



Mid Term Examinations  
Class XI  
Biology (Subject Code-044)

Time: 3 hours

Maximum Marks: 70

General Instructions:

- (i) All questions are compulsory
- (ii) The question paper has five sections and 33 questions. All questions are compulsory.
- (iii) Section-A has 16 questions of 1 mark each; Section-B has 5 questions of 2 marks each; Section-C has 7 questions of 3 marks each; Section-D has 2 case-based questions of 4 marks each; and Section-E has 3 questions of 5 marks each.
- (iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- (v) Wherever necessary, neat and properly labeled diagrams should be drawn

SECTION A

- ① Some phylum and classes are mentioned below with examples. Select the correct from the following- 1
  - i. Arthropoda - *Apis, Pila*
  - ii. Amphibia - *Rana, Hyla*
  - iii. Aves - *Columba, Psittacula*
  - iv. Coelenterata - *Physalia, Asterias*

a. (i) and (ii) is correct                      b. (ii) and (iii) is correct  
c. (iii) and (iv) is correct                      d. (iv) and (i) is correct
- ② Schleiden and Schwann formulated cell theory, but did not explain about the cells are formed by the cells. In 1855 another scientist first explained as to how new cells were formed. Identify the name of the scientist who firstly explained that cells divided and new cells are formed from pre-existing cells- 1
  - a. Leeuwenhoek
  - b. Ramchandran
  - c. Virchow
  - d. Christian Gram
- ③ In leaves of some plants the veins modify themselves into large, empty and colourless cells. These modified cells are responsible for exposed and curling of leaves. The name of the cells is 1
  - a. bundle sheath cells
  - b. bulliform cells
  - c. mesophyll
  - d. casparian strip
- ④ The ribosomes are granular structure, they are present in prokaryotic and eukaryotic cells. The chief function of the ribosome is protein synthesis. The size of the ribosomes is different in both type of the cells. Select the correct unit used to measure the ribosomes

- a. Pascal  
 Svedberg's
- b. Density gradient  
d. Micron
- 5 Each category, referred to as a unit of classification, in fact, represents a rank and is commonly termed as 1
- Genus  
c. Taxonomy
- b. Taxon  
d. All are correct
- 6 How many plants among China rose, Oscimum, Sunflower, Mustard, Alstonia, Guava, Calotropis and Nerium have opposite phyllotaxy? 1
- a. Three  
 Five
- b. Four  
d. Two
- 7 Which one of the following combinations is mismatched? 1
- Pili - Reproduction  
b. Cell wall - Protective, determines shape, prevents from bursting  
c. Flagella, Pili and Fimbriae - Surface structures of bacterial cell  
d. Glycocalyx - may be capsule or slime layer
- 8 The metamorphosis is a process by which the early form of organism is changed into different adult form through various stages. What is the best suitable example you have studied from given below? 1
- a. human beings  
 Frog
- b. Snakes  
d. Amoeba
- 9 Cells which fix atmospheric nitrogen is called as 1
- a. Statocyst  
c. Homocyst
- b. Blastocyst  
 Heterocyst
- 10 Ferns are included in 1
- a. Psilopsida  
c. Sphenopsida
- b. Lycopsida  
 Pteropsida
- 11 *Contagium vivum fluidum* was proposed by 1
- a. D J Iwanowsky  
 W M Stanley
- b. M W Beijerinck  
d. T O Diener
- 12 Technical term used for fused carpel is- 1
- a. Synandrous  
 Gamocarpous
- b. Apocarpous  
d. Syncarpous

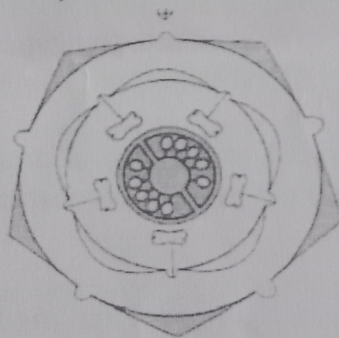
### Assertion (A) - Reason (R) type questions

Note: For this type of questions, the correct answer should be selected from following options.

- 16 15 a. Both assertion and reason are correct and reason is correct explanation for assertion.  
13 b. Both assertion and reason are correct and reason is not correct explanation for assertion.  
14 c. Assertion is correct but reason is incorrect.  
d. Both assertion and reason are incorrect.
- 13 Assertion (A) - Frogs are beneficial for mankind because they eat insects and protect the crop. 1  
Reason (R) - Frogs maintain the ecological balance because these serve as an important link of food chain and food web in the ecosystem
- 14 Assertion (A) - The interphase lasts more than 95% of the duration of cell cycle. 1  
Reason (R) - The Cell division proper lasts for only about an hour.
- 15 Assertion (A) - In dicotyledonous vascular bundles, the secondary xylem and secondary phloem formation tissue is present. 1  
Reason (R) - This type of the vascular bundles are called as 'open vascular bundles'.
- 16 Assertion (A) - In Amoeba the contractile vacuole is important for osmoregulation and excretion. 1  
Reason (R) - In many cells, as in protists, food vacuoles are formed by engulfing the food particles.

