

**FIRST TERMINAL EXAMINATION 2016**  
**BIOLOGY**  
**CLASS – XI**

**Time: 3 HOURS**

**Maximum Marks: 60**

**GENERAL INSTRUCTIONS:**

1. All questions are compulsory.
2. Question paper contains four sections: A, B, C&D. Section –A contains 4 questions of 1 mark each, Section – B is of 5 questions of 2 marks each, Section C has 12 questions of 3 marks each whereas, Section D is of 2 questions of 5 marks each.
3. There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of three marks A student has to attempt only one of the alternatives in such questions.
4. Wherever necessary, the diagrams drawn should be neat and properly labeled.

**SECTION-A**

1. Both sand mounds and living organisms grow. How is their growth different from each other? 1
2. Why Golgi cisternae are associated with ER and concentrically arranged near the nucleus? 1
3. If you are visiting a national park. Which one of the following will guide you to identify organisms and why? 1  
a) Flora, b) Manual, c) Monographs and d) Catalogue.
4. Why are stamen of- 1  
a) Brinjal called epipetalous and  
b) Lily called epiphyllous

**SECTION-B**

5. Give reasons why:-
  - a) What enables Rhizophora to survive in places like swamps?
  - b) How Sugarcane plant resists itself from getting uprooted by strong winds?
  - c) What will happen if thorns are absent in Bougainvillea?
  - d) What will happen if Acacia has well developed leaves?
6. a) How do bacteria reproduce? 2

b) How do ciliated protozoan like paramecia feed?

OR

a) What is the basic difference between conidiospores and sporangiospores?

b) What is the principle underlying the use of cyanobacteria in agricultural fields for crop improvement?

7. Explain how living organisms maintain a non –equilibrium steady state.

8. How cytokinesis different in plant cell and animal cells?

9. Enumerate significances of mitosis.

### SECTION C

10. Provide suitable examples to justify that ‘The linking of monomers to form polymers is a process of dehydration’.

11. How do biologists classify and describe proteins?

12. a) Both gymnosperms and Angiosperms bear seeds. But why are they classified separately?

b) Why is the endosperm of angiosperms triploid?

13. Excretory organs of different animals are below. Write the name of organism in which it is present.

a) Malphigian tubules

b) Proboscis gland

c) Gills

d) Flame cells

e) Nephridia

f) Antennary gland

14. Draw a neat diagram of a typical chordate, label any two parts and compare the same with non chordate.

15. The fruit of Mango and coconut is called a drupe, what does it mean and how are they different from each other? Draw diagrams in support of your answer.

16. Draw a neat and labeled diagram of fluid mosaic model of plasma membrane

OR

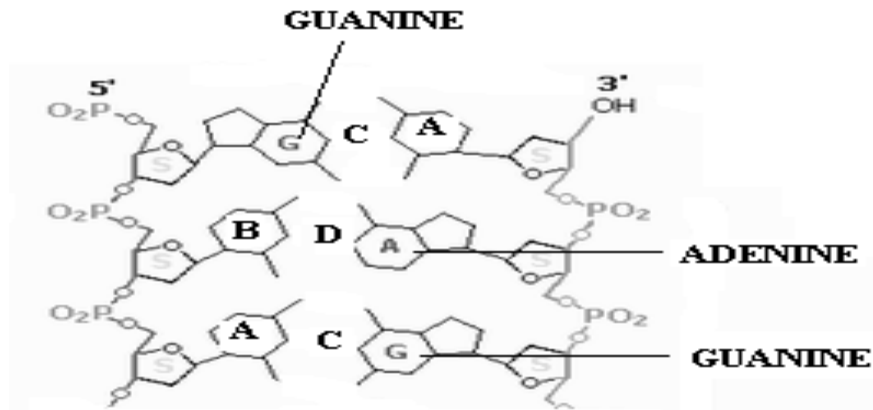
Draw a neat and labeled diagrammatic representation of the internal structure of Cilia.

17. Answer the following with reference to DNA

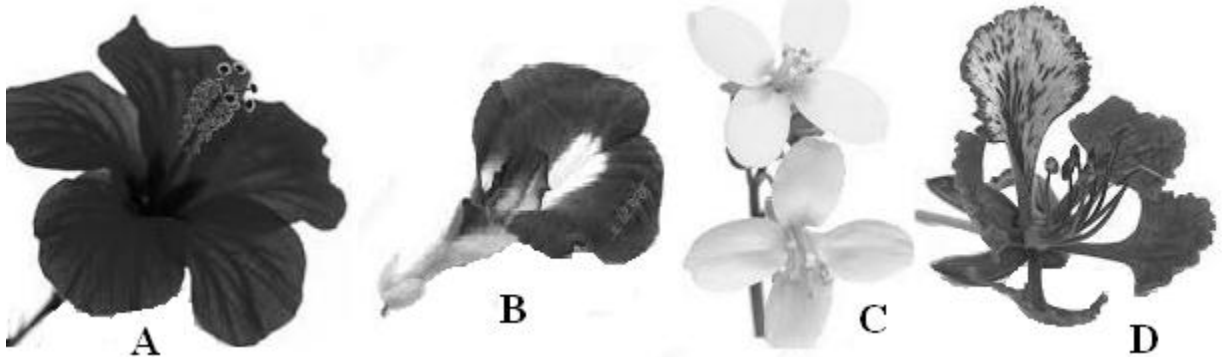
(i) The distance between two successive nucleotides arrangement perpendicular to the long axis.

(ii) Study the structure given below and name the bases ‘A’ and ‘B’

(iii) What holds the two strands of DNA together and how many bonds are present in the places indicated as ‘C’ and ‘D’



18. a) How cells of cardiac muscles contract in unison?  
 b) Why is ligament and skin termed as dense regular tissue and dense irregular tissue respectively?  
 c) How do cells possessing gap junctions communicate with each other?
19. Name the epithelium that lines the following parts: -  
 a) PCT  
 b) Fallopian tube  
 c) Luminal surface of superior venacava  
 d) Alveoli  
 e) Goblet cell  
 f) Salivary duct
20. a) What type of symmetry are the flowers 'A', 'B', 'C' and 'D' depicting?  
 b) What is phyllotaxy? Give one example of plants having whorled phyllotaxy.



21. If an isolated human cell is grown in a culture medium for ten days keeping all the essential parameters favourable for growth.
- a) How many cells will be produced at the end of 10 days?  
 b) What will be the total duration of mitosis at the end of ten days?  
 c) Likewise how many yeast cells will be produced at the end of ten days from one isolated yeast cell in the culture medium?  
 d) During which phase /sub phase is the DNA content doubled?

## SECTION D

22. a. What is an annual ring? 5  
b. What are lenticels and how are they useful to plants?  
c. Which wood is durable and resistant to pest, heart wood or sap wood?  
    Explain.  
d. Answer the following with reference to the anatomy of monocot stem.
- i. How are the vascular bundles arranged?
  - ii. How are the xylem vessels arranged in each bundle?
  - iii. What do you call such an arrangement?
  - iv. Vascular bundles are closed. What type of tissue is lacking in them?
23. a) Give the terms associated with primary constriction and secondary 5  
    constriction of chromosomes.  
b) What will happen if the nuclear pore gets clogged?  
c) What does a chromatin contain?  
d) How are chromosomes classified on the basis of the position of primary  
    constriction on it? Each classification  $\frac{1}{2}$  a mark