

Version No.			

ROLL NUMBER						

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

Answer Sheet No. _____

Sign. of Candidate _____

Sign. of Invigilator _____

BIOLOGY SSC-II (3rd Set)
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 handed over 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.

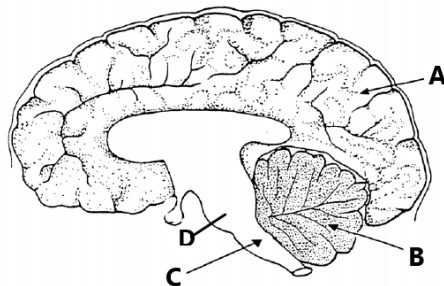
- (1) Choose the mismatched
- | | | | |
|----------------|-----------------------|-------------------------|-----------------------|
| A. Gums-Keekar | <input type="radio"/> | B. Latex-Tomato | <input type="radio"/> |
| C. Resin-Pine | <input type="radio"/> | D. Mucilage-Lady finger | <input type="radio"/> |

- (2) Which one of the following rows best describes the action of different structures associated with the process of inhalation

	Diaphragm	Rib muscles	Ribs	
A	Contract	Relax	Remain unchanged	<input type="radio"/>
B	Relax	relax	Raised	<input type="radio"/>
C	Contract	contract	Raised	<input type="radio"/>
D	Relax	Contract	Remain unchanged	<input type="radio"/>

- (3) Hyaline cartilage is the characteristic of
- | | | | |
|------------------------|-----------------------|---------------|-----------------------|
| A. Pinna | <input type="radio"/> | B. Epiglottis | <input type="radio"/> |
| C. Intervertebral disc | <input type="radio"/> | D. Trachea | <input type="radio"/> |

- (4) The diagram shows the different regions of brain. Which structure carry out the functions of conscious thought and intelligence



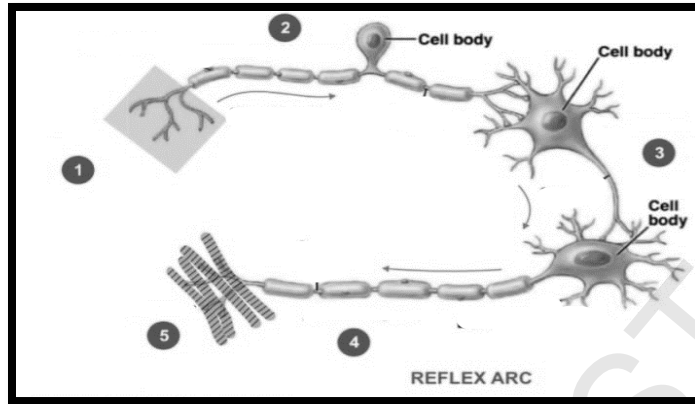
- | | | | |
|----|-----------------------|----|-----------------------|
| A. | <input type="radio"/> | B. | <input type="radio"/> |
| C. | <input type="radio"/> | D. | <input type="radio"/> |

- (5) Three characteristics of a specific method of asexual reproduction are listed below:
- Division of nucleus
 - Division of cytoplasm
 - Invagination of cell membrane

Identify the method

- A. Multiple fission B. Spore formation
 C. Binary Fission D. Parthenogenesis

- (6) The diagram shows reflex arc.



The components of this reflex arc are:

	1	2	3	4	5	
A	Receptor	Sensory neuron	Motor neuron	Interneuron	Effector	<input type="radio"/>
B	Sensory neuron	Motor neuron	Interneuron	Receptor	Effector	<input type="radio"/>
C	Receptor	Effector	Sensory neuron	Interneuron	Motor neuron	<input type="radio"/>
D	Receptor	Sensory neuron	Interneuron	Motor neuron	Effector	<input type="radio"/>

- (7) Identify the mode of vegetative propagation in the following plant



- A. Bulb B. Rhizome
 C. Stolon D. Corm

- (8) Some distinct characters of a variation are given

- Controlled by a single gene pair
- Distinct phenotype
- Least effected by the environment

