

**MAYOOR SCHOOL, AJMER**  
**Biology /XI Sc/Annual Examination /Thursday /March 5, 2009**  
**(Time Allowed: 3 hrs)**

**MM: 70**  
**RNY-10**

**XI.Sc.-RNY**

**General Instructions:-**

- (i) All questions are compulsory.
- (ii) The question paper consists of four sections A, B, C and D. Section-A contains 8 questions of 1 mark each, Section B is of 10 questions of 2 marks each, Section C has 9 questions of 3 marks each whereas Section D is of 3 questions of 5 marks each.
- (iii) There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks weightage. A Student has to attempt only one of the alternatives in such questions.
- (iv) Wherever necessary, the diagrams drawn should be neat and properly labeled .

**Section- A**

- Q.1 In larkspur and buttercup the leaves of the juvenile plant are different in shape from those in mature plants. What is this phenomenon called as? 1
- Q.2 What are perigynous flowers? Give example.of the plant. 1
- Q.3 Both gymnosperms and angiosperms bear seeds but, why are they classified separately? 1
- Q.4 How are floating ribs different from false ribs? 1
- Q.5 In which phylum do the following belong and why?  
( a ) Comb jellies ( b ) Prawn. 1
- Q.6 Name the following -  
( a ) Bacteria found in marshy areas .  
( b ) Bacteria found in extreme salty areas. 1
- Q.7 Why do sharks have to swim continuously? 1
- Q.8 On the basis of types of placentation categorise the following - 1

a

b

**Section-B**

- Q .9 ( i ) Identify the given diagram of aestivation and write the family .  
( ii ) What is the floral formula of flower belongs to this family . 2

- Q.10 Where do PGA and glycine gain entry respectively after being formed during photorespiration in plants ? What happens to them immediately after ? 2
- Q.11 How are peptide bonds different from glycosidic bonds? Give examples. 2
- Q.12 What is the criteria for classifying the bacteria into two groups: gram +ve and gram -ve . 2
- Q.13 Name the kind of tissue that is found in -
- ( a ) Hard walls of nuts .
- ( b ) Growing petiole of leaf . 2
- Q.14 Complete the following table- 2

Common Name	Mango	Man	Wheat	House fly
Kingdom	Plantae	Animalia	Plantae	Animalia
Class	Dicotyledonae	Mammalia	? ( a )	? ( b )
Genus	Mangifera	Homo	Triticum	? ( c )
Species	? ( d )	sapiens	aestivum	Domestic

- Q.15 Study the given graph and write what do 'a' and 'b' depict? 2

- Q.16 What would be expected to happen if- (a) you forget to add cytokinin to the culture medium.(b) you remove shoot tips of a plant. 2

OR

Draw a labeled diagram of areolar tissue.

- Q.17 Draw a diagram of a standard ECG. What do P wave and QRS complex explain? 2

- Q.18 Draw a labelled diagram of sectional view of a human heart to show the nodal tissues. 2

### Section - C

- Q.19 Identify the following human diseases when there is -
- ( a ) Progressive degeneration of skeletal muscles due to genetic disorder .
- ( b ) Inflammation of glomeruli of kidney .
- ( c ) Acute chest pain when no enough oxygen is reaching the heart muscles . 3
- Q.20 Give the schematic representation of amphibolic pathway to explain the break down of different organic molecules. 3
- Q.21 How will you compare the cyclic and non-cyclic photophosphorylation in plants? 3

Q.22 Given diagram is showing the alimentary canal of frog. Label the given parts and write the functions of b and d . 3

Q.23 Following algae are found in a water sample. Categorise them as Chlorophyceae , Phaeophyceae and Rhodophyceae -  
Volvox ,Laminaria ,Ulothrix ,Gelidium,Sargassum,Porphyras . 3

Q.24 Represent schematically the haplodiplontic life cycle .Name two groups of plants which show this kind of life cycle ? 3

Q.25 Which plant hormone would you use if you want to -  
( a ) Induce rooting in twig .  
( b ) Delay in leaf senescence .  
( c ) Quick ripening of a fruit . 3

Q.26 If cell A has  $\psi = -250$  KPa and cell B has  $\psi = -150$  KPa and they lie adjacent to each other -

( a ) In which direction osmosis will occur .  
( b ) Which cell has higher solute potential ?  
( c ) Which cell will increase in volume ? 3

Q.27 Study the given diagram and answer the following questions -

(a)Where do you find the following structures?  
(b)What is the difference between 9+2 and 9+0 arrangement?  
(c)Label the structures a and b. 3

OR

There are various means of recording description of plants and animals like flora, manuals, monographs. How are they different from each other? Explain.

**Section - D**

Q.28 (i) How does the sliding filament theory explain the mechanism of muscle contraction? Explain and draw labeled diagram.

(ii) What is the role of calcium in this process ?

OR

(i) Explain the process of conduction of nerve impulse along a nerve fiber .

(ii) Draw a labelled diagram to show axon terminal and synapse . 5

Q.29 (i) Describe the auto regulation of GFR .

(ii) Draw a labelled diagram of single nephron showing reabsorption and secretion of major substances at different parts of the nephron .

OR

Draw a labeled diagram showing parts of a human eye. Explain the mechanism of vision. 5

Q.30 (i) Describe the events that occur in Metaphase and Anaphase II along with diagrams .

(ii) Answer the following -

(a) Point at which two sister chromatids are held together .

(b) Phase in the cell cycle when DNA synthesis or replication take place ?

OR

What are the hormones of heart, kidney and gastrointestinal tract? How do they help in body functions? 5