Version No.			

ROLL NUMBER						

Answer Sheet No._____

Sign. of Candidate _____

Sign. of Invigilator _____

BIOLOGY SSC–I

SECTION – A (Marks 12)

Time allowed: 15 Minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handedover to the Centre Superintendent. Deleting/overwriting is not allowed. **Do not use lead pencil.**

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

(1) Which one of the following branches of biology deals with the study of functionsof heart?

A. Morphology ◯ B. Physiology ◯
C. Histology ◯ D. Cell biology ◯

(2) Hardness of a seed coat is due to:

A. Sclereid ◯ B. Fibre ◯
C. Tracheid ◯ D. Vessels ◯

(3) Following are the characteristics of a good hypothesis, **EXCEPT**:

A. Should be a complex statement ◯
B. Should be a tentative idea ◯
C. Should be testable ◯
D. Should agree with available observation ◯

(4) Which one of the following scientific name is according to the binomialnomenclature?

A. *Oryza Sativa* ◯ B. *oryza sativa* ◯
C. *Oryza sativa* ◯ D. *ORYZA SATIVA* ◯

(5) Select the one which is "**NOT**" the characteristic of a Prion:

A. Composed of protein only ◯
B. Can replicate ◯
C. Cause disease in sheep ◯
D. Contain circular RNA ◯

(6) Many enzymes require cofactors for their proper working. Different cofactorsbelong to different groups. Pick the odd one:

A. Vitamin A ◯ B. Coenzyme A ◯
C. NAD^+ ◯ D. Haeme group ◯

(7) If a cell does not undergo S-phase, one of the following events cannot take place:

A. Increase in number of organelles ◯
B. Synthesis of protein ◯
C. Replication of DNA ◯
D. Increase in size of cell ◯

(8) Identify the event where mitosis will **NOT** take place:

A. RBC replacement ◯ B. Gamete formation ◯
C. Grass propagation ◯ D. Wound healing ◯

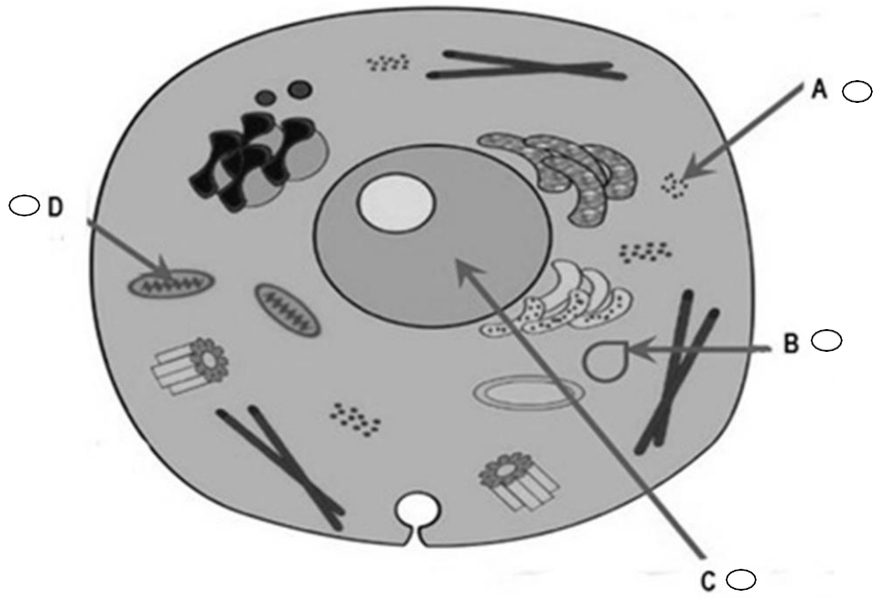
(9) After strenuous exercise you get tired because skeletal muscles accumulate:

A. Lactic acid only ◯ B. Ethyl alcohol ◯
C. Lactic acid and CO_2 ◯ D. Ethyl alcohol and CO_2 ◯

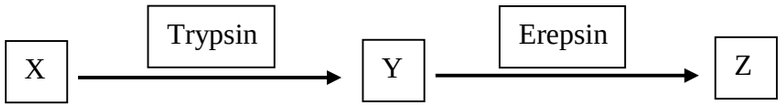
(10) If a person gets injured, which type of WBCs will release histamine?

A. Neutrophil ◯ B. Eosinophil ◯
C. Basophil ◯ D. Lymphocyte ◯

(11) In the given animal cell, which labelled part is responsible for the oxidation of food in the cell:



(12) The diagram given below shows some stages of digestion. Choose the best option for the action of Trypsin and Erepsin enzymes:



	X	Y	Z
A	Protein	Amino acid	Polypeptide
B	Amino acid	Protein	Polypeptide
C	Polypeptide	Amino acid	Protein
D	Protein	Polypeptide	Amino acid

Federal Board SSC-I Examination
Biology Model Question Paper
(Curriculum 2006)

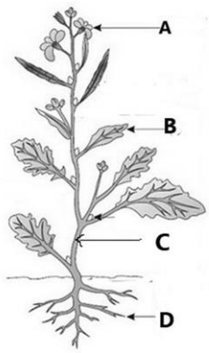
Time allowed: 2.45 hours Total Marks: 53

Note: Answer all parts from Section 'B' and all questions from Section 'C' on the **E-sheet**. Write your answers on the allotted/given spaces.

SECTION – B (Marks 33)

Q.2 Attempt all parts from the following. All parts carry equal marks. (11× 3 = 33)

i. Answer the following questions related to the Mustard plant



a. Name the level of organization exhibited by the Mustard plant. Also writeits scientific name. (1)

b. Mention the role of part A in the given plant. (1)

c. Identify the part C and D of the plant on the basis of their function? (1)

OR

Complete the table related to epithelial tissue. (0.5 x6)

	Tissue name	Location	Function
a		Alveoli of lungs	
b	Columnar epithelium		
c			Transport through tubes

ii. How did Ronald Ross prove the deduction, "Plasmodium should be present in mosquito"? (3)

iii. Briefly explain types of cofactors required by enzymes. Also give one example of each cofactor (1+1+1)

iv. Suppose a doctor is examining the group of children suffering from Rickets and anaemia:

a. Name the food components the children are lacking in their diet. (1)

b. What is the importance of those food components in human body? (2)

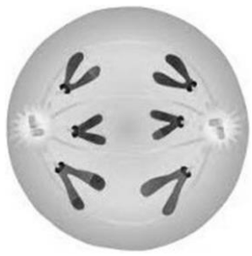
OR

What is metabolism? Briefly explain its types with examples. (1+1+1)

v. Which kingdom does Euglena belong to? Give reason for its placement. Enlist any three characteristics of that kingdom. (0.5+1+1.5)

vi. Enlist any three effects of pollution on biodiversity. (1+1+1)

vii. The figure given below is of a dividing cell:



a. Identify the phase and type of cell division. (01)
b. State the events taking place in this phase of cell division. (02)

viii. What is the effect of temperature on enzyme activity? Support your answer with a graph. (2+1)

ix. Give reasons why:
a. Does death of heart muscles take place during Myocardial infarction? (2)
b. Are RBCs biconcave in shape? (1)

OR

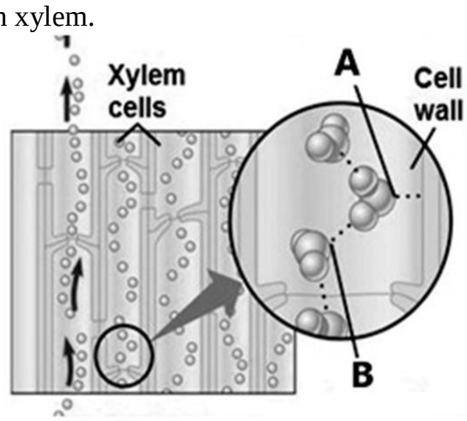
In the given figure, plant cells are placed in hypotonic and hypertonic solutions.

Evaluate the effects of these solutions on plant cells. (1.5+1.5)

x. Give reasons as to why: (1+1+1)
a. A person with blood type O is universal donor
b. Veins have low blood pressure as compared to arteries
c. In humid air transpiration rate is less

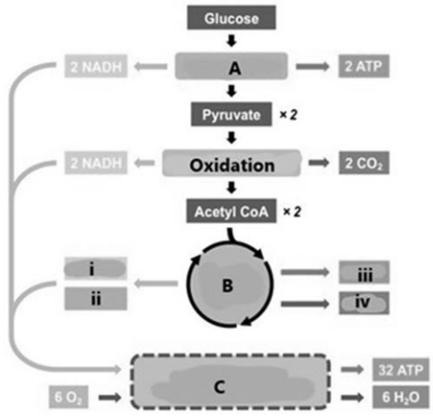
OR

The figure given below shows part of mechanism for the movement of water through xylem.



a. Identify forces A and B. (1)
b. Despite of the gravitational force, how does the upward movement of water take place through xylem? (2)

xi. The given flow chart illustrates the aerobic respiration. Answer the questions related to it:
(1.5+1.5)



(a) Name the phases of aerobic respiration	(b) Label the products of phase B of respiration
A.	i.
B.	ii.
C.	iii.

OR

Why ATP is important for the cell? Give complete name of ATP. (2+1)

SECTION – C (Marks **20**)

Note: **Attempt all questions. Marks of each question are given within brackets. (4x5=20)**

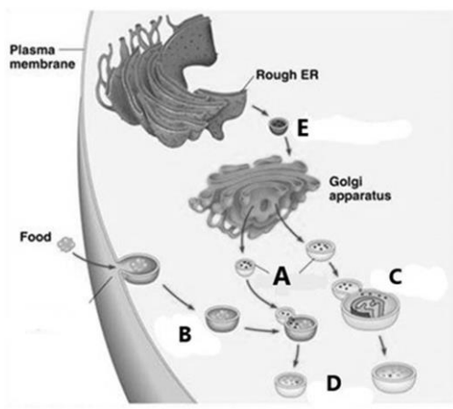
Q.3 Identify the causes and effects of deforestation. (2+3)

OR

Explain the events of light dependent reactions. Also draw Z scheme diagram. (3+2)

Q.4 Explain the internal structure of human heart. (5)

Q.5 a. Answer the questions related to the cell organelles shown in figure.



i. Identify the organelle A. (0.5)
ii. Label the steps C, D and E. (1.5)
iii. Enlist the functions of organelle A. (3)

OR

How does the processes of swallowing and peristalsis take place in humans? (3+2)

Q.6 Explain the steps of Prophase I of meiosis in detail. (5)

OR

Describe digestion of food in oral cavity and stomach specifying the enzymes involved and products formed. (2+3)

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Biology SSC-I
SLO
(Curriculum 2006)

SECTION – A
(1x12=12)

Q.1 Encircle the correct option i.e. A / B / C / D. All parts carry equal marks.

(1) Define the branches of biology i.e. morphology, anatomy, physiology, embryology, taxonomy, cell biology, histology, paleontology, environmental biology, biotechnology, socio-biology, parasitology, immunology, entomology, genetics, pharmacology.

(2) Describe the major plant tissues i.e. simple tissues (meristematic tissues, permanent tissues) and compound tissues (xylem tissues and phloem tissues) in terms of their cell specificities, locations and functions.

(3) Describe the steps involved in biological method i.e. recognition of a biological problem, observation and identification, building up hypotheses, drawing deductions, devising experiments and inferring results (malaria as an example).

(4) Describe using local examples, the importance of Binomial nomenclature.

(5) Rationalize that there are sub-cellular particles, such as viruses and prions, which have some characteristics of living things.

(6) State that some enzymes require co-factor for their functioning.

(7) Predict the importance of S-phase of the Interphase.

(8) Describe the significance of meiosis as leading to the formation of haploid cells, that may function directly as gametes as in animals or may divide by mitosis as in plants, fungi and many protists.

(9) Describe the importance of Anaerobic Respiration.

(10) List the functions of the components of blood.

(11) Identify the structure and describe, in general terms, the functions of the components of plant and animal cell.

(12) Sort out the actions of Enzymes in specific regions of alimentary canal, with respect to their substrates & products

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SECTION – B (Marks 33)

Q.2 Attempt all parts from the following. All parts carry equal marks. (11x 3 = 33)

i. Compare cellular organization in organisms i.e. unicellular organization (Amoeba), colonial organization (Volvox) and multicellular organization (mustard and frog). (Only brief comparison referring to cellular organization is required. Details of organs and organs-systems of frog and mustard should be avoided)

OR

Describe the major animal tissues (epithelial, connective, muscular and nervous) in terms of their cell specificities, locations and functions.

ii. Describe the steps involved in biological method i.e. recognition of a biological problem, observation and identification, building up hypotheses, drawing deductions, devising experiments and inferring results (malaria as an example).

iii. State that some enzymes require cofactors.

iv. Describe the food sources and metabolic functions of Calcium and Iron.

OR

Define metabolism and differentiate between anabolism and catabolism.

v. Describe the diagnostic characteristics of the five kingdoms.

vi. Explain the impact of human beings on biodiversity.

vii. State the separation of chromatids during anaphase.

viii. Explain the effect of pH, temperature and concentration of substrate on theactivity of an enzyme.

ix. (a)State the causes, treatments and prevention of Myocardial infarction.

(b). State the relationship between cell function and cell structure (for absorption - root hair cells; conduction and support - xylem vessels; transport ofoxygen - red blood cells).

OR

Define turgor and describe its importance. Describe the phenomena of plasmolysis and explain its relationship with osmosis.

x. (a) List the appropriate donors and recipients for each of the four blood groups.

(b) Compare the structure and function of an artery, a vein and a capillary.

(c). Describe temperature, wind and humidity as the factors affecting the rateof transpiration.

OR

Explain the movement of water in terms of transpiration pull.

xi. Outline the mechanism of respiration while defining Glycolysis, Krebs cycle and Electron Transport Chain.

OR

Explain ATP as a molecule that is the chief energy currency of all cells.

SECTION – C (Marks 20)

Note: Attempt all questions. Marks of each question are given within brackets. (4x5 = 20)

Q.3 Identify causes of deforestation and its effects on biodiversity.

OR

Outline the processes (Light and Dark reactions) involved in photosynthesis.

Q.4 Describe the external and internal structure of human heart. Describe the circulation of blood through atria and ventricles of the heart, explaining the role of the bicuspid, tricuspid and semilunar valves. Explain how the heart is structurally adapted to its functions. Define the terms heartbeat, heart rate and pulse rate.

Q.5 Identify the structure and describe, in general terms, the functions of the components of plant and animal cell.

OR

Describe swallowing and peristalsis.

Q.6 Describe events of prophase I.

OR

Identify and describe main structures of alimentary canal and associated organs.

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BIOLOGY SSC I

Table of Specifications

Assessment Objectives	Unit 1: Introduction to Biology	Unit 2: Solving a Biological problem	Unit 3: Biodiversity	Unit 4: Cells and Tissues	Unit 5: Cell Cycle	Unit 6: Enzymes	Unit 7: Bioenergetics	Unit 8: Nutrition	Unit 9: Transport	Total Marks	Percentage
K (Knowledge)	Q1(1) 1 Q2(i) 3	Q2(ii) 3		Q1(2) 1 Q2(i) 3		Q2(iii) 3 Q2(iv) 3 Q2(viii) 3		Q2(iv-a) 1 Q2(iv-b) 2		23	24.21%
U (Understanding)		Q1(3) 1	Q2(v) 3 Q2(vi) 3 Q3 (5)	Q1(5) 1 Q5(5)	Q1(7) 1 Q1(8) 1 Q2(vii-a) 1 Q2(vii-b) 2 Q6(5)	Q1(6) 1	Q1(9) 1 Q 3 (5)	Q5(5) Q6(5)	Q1(10) 1 Q 4 (5)	51	53.68%
A (Application)			Q1(4) 1	Q1(11) 1 Q2(ix-b) 1 Q2(ix) 3			Q2(xi) 3 Q2(xi) 3	Q1(12)1	Q2(ix-a) 2 Q2(x) 3 Q2 (x)3	21	22.10%
Total Marks	4	4	12	15	10	10	12	14	14	95	100%

KEY: 1(1)01
Question No (Part No.) (Allocated Marks)