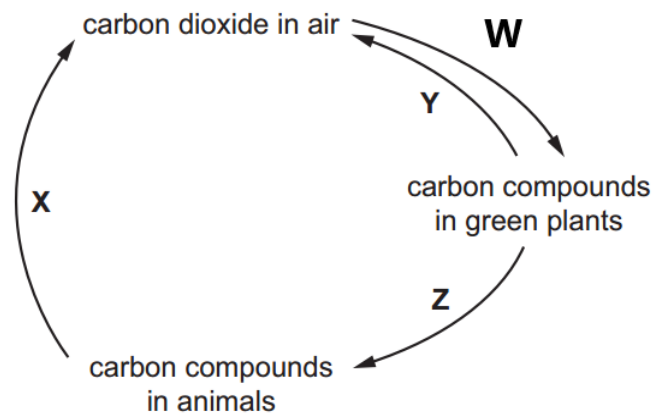
Select the trait having these characters

- A. Height B. Skin colour
 C. IQ level D. Tongue rolling

- (9) Select the one which is **NOT** related to single cell protein

- A. Use of agricultural waste
 B. Mass growth of microorganism
 C. Less nutritious food
 D. Reduction in pollution

(10) The diagram represents part of carbon cycle

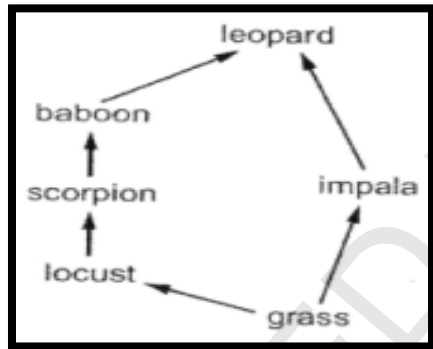


Which processes are represented by X, Y, Z?

	X	Y	Z
A	Photosynthesis	Feeding	Combustion
B	Respiration	Respiration	Feeding
C	Combustion	Feeding	Photosynthesis
D	Feeding	Respiration	Combustion

- ○
○
○

(11) The diagram shows a food web.



At which trophic levels is the leopard feeding?

- A. First and second ○ B. Second and third ○
C. Second and fourth ○ D. Third and fifth ○

(12) Morphine also acting as pain reliever, is obtained from

- A. Cannabis ○ B. Psilocin ○
C. Mescaline ○ D. Opium ○

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

Time allowed: 2.45 hours

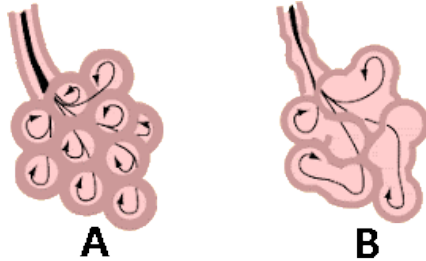
Total Marks: 53

Note: Answer any eleven parts from Section 'B' and attempt any two questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

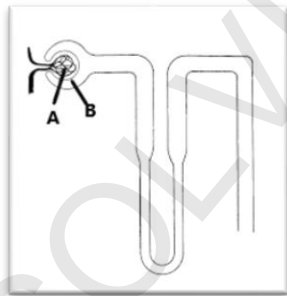
SECTION – B (Marks 33)

Q.2 Attempt any **ELEVEN** parts from the following. All parts carry equal marks. Be brief and to the point. (11 × 3 = 33)

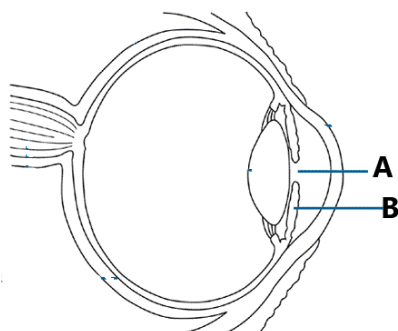
- i. List down the osmotic adjustments adapted by the water lily for its survival in its habitat.
- ii. The figure shows a healthy lung and a diseased lung



