

Seat No. : _____

AL-119

April-2022

B.Sc., Sem.-VI

**CC-311 : Biotechnology
(Metabolism and Endocrinology)
(New Course)**

Time : 2 Hours]

[Max. Marks : 50

- Instructions :** (1) **All** questions in Section – I carry equal marks.
(2) Attempt any **three** in Section – I.

Section – I

1. (a) Explain the non-oxidative phase of HMP shunt with its significance. 7
(b) Discuss the Citric acid cycle and its regulation. 7
2. (a) How fatty acids are transported into mitochondria? Enlist the difference between the fatty acid biosynthesis and degradation. 7
(b) Define Glycolysis. Discuss the preparative phase of Embden-Meyerhof pathway with its enzymes. 7
3. (a) Elaborate the anabolism of pyrimidine nucleotides. 7
(b) Discuss the oxidative and non-oxidative deamination of amino acids. 7
4. (a) Describe Urea cycle with its regulation. 7
(b) Write a note on salient features and mechanism of transamination. 7
5. (a) Discuss the classification of hormones based on their chemical composition. 7
(b) Explain the hormonal action via activating intracellular enzymes. 7
6. (a) What are steroid hormones ? Write classification and functions of steroid hormones. 7
(b) Write a note on feedback regulation mechanism of endocrine signalling. 7

7. (a) Describe the biosynthesis, secretion, and biological action of any one pancreatic hormones. 7
- (b) Write a short note on biosynthesis, secretion, and transport of (I) Thyroxine (II) Triiodothyronine. 7
8. (a) Discuss the biological significance of hypothalamus with respect to Endocrinology. 7
- (b) Which are the posterior pituitary hormones? Write their biological actions with its regulations. 7

Section – II

9. Short questions : (Attempt any **eight**) 8
- (1) Write any two high energy molecules.
 - (2) Give the role of ACP during the synthesis of fatty acids.
 - (3) What is the decarboxylation of amino acids ? State an example for it
 - (4) Which is the end product of purine metabolism in humans ?
 - (5) What is the significance of salvage pathway for purine metabolism ?
 - (6) What are Ureotelic organisms ?
 - (7) Define endocrine messengers with one example.
 - (8) Write any two examples of anterior pituitary hormones.
 - (9) Which hormones play role in the regulation of fatty acid synthesis ?
 - (10) Give the role of (i) Prolactin (ii) antidiuretic hormone.
 - (11) Where does the triacyl glycerol synthesis mostly occur in the body ?
 - (12) Give an example of anaplerotic reaction.
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April-2022

B.Sc., Sem.-VI

CC-311 : Biotechnology

(Biology of Fungi)

(Old Course)

Time : 2 Hours]

[Max. Marks : 50

- Instructions :** (1) **All** questions in Section – I carry equal marks.
(2) Attempt any **three** in Section – I.

Section – I

1. (a) Explain traditional and molecular approach used for fungi classification. 7
(b) Discuss the general characteristics of fungi. 7
2. (a) Write a note on vegetative modifications in fungi. 7
(b) Enlist the major criteria used for the classification of fungi. 7
3. (a) Elaborate the heterokaryosis in fungi. 7
(b) Describe the taxonomic status, reproduction and importance of *Saccharomyces cerevisiae*. 7
4. (a) Describe parasexual cycle. 7
(b) Discuss mating systems among fungi. 7
5. (a) What is systemic mycosis? Explain the symptoms, causes and control of it. 7
(b) Write a note on mycosis. 7
6. (a) Enlist the methods used to diagnose fungal infection. 7
(b) Describe the causative agent, treatment, and control of cutaneous mycosis. 7

7. (a) What is bioremediation ? Discuss the role of fungi in bioremediation. 7
(b) Write a short note on primary metabolites produced by fungi and its economic importance. 7
8. (a) Describe the various methods used to preserve fungal cultures. 7
(b) Write the enzymes produced by fungi with its biotechnological applications. 7

Section – II

9. