

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.