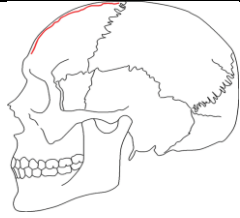


- a. Identify the disease and affected part of the lung. (1)
 - b. How the part B show structural variation from part A. (1)
 - c. Write any two symptoms of the disease. (1)
- iii. Discuss various components of appendicular skeleton.
 - iv. The figure shows the structure of nephron



- a. Identify A and B. Point out the functional differences existing between A and B. (1.5)
 - b. What action will be taken by the kidney if there is shortage of water in the body fluid? (1.5)
- v. The figure shows parts of eye



- a. Identify Part A and B (1)
 b. How the both parts regulate the amount of light entering the eye? Discuss. (2)
- vi. Doctors are treating 23 years old boy facing unprovoked seizures. Identify the disease. Discuss its causes and other symptoms (3)
- vii. Identify the joints types and complete the table (3)

	Structures	Joint type	Definition
i.			
ii.			
iii.			

- viii. Complete the table related to structure of seed (0.5x6=3)

	Part name	Location	Importance
i.		Outer covering of seed	
ii.			Helps to attach the seed to ovary wall
iii.	Micropyle		

- ix. Construct a flow chart showing the spermatogenesis in rabbit (3)
- x. Genetic engineering is helpful in curing animal diseases. Write about any three such achievements. (3)
- xi. Develop an idea that artificial selection is a means of improving plant yield? (3)
- xii. The examples are related to some association between different individuals. Identify the kind of association. (0.5x6=3)

	Example	Kind of association
i.	Termite with protozoa in its gut	
ii.	Mosquito sucking our blood	
iii.	Plasmodium in our blood	
iv.	Fox preys upon Rabbit	
v.	Honey guide bird and badger	
vi.	Sucker fish on shark	

- xiii. Describe the usage of any fermenter. (3)
- xiv. Explain different strategies for conservation of nature with reference to concept of 3 R. (3)
- xv. Bacteria are getting resistance against antibiotics day by day. Why? (3)

SECTION – C (Marks 20)

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

- Q.3** a. Trace the pathway of air from the wind pipe to the site where final exchange of gases take place? Discuss the structural and functional details along with diagram. (5+1)
- b. How the concentration of sugar is maintained in the body. Explain with reference to negative feedback (4)
- Q.4** a. Enlist the causes of water pollution. (4)
- b. Describe the formation of male and female gametophyte in flowering plant? Draw diagram also. (4+2)
- Q.5** a. A pea plant having flat yellow pods (FFYY) is crossed with a pea plant having constricted green pods (ffyy). Show with the cross what will be the phenotype and genotype of F1 and F2 generations. (5)
- b. State and explain the Mendel's law applicable on this cross. (1+4)

* * * * *

BIOLOGY SSC-II (3rd Set)

Student Learning Outcomes Alignment Chart (Curriculum 2006)

SECTION – A

Q.1

- (1) Describe the mechanisms/adaptations in plants for the excretion/storage of CO₂, H₂O, O₂, latex, resins and gums.
- (2) Describe the mechanism of breathing in term of movements of ribs and diaphragm.
- (3) Define skeleton and differentiate between cartilage and bone.
- (4) Explain the function of these parts of brain; cerebrum, cerebellum, pituitary gland, thalamus, hypothalamus, medulla oblongata.
- (5) Describe different types of asexual reproduction i.e. binary fission, budding, spore formation and vegetative propagation.
- (6) Define reflex action and reflex arc.
- (7) Explain vegetative propagation in plants (through stem, suckers and leaves).
- (8) Describe variation and explain difference between continuous and discontinuous variation by giving examples like, height, weight, IQ, gender and blood groups in population.
- (9) State the significance of single-cell protein in human food.
- (10) Describe carbon and nitrogen cycles.
- (11) Describe food chains and food webs.
- (12) Define narcotics (drugs that produce semi-consciousness and sleep to get relieve from pain) and relate it with Morphine and Heroine (as the most widely used / abused)

