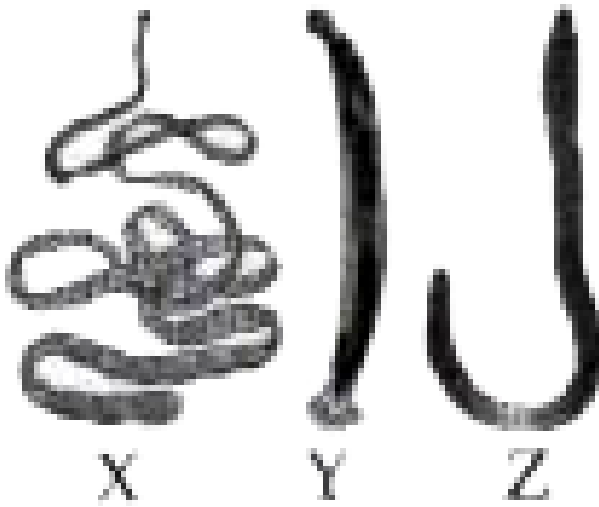
D. Y is coelomic cavity lined by mesoderm.

**Answer: D**



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7. Refer to the given figures of different animals. Read the characteristics given below and select the option that correctly matches these animals with their characteristics stated.



- (i) Coelom absent
- (ii) Pseudocoelom present
- (iii) True coelom present
- (iv) Triploblastic animal
- (v) Flame cells as excretory organs
- (vi) Body metamerically segmented
- (vii) Nephridia are excretory organs

A. X-(i, vi, vii), Y-(ii, iv, vi), Z-(iii, v, vi)

B. X-(i, iv, v), Y-(ii, iv), Z-(iii, iv, vi, vii)

C. X-(ii, iv, vi), Y-(i, v, vii), Z-(iii, iv, v)

D. X-(iii, vi), Y-(ii, iv, vii), Z-(i, v)

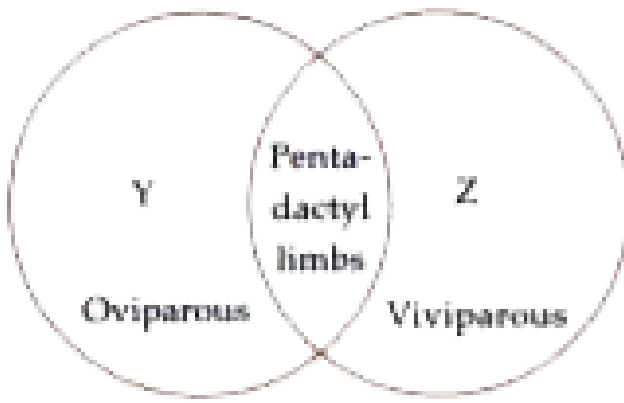
**Answer: B**



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**8.** Refer to the given Venn diagram and select the correct option regarding Y and Z.





- A. Y can be lizard and Z can be tiger.
- B. Y can be bat and Z can be ostrich.
- C. Y can be snake and Z can be emu.
- D. Y can be crocodile and Z can be frog.

**Answer: A**



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**9.** Refer to the given dichotomous key and select the correct option regarding P, Q, R, S and T.

I. (a) Genetic material is not enclosed in nucleus. - Go to II

(b) Genetic material is enclosed in nucleus. - Go to III

II. (a) Lacks cell wall. - P

(b) Possesses cell wall. - Q

III. (a) Unicellular organism - R

(b) Multicellular organism - Go to IV

IV. (a) Plant body is sporophytic and water is required for fertilisation. - S

(b) Plant body is sporophytic and water is not required for fertilisation. - T

A. P is motile whereas Q is non-motile.

B. R could be yeast or Chlamydomonas.

C. Both S and T produce seeds for propagation of their species.

D. S could be Adiantum whereas T could be Riccia.

**Answer: B**



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**10.** Which of the following characteristics cannot be used in grouping and sub-grouping of organisms?

- (i) Cells are prokaryotic or eukaryotic
- (ii) Presence or absence of mitochondria
- (iii) Number of cells in an organisms
- (iv) Mode of nutrition
- (v) Level of organisation in body

(vi) Organisms are nocturnal or diurnal

(vii) Organisms are oviparous or viviparous

A. (i), (iii), (iv) and (v)

B. (ii), (vi) and (vii)

C. (iii) and (vii)

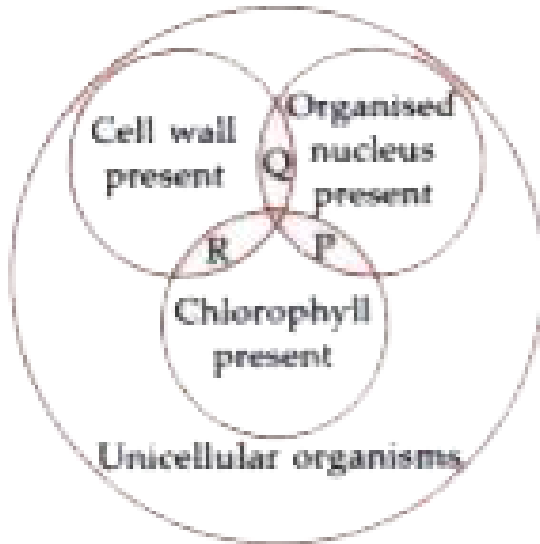
D. None of these

**Answer: D**



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11. Refer to the given Venn diagram showing three organisms P, Q and R.



Which of the following statements hold true regarding P, Q and R?

- (i) Chlamydomonas is shown as R.
- (ii) Yeast is shown as Q.
- (iii) Euglena is shown as P.

(iv) Organisms R and P form symbiotic association called lichen.

A. (i), (ii) and (iii)

B. (i), (ii) and (iv)

C. (iii) and (iv)

D. (ii) and (iii)

**Answer: D**



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**12.** Following are some characteristics of the three divisions of kingdom Plantae :  
Thallophyta, Bryophyta and Pteridophyta.

1. Sex organs are multicellular
2. Essentially terrestrial
3. Non-vascular
4. Lack true leaves and roots
5. Embryo formed after fertilisation
6. Photoautotrophs
7. Examples are Lycopodium, Equisetum, Azolla, Marsilea.
8. Examples are Marchantia, Funaria and Riccia.



9. Examples are Ulva, Fucus, Sargassum,  
Cladophora

Select the option which shows the correct  
characteristics of the respective divisions.

	<b>Thallophyta</b>	<b>Bryophyta</b>	<b>Pteridophyta</b>
(a)	3, 4, 5, 6, 9	1, 2, 3, 4, 6, 8	1, 2, 5, 6, 7
(b)	3, 4, 6, 9	1, 2, 3, 4, 5, 6,	1, 2, 5, 6, 7, 8
(c)	3, 4, 6, 7	1, 2, 3, 4, 5, 6, 8	1, 2, 5, 6, 9
(d)	3, 4, 6, 9	1, 2, 3, 4, 5, 6, 8	1, 2, 5, 6, 7



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