### SECTION B

- 17 The bacteria show various shapes, so they are divided on the basis of the different shapes. Write the names of all shapes given with simple diagram. 2
- 18 Who proposed the fluid mosaic model of plasma membrane? Why it is described as bilayer? 2
- 19 The floral diagram of a plant is given below. Identify the family of this floral diagram and write most important feature present in this diagram. 2



- 20 In the structure of the eukaryotic cells, various cell organelles are present to perform various important functions. For this purpose, one of them plays important role to generate energy. Write the name of this cell organelles and write the important functions. 2

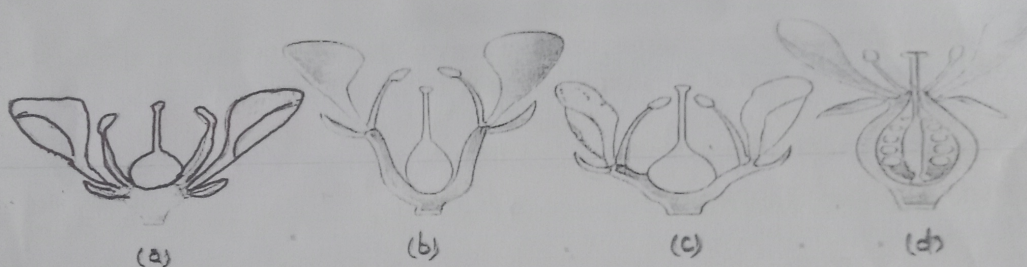
Or

In Meiosis, during the sub-stages of Prophases I, formation of a complex structure called as synaptonemal complex. What is the important function of this complex structure?

- 22 In the history of the classification, two kingdom system of classification was also proposed. Though it was proposed in time of a famous biologist but not used so far. What are the two important drawbacks of two kingdom classification? 2

### SECTION C

- 22 Phyllotaxy is the pattern of arrangement of leaves on the stem or branch. Mention the all types of phyllotaxy with a suitable example in each present in plants. 3
- 23 Mention at least four important features of any one from the following with suitable example. 3
- Reptilia
  - Aves
- 24 a) Name two pteridophytes that are heterosporous. 3
- b) Mention any four economic importance of Bryophytes.
- 25 The diagram related to the position of floral parts on thalamus. Describe the all types of flowers on the basis of position. 3



- 26 The bacteria are found everywhere and perform various functions in the atmosphere also in living beings. They are divided into two types Archaeobacteria and Eubacteria. How these two types of bacteria are different from each other. 3
- 27 The chromosomes are classified on the basis of presence of centromere at different positions in them. Describe the types of chromosomes based on the position of centromere with diagrams. 3
- 28 Draw any one diagram with at least three labelling from the following- 3
- Diagrammatic representation of stomata in grasses
  - Male reproductive system of Frog

### SECTION D

Note: Read the passage of case study and answer the questions given below in case studies given in question 29 and 30.

- 29 Algae are diverse group of aquatic organisms that have the ability to conduct photosynthesis. They are unicellular or multicellular and undifferentiated organisms that occur in variety of forms and sizes. Algae belong to a polyphyletic group, i.e. the organisms of this group are not necessarily related to each other. Based on the 4
- (4)

pigment, composition and reserved food material, algae has been divided into three major classes. The members of these classes also differ in cell wall composition, stored food material, body structure, mode of reproduction, etc.

Answer the following questions-

- (i) Name a representative organism of class-Rhodophyceae .
- (ii) What is the Stored food material in class-Phaeophyceae .
- (iii) Name any two Source of algae from which Agar -Agar is obtained.
- (iv) Give an example of hydrocolloids .

**30** Frogs can live both on land and in freshwater and belong to class Amphibia of phylum Chordata. The most common species of frog found in India is *Rana tigrina*. Frogs do not have constant body-temperature as their body temperature varies with the temperature of the environment. Frogs have the ability to change the colour to hide them from their enemies . Frogs are not seen during peak summer and winter. During this period they take shelter in deep burrows to protect them from extreme heat and cold.

4

The skin of frog is smooth and slippery due to the presence of mucus. The skin is always maintained in a moist condition. The colour of dorsal side of body is generally olive green with dark irregular spots. On the ventral side the skin is uniformly pale yellow. The frog never drinks water but absorb it through the skin. Body of a frog is divisible into head and trunk. A neck and tail are absent. Above the mouth, a pair of nostrils is present.

Answer the following questions-

- (i) Frogs eyes are generally covered by \_\_\_\_\_ which is protective in function.
- (ii) Mention the unique and distinguishing as well as sexual character of male frog.
- (iii) Why Frogs are not seen during peak summer and winter?
- (iv) What is mean by camouflage and mimicry?

### SECTION E

31 Write the important differences between the following

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- a. Monocotyledonous Stem and Dicotyledonous Stem
- b. Isobilateral Leaf and Dorsiventral Leaf
- c. What is the function of root cap in plants?

Or

Write the answers of the following

- a. What is inflorescence? Describe the important types of inflorescences.
- b. What is venation? How many types of venations is present in the leaves of various plants. Describe and mention in which type of plants it is present?
- c. Draw the main types of the roots are present in plants.

32

The names of the living organisms are different in the different languages as well as in the countries. This is a great issue for a common name. Biological scientist develops the naming system of living organisms. Answer the following questions-

5

- a. Who proposed the binomial nomenclature of classification?
- b. Write the universal rules of nomenclature of living organism?
- c. On the basis of such rules write the biological names of the following organism- House fly and Wheat

Or

Write details of any two

- a. Symmetry in animals
- b. Types of Coelom in animals
- c. Justify the following statement

"All vertebrates are chordates but all chordates are not vertebrates".

33

Draw a flow chart to show various phases of a Cell Cycle in a dividing cell? Explain the significance of stages in the Inter-phase of the Cell Cycle? In what stage does the cell cycle of a non-dividing cell is arrested?

5

Or

a. Name the animal phylum for each of the following features-

- |                            |                  |                         |
|----------------------------|------------------|-------------------------|
| (i) Cnidoblasts            | (ii) Flame cells | (iii) Jointed legs      |
| (iv) Water vascular system | (v) Canal system | (vi) Water canal system |

b. What are lichens explain its characteristics with respect to phycobiant & mycobiant.

1 - 16, 17, 19, 20, 22, 23, 26, 27, 28, 30, 32, 30

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