SECTION – B

Q.2

- i. Explain osmotic adjustments in plants.
- ii. Describe briefly diseases related to respiratory system like bronchitis, emphysema, pneumonia, asthma, and lung cancer.
- iii. Describe the main components of the axial skeleton and the appendicular skeleton.
- iv. Relate the structure of kidney with its function. Explain that kidney plays an important role in osmoregulation.
- v. Describe the structure of human auditory and visual receptors. Describe the pupil reflex in dim and bright light.
- vi. Explain the two common kinds of nervous disorders (Vascular i.e. paralysis and Functional i.e. epilepsy. Enlist some of the symptoms and treatments of Paralysis and Epilepsy.
- vii. Differentiate between moveable joints and immovable joints.
- viii. Describe the structure of seed?
- ix. Describe the processes of gametogenesis in rabbit.
- x. Describe major achievements of genetic engineering in curing animal diseases (foot-and-mouth disease, Coccidiosis, Trypanosomiasis) and in animal propagation (animal cloning).
- a. Develop an understanding of artificial selection as a means of improvement of yield in Economically important plants, like wheat, rice etc.
- xi. Explain competition, predation and symbiosis (parasitism, mutualism, commensalisms).
- xii. Describe the procedure of using fermenters.
- xiii. Explain different strategies for conservation of nature (reduced resource use, reuse and recycling of materials etc.).

- xiv. Rationalize the resistance developed in bacteria against the widely used antibiotics.

SECTION – C

- Q.3** a. Describe the roles of the parts of air passageway and of lungs.
b. Describe the term “Negative feedback” with reference to Insulin and glucagon
- Q.4** a. Explain causes of air, water, and land pollution
b. Describe sexual reproduction in plants by explaining the life cycle of a flowering plant.
- Q.5** a. Demonstrate that 9:3:3:1 dihybrid F-2 phenotypic ratio is an evidence of independent Assortment.
b. State Mendel’s law of Independent Assortment.

BIOLOGY SSC-II (3rd Set)

TABLE OF SPECIFICATION

Assessment Objectives	Unit 10: Gaseous Exchange	Unit 11: Homeostasis	Unit 12: Coordination	Unit 13: Support and Movement	Unit 14: Reproduction	Unit 15: Inheritance	Unit 16: Man and His Environment	Unit 17: Biotechnology	Unit 18: Pharmacology	Total Marks	Percentage
K (Knowledge)		Q2(i)-03		Q1(3) 01 Q2(iii)-03	Q4 b-06		Q4 a-04	Q2(x-)-03 Q2(xiii)-03	Q1(12) 01	24	27.6%
U (Understanding)	Q1(2) 01 Q2(ii)-03 Q3 a-06	Q1(1) 01	Q3 b-04	Q2(vii)03	Q1(5) 01 Q2(viii)-03 Q2(ix)-03	Q5 a-05 Q5 b-05	Q2(xii)-03 Q2(xiv)03	Q1(9) 01	Q2(xv-)-03	45	51.7%
A (Application)		Q2(iv)-03	Q1(4) 01 Q1(6) 01 Q2(v)-03 Q2(vi)-03		Q1(7) 01	Q1(8) 01 Q2(xi)-03	Q1(10) 01 Q1(11) 01			18	20.7%
Total Marks	10	07	12	07	14	14	12	07	04	87	100%

KEY:

1(1)(1)

Question No. (Part No.) (Allocated Marks)

Note: (i) The policy of FBISE for knowledge based questions, understanding based questions and application based questions is approximately as follows:

- a) 30% knowledge based.
- b) 50% understanding based.
- c) 20% application based.

(ii) The total marks specified for each unit/content in the table of specification is only related to this model question paper.

(iii) The level of difficulty of the paper is approximately as follows:

- a) 40% easy
- b) 40% moderate
- c) 20% difficult