

# AF-132

April-2023

B.Sc., Sem.-VI

CC-311 : Biochemistry

(Applied Biotechnology)

Time : 2½ Hours]

[Max. Marks : 70

**Instruction :** All questions carry equal marks.

1. (a) Write a note on Biosensors. 7  
(b) Briefly describe the various steps in enzyme engineering. 7

**OR**

Discuss different types of immobilized enzymes. What are advantages of immobilized enzyme ? Describe various applications of immobilized enzyme. 14

2. (a) What are Probiotics ? Discuss their uses. 7  
(b) Write a brief note on Single cell Proteins. 7

**OR**

- (a) Discuss production of GM crops and any five advantages of them. 9  
(b) Discuss any five enzymes and their uses in food industry. 5

3. (a) What are the different types of gene therapy ? Discuss the two approaches used for gene therapy. 9  
(b) Define Recombinant vaccine. List four advantages of a recombinant vaccine. 5

**OR**

- (a) Name two sources of cells used in tissue engineering. List three important properties and functions of Scaffolds. 8  
(b) Write a note on : DNA Finger printing technique. 6

4. (a) Define xenobiotics and discuss their degradation. 7  
(b) Write a note on advantages and disadvantages of Biofertilizer. 7

**OR**

- (a) Explain what is phytoremediation. 8  
(b) What is Insitu & Exsitu bioremediation ? State their advantages. 6

5. Answer the followings : (any **seven**)

**14**

- (1) List different types of enzyme reactors.
  - (2) Give two advantages of batch mode enzyme reactor.
  - (3) What is the purpose of doing enzyme engineering ?
  - (4) Define GM crops.
  - (5) Name any two strains of microorganisms used for producing Probiotics.
  - (6) State two advantages of using microorganisms for producing Single cell Proteins.
  - (7) List two important differences between traditional vaccines and recombinant vaccine.
  - (8) Define allogenic cells and xenogeneic cells.
  - (9) Give an example of gene augmentation. Name any one detergent used in chemical gene delivery technique.
  - (10) What are recalcitrant compounds ? Give two examples.
  - (11) Define Biostimulation.
  - (12) Name the bacterial biomass used for removal of Pb and Ni.
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Seat No. : \_\_\_\_\_

# AF-132

April-2023

B.Sc., Sem.-VI

CC-311 : Biochemistry

(Endocrinology)

Time : 2½ Hours]

[Max. Marks : 70

## SECTION – I

1. (A) Write a note on adrenergic receptors. 7  
(B) Explain different models of hormonal action. 7

**OR**

- (A) Define hormones and discuss any eight features of it. 8  
(B) Define the term Endocrinology. Write the names of important gland and diseases associated with it. 6

2. (A) Explain Hyperthyroidism in detail. 12  
(B) Name the hormones released by thyroid gland. 2

**OR**

Explain PTH with respect to chemistry, biosynthesis and diseases associated with it. 14

3. Write a note on diseases associated with Pancreatic hormone. 14

**OR**

Describe the role of insulin and glucagon in the human body. 14

4. (A) Write biosynthesis of Gonadal hormone. 7  
(B) Write important characteristics of androgen and progesterone. 7

**OR**

Short note : Hormones of adrenal cortex and medulla. 14

## SECTION – II

5. Answer any **seven (07)** of the following :

**14**

- (1) What is another name of adrenaline and give its role ?
  - (2) Give two characteristics of thyroid hormone.
  - (3) What is difference between exocrine and endocrine gland ?
  - (4) What are symptoms of high progesterone level in woman ?
  - (5) What are full form of TSH, FSH, PTH and TSHRH ?
  - (6) Name the hormone secreted by male gonad gland and give its one role.
  - (7) Define Calcium homeostasis.
  - (8) Where is glucagon secreted in gland and give its role ?
  - (9) What is consequence of hyperglycemia and glycosuria in human ?
  - (10) Which gland secretes Aldosterone and give role of aldosterone ?
  - (11) Give full of c-AMP. Write the reaction catalyze adenylate cyclase.
  - (12) Write two difference between hormone and vitamins.
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