

Seat No. : _____

AL-115

April-2022

B.Sc., Sem.-VI

**311 : Biochemistry
(Applied Biotechnology)**

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) **All** questions in Section – I carry equal marks.
 - (2) Attempt any **three** from Section – I.
 - (3) Question – **9** in Section – II is **COMPULSORY**

Section – I

Attempt any **three** :

1. (a) List different methods of immobilization of enzymes, discuss any two. **8**
(b) Write a note on biosensors. **6**
2. (a) Discuss different types of continuous flow reactors with proper diagrams. **10**
(b) What are the objectives of enzyme engineering ? **4**
3. Write a detailed note on GM crops. **14**
4. (a) Discuss what are Probiotics and their uses in prevention of diseases. **7**
(b) Discuss briefly the role of Enzymes in Food industry. **7**
5. (a) What are the different types of gene therapy ? Discuss the two approaches used for gene therapy. **8**
(b) What is tissue engineering ? List the five basic steps of tissue engineering. **6**
6. (a) Define subunit vaccines. How do recombinant vaccines work ? List four advantages of a recombinant vaccine. **7**
(b) Write a note on DNA fingerprinting. **7**

7. (a) Write a note on Biofertilizers. 7
(b) Discuss : Degradation of Aromatic hydrocarbon. 7
8. (a) Discuss : Advantages and Disadvantages of Bioremediation. 7
(b) Explain degradation of Napthalene. 7

Section – II

9. Attempt any 8 : 8
- (1) Give one advantage of immobilized enzymes.
 - (2) Name different types of batch mode enzyme reactors.
 - (3) What is site-directed mutagenesis ?
 - (4) Give one disadvantage of batch mode enzyme reactor.
 - (5) Write the full form of GM foods.
 - (6) Define Single Cell Proteins.
 - (7) Which are the two most widely used Probiotic strains ?
 - (8) State any two uses of Single Cell Proteins.
 - (9) Name the two viruses commonly tried for gene therapy.
 - (10) Define stem cells.
 - (11) Give two examples of Recombinant vaccine.
 - (12) What is the full form of STRs ?
 - (13) Define : Bioremediation.
 - (14) State one advantage of biofertilizer.
 - (15) What is phytoremediation ?
 - (16) Give disadvantage of Biocontrol.
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April-2022

B.Sc., Sem.-VI

311 : Biochemistry

(Endocrinology)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :**
- (1) **All** questions in Section – I carry equal marks.
 - (2) Attempt any **three** from Section – I.
 - (3) Question – **9** in Section – II is **COMPULSORY**.

SECTION – I

Attempt any **three** :

1. (A) Explain any six characteristics of hormone. **6**
(B) Describe the hormones as secondary messenger. **8**
2. (A) Name important glands, its location and its hormones in human. **8**
(B) Explain how hormone carry out its mode of effect. **6**
3. (A) Name the diseases associated with thyroid hormone and describe it. **8**
(B) Explain Hypothyroidism in brief. **6**
4. (A) Define homeostasis and how Calcium play role in Homeostasis. **8**
(B) Give location of parathyroid hormone and briefly describe the disease associated with it. **6**
5. (A) Name the hormone secreted by pancreas and write the chemistry in brief. **7**
(B) Write a brief note on biosynthesis of pancreatic hormone. **7**
6. (A) Describe Diabetes mellitus in detail. **8**
(B) Give the role of Glucagon in the human body. **6**

7. (A) Explain the significance of progesterone hormone. 7
(B) Discuss the anatomy of Adrenal Gland. 7
8. (A) Explain the hormone secreted by male gonad gland. 7
(B) Discuss the role of Adrenaline and noradrenaline. 7

SECTION – II

9. Attempt any **eight** : 8
- (1) Give full form of TSHRH and LH.
 - (2) Where is epinephrine secreted in the human body ?
 - (3) Which hormone is secreted by alpha cells islets of Langerhans ?
 - (4) Define the term Endocrinology.
 - (5) Where adrenal gland is located in the human body ?
 - (6) Name the hormone responsible for the triggering ovulation in females.
 - (7) Is hormone and vitamins are same ? Justify your answer.
 - (8) Write full form of T3.
 - (9) Define the term Hypoglycemia.
 - (10) Name the hormone responsible to increase the level of Ca^{++} in the blood.
 - (11) Give one function of Aldosterone.
 - (12) Draw the structure of insulin.
 - (13) Write the role of FSH in the human body.
 - (14) What are Secondary messengers ?
 - (15) What do hormones do in the male body ?
 - (16) Why adrenaline is also known as flight and fight hormone ?
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