

Seat No. : _____

MQ-125

March-2019

B.Sc., Sem.-VI

**SE-311 : Biochemistry
(Applied Biotechnology)**

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :** (1) All questions carry equal marks.
(2) Draw diagram wherever necessary.

1. (A) Discuss methods used for Site-Directed Mutagenesis used in Enzyme Engineering. **14**

OR

- (i) Discuss the advantages & disadvantages of Immobilized enzymes. **7**
- (ii) What are enzyme reactors ? Discuss any one type of it. **7**
- (B) Answer the followings : (Any **four**) **4**
 - (1) Draw a labelled diagram of biosensors.
 - (2) What are Catalytic & Affinity Biosensors ?
 - (3) Give one objective of enzyme engineering.
 - (4) What are the different types of Immobilized enzymes ?
 - (5) Draw & label a Membrane Enzyme Reactor.
 - (6) What is the use of immobilized Raffinase enzyme ?

2. (A) Write a note on GM foods. **14**

OR

- (i) Discuss the advantages of Probiotics. **7**
- (ii) Briefly explain : SCP **7**
- (B) Answer the followings : (Any **four**) **4**
 - (1) Define Probiotics.
 - (2) Name any two microorganisms used for producing Probiotics.
 - (3) Name any two enzymes used in food industries.
 - (4) State one disadvantage of GM food.
 - (5) What is the use of Papain in food Industries ?
 - (6) Write the full form of SCP.

3. (A) Discuss subunit vaccines. List the advantages and disadvantages of DNA vaccines. 14

OR

- (i) What is tissue engineering ? Discuss the cell sources. 7
- (ii) Name the vectors used in gene therapy. Discuss the two approaches in gene therapy. 7
- (B) Answer the followings : (Any **Three**) 3
 - (1) What are DNA probes ?
 - (2) Give full forms of : RFLP & VNTRs.
 - (3) What are SNP's ?
 - (4) List two applications of DNA finger printing.
 - (5) Give one example of tissue engineered implant.

4. (A) Write a note on Biofertilizers and list its advantages and disadvantages. 14

OR

- (i) Discuss : Biodegradation of Naphthalene. 7
 - (ii) Explain : *In-situ* and *Ex-situ* bioremediation. List their advantages. 7
 - (B) Answer the followings : (Any **Three**) 3
 - (1) Define Biocontrol.
 - (2) List two disadvantages of phytoremediation.
 - (3) Name the bacterial biomass used for removal of Pb and Ni.
 - (4) What is Biosorption ?
 - (5) What are Xenobiotics ? Give two examples.
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MQ-125

March-2019

B.Sc., Sem.-VI

SE-311 : Biochemistry (Endocrinology)

Time : 2:30 Hours]

[Max. Marks : 70

1. (A) Write a note on characteristics of Hormone. 14
- OR**
- (i) Explain adrenergic receptors. 7
- (ii) Write a note on different models of hormone action. 7
- (B) Explain the following term : 4
- (a) What is chemical nature of hormone ?
- (b) What is the function of hormone ?
- (c) What is difference between endocrine and exocrine gland ?
- (d) Name the five endocrine glands.
2. (A) Explain chemistry, biosynthesis and diseases associated with Thyroid hormone. 14
- OR**
- (i) Describe the chemistry and diseases associated with parathyroid hormone. 7
- (ii) Explain Calcium homeostatis. 7
- (B) Write the answer in brief : 4
- (a) Name three Thyroid hormone.
- (b) Name the steps for biosynthesis of Parathyroid hormone.
- (c) What does Thyroid hormone do ?
- (d) What are symptoms of high PTH level ?
3. (A) Write a short note on diseases associated with pancreatic hormone. 14
- OR**
- (i) Explain the chemistry of pancreatic hormone. 7
- (ii) Write a brief note on biosynthesis of Pancreatic hormone. 7
- (B) Answer in brief : 3
- (a) Diabetes mellitus is caused due to deficiency of which hormone ?
- (b) List the hormones secreted by Pancreas.
- (c) Give one function of glucagon.

4. (A) Write a short note on chemistry and biosynthesis of hormones of adrenal cortex and medulla. 14

OR

- (i) Explain the chemistry of Gonad hormone. 7
 - (ii) Explain biosynthesis of Gonad hormone. 7
 - (B) Answer the following : 3
 - (a) Cushing syndrome is due to hyper secretion of which hormone ?
 - (b) Name the hormone secreted by adrenal cortex
 - (c) Name the hormone secreted by Gonads.
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