

**Half Yearly Examination 2024 – 2025****Time - 3:00 Hrs.****M.M. 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.
- Wherever necessary, neat and properly labelled diagrams should be drawn.

**Section – A**

- Q.1 Binomial nomenclature was given by :  
(a) Ernest Mayr (b) Alexander Agassiz  
(c) Carolus Linnaeus (d) Ernest Mayr and Carolus linnaeus.
- Q.2 The taxonomic unit “phylum” in the classification of animal is equivalent to which hierarchial level in classification of plants ?  
(a) Class (b) Order (c) Division (d) Family
- Q.3 Red tide in sea appears due to :  
(a) Euglena (b) Chrysophyta (c) Dinoflagellates (d) diatoms
- Q.4 With respect to fungal sexual cycle, the correct sequence of events are :  
(a) Karyogamy ,plasmogamy and meiosis (b) Meiosis ,plasmogamy ,Karyogamy  
(c) Plasmogamy, karyogamy, meiosis (d) Meiosis, Karyogamy and plasmogamy
- Q.5 Amphibians of plant Kingdom are :  
(a) Algae (b) Gymnosperms (c) Pteridophytes (d) Bryophytes
- Q.6 Protonema is :  
(a) Haploid and found in mosses (b) Diploid and found in liverworts  
(c) Diploid and found in pteridophytes (d) Haploid and found in pteridophytes .
- Q.7 Property of living organisms to EMIT light is called -----.  
(a) Biolumiscence (b) Adaptation (c) Symmetry (d) None of above
- Q.8 Flame cells helps in osmoregulation and excretion found in ----- .  
(a) Ctenophora (b) Platyhelminthes (c) Arthropoda (d) Porifera.
- Q.9 Androecium is a whorl of :  
(a) Anthers (b) filaments (c) stamens (d) Sepals.
- Q.10 Embryonic shoot of the plant refers to :  
(a) Radical (b) Plumule (c) Cotyledon (d) None of above
- Q.11 Stomata are the component of :  
(a) Epidermal tissue system (b) Ground tissue system  
(c) Conducting tissue system (d) Vascular tissue system
- Q.12 Frogs can protect itself from enemies by :  
(a) camouflage (b) Sharp teeth (c) Clawed toes (d) Spiny skin

**Question 13 to 16 are assertion reason based questions :**

- (a) A and R both are right and R is the correct explanation of A
  - (b) A and R both are right but R is not the correct explanation of A.
  - (c) A is true but R is false.
  - (d) A is false but are R is true.
- Q.13 Assertion : Eukaryotic cells have more DNA than prokaryotic cells .  
Reason: Eukaryotic are generally more complex than prokaryotes.

- Q.14 Assertion : In Cymose branching growth of terminal bud stops after sometime .  
Reason : The growth of the main stem is definite .
- Q.15 Assertion : Botany deals with the study of plant and zoology deals with the study of animals .  
Reason: Biology is the study of living beings
- Q.16 Assertion : Virus cause diseases and replicate when they are in a host cell.  
Reason: Virus do not replicate outside the host but the survive in environment .

### **Section – B**

- Q.17 Write the full form of ICZN and ICBN.
- Q.18 Draw a well labelled diagram of bacteriophage .
- Q.19 Write a note on economic importance of algae.
- Q.20 What are nucleopores and write their functions.
- Q.21 Write the symbol for :
- (i) Superior ovary                      (ii) Inferior ovary                      (iii) calyx                      (iv) Corolla

**OR**

Differentiate between hypogynous and epigynous flowers .

### **Section – C**

- Q.22 Write a short note on aestivation in Corolla (any three types) with diagram.
- Q.23 Draw a well labelled diagram to show the external features of frog.
- Q.24 Write a short note on phylum annelida.
- Q.25 Draw a life cycle of bryophytes.
- Q.26 Define the following terms :
- (i) Tonoplast                      (ii) Plastids                      (iii) Mesosomes.
- Q.27 Write 3-3 difference between dicot and monocot root.

**OR**

Draw a well labelled diagram of T.S of monocot root.

- Q.28 Write 3-3 difference between chordates and non chordates.

### **Section – D**

- Q.29 Classification involves hierarchy of steps in which each step represent taxonomic category. Each taxonomic categories referred to as a unit of classification and is commonly terms as taxon. Taxonomic hierarchy is a system of arranging all taxonomic categories in descending order as : Kingdom - Phylum - Class - Order family - Genus - Species .  
As we go up the taxonomic hierarchy ,the number of individuals increases but the number of common character istics goes on decreasing .
- (i) Identify the correct sequence of taxonomical categories :  
(a) species → order → phylum → Kingdom (b) species → genus → order → phylum  
(c) Genus → species → order → Kingdom (d) option a and b both
- (ii) Smallest category in Biological Hierarchy.  
(a) Genus                      (b) species                      (c) division                      (d) Kingdom
- (iii) Scientific name of wheat is ----- .  
(a) Triticum aestivum (b) Musca domestica (c) Homosapiens (d) Triticum domestica
- (iv) Category represent ----- in hierarchy.  
(a) Species                      (b) Rank                      (c) genus                      (d) family

**OR**

----- is the process by which anything is grouped into convenient categories based on some observable characters.

- (a) Systematics                      (b) Classification                      (c) Taxonomy                      (d) Biodiversity

Q.30 Vascular bundles of dicots and monocots comprises of three elements- xylem, phloem and cambium. Xylem-In dicotyledonous and monocotyledonous stem the development of xylem take place from the centre towards the periphery i.e protoxylem is formed toward centre and metaxylem towards the periphery such a condition is called Endarch condition and xylem is called centrifugal xylem and the xylem grows from centre to periphery .

While in dicotyledonous and monocotyledonous roots the development of roots take place from periphery towards centre i.e protoxylem is formed towards the periphery and metaxylem towards the centre such a condition is called Exarch condition and xylem is called centripetal xylem.

Cambium :it is a thin strip of primary meristem present between the xylem and phloem in dicot stem and it is responsible for secondary growth .

- (i) Vascular bundles of dicot and monocots comprises of :  
 (a) xylem (b) phloem (c) cambium (d) All of these
- (ii) Centrifugal xylem found in :  
 (a) Dicotyledanous & monocotyledonous stem (b) Only in Dicotyledonous root  
 (c) Only in Monocotyledonous root (d) All of above
- (iii) Monocot consist of ----- cotyledon.  
 (a) one (b) two (c) three (d) None of above
- (iv) Secondary growth is the function of :  
 (a) Xylem (b) Cambium (c) Phloem (d) None of above

**OR**

Transport of food is the function of –

- (a) Xylem (b) Radicle (c) Plumule (d) Phloem

### **Section – E**

Q.31 Name the two cell organelles that are double membrane bound. What are the characteristics of these two organelles. State their functions and draw well labelled diagram of both .

**OR**

What is centromere? How does the position of Centromere form the basis of classification of chromosomes. Support your answer with diagram showing the position of centromere on different types of chromosomes.

Q.32 Explain the reproductive system of male and female in frog with the diagram.

**OR**

- (a) Draw a well labelled diagram to show internal organs of frog showing complete digestive system
- (b) Frogs are beneficial for mankind justify the statement.

Q.33. (i) Make a flowchart of the following classification system :

- (a) 2 kingdom classification (ii) 3 kingdom classification  
 (c) 4 kingdom classification (iv) 5 kingdom classification.

- (ii) Write four universal rules of Biological nomenclature with 1 example.

**OR**

- (i) Describe briefly the four major types of protozoa .
- (ii) What do the terms phycobiont and mycobiont signify.

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