

# Federal Board SSC-I 2015

## BIOLOGY SSC-I

### SECTION – A (Marks 12)

Time allowed: 20 Minutes

Marks: 12

NOTE: Section-A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

- Q1. Circle the correct option i.e. A/B/C/D. Each part carries one mark.**
- (i) Which of the following Bioelements is in the highest percentage in protoplasm?  
A. Carbon                      B. Hydrogen  
C. Oxygen                      D. Nitrogen
- (ii) Which of the following is not a characteristic of a good hypothesis?  
A. Must be consistent with all available data  
B. Must be testable  
C. Must be correct  
D. Must make predictions
- (iii) The function of Mitochondrion is:  
A. Lipids storage  
B. Protein synthesis  
C. Photosynthesis  
D. Cellular Respiration
- (iv) The major Component of plant cell wall is:  
A. Chitin  
B. Peptidoglycan  
C. Cellulose  
D. Cholesterol
- (v) A related group of genera form:  
A. order                      B. family  
C. class                      D. phylum
- (vi) In which stage of cell cycle do most cells spend their lives?  
A. Prophase                      B. Metaphase  
C. Interphase                      D. Telophase
- (vii) Prosthetic groups are:  
A. Required by all enzymes  
B. Loosely attached with enzymes  
C. Protein in nature  
D. Tightly bound to enzyme
- (viii) In which of the following steps of respiration is  $\text{CO}_2$  produced?  
A. Glycolysis  
B. Krebs cycle  
C. Electron Transport chain  
D. All of these
- (ix) In stomach pepsinogen is converted into:  
A. Pepsin                      B. Bicarbonate  
C.  $\text{HCl}$                       D. Gastrin
- (x) Ulcers occur in:  
A. Stomach                      B. Duodenum  
C. Oesophagus                      D. All of these
- (xi) Which of these are responsible for blood clotting?  
A. Platelets                      B. Erythrocytes  
C. Neutrophils                      D. Basophils
- (xii) Stomata close when guard cells:  
A. Lose water  
B. Gain chloride ions  
C. Become turgid  
D. Gain potassium ions

# BIOLOGY SSC-I

Time allowed: 2:40 Hours

Total Marks Sections B and C: 53

**NOTE:** Answer any eleven parts from Section -B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

## **SECTION - B (Marks 33)**

- Q. 2 Attempt any ELEVEN parts. The answer to each part should not exceed 3 to 4 lines. (11×3 = 33)**
- (i) Define the following:
    - a. Genetics
    - b. Biotechnology
    - c. Entomology
  - (ii) Quantitative Observations are better in biological method. How?
  - (iii) What is meant by hypertonic and hypotonic solutions?
  - (iv) Describe the fluid mosaic model of plasma membrane.
  - (v) Differentiate between the terms extinct and endangered.
  - (vi) Define co-factor and co-enzyme.
  - (vii) Justify why viruses are excluded from five kingdoms system of classification.
  - (viii) Describe lock and key model of enzyme action.
  - (ix) What structures and phenomena are involved in the intake of CO<sub>2</sub> and water by plants?
  - (x) What is the role of chlorophyll and light in photosynthesis?
  - (xi) How would you differentiate between bolus and chyme?
  - (xii) Define the Cohesion tension theory
  - (xiii) Define systole and diastole.
  - (xiv) What are the two main types of white blood cells? How do they differ?
  - (xv) What is the importance of organic and inorganic fertilizers in agriculture?

## **SECTION - C (Marks 20)**

**Note:** Attempt any TWO questions. All questions carry equal marks. (2×10 = 20)

- Q.3**
- a. Explain the structure and functions of Endoplasmic reticulum and Golgi apparatus? (1+2+2)
  - b. Outline the mechanism of respiration while defining glycolysis, Krebs cycle and electron transport chain. (05)
- Q.4**
- a. Relate the importance of biodiversity with natural ecosystem through examples. (2+4)
  - b. Describe the structure and functions of stomach with labelled diagram. (04)
- Q.5**
- a. Contrast mitosis and meiosis emphasizing the events that lead to different outcomes (04)
  - b. Which four chambers make the human heart and how blood flows through these chambers? (2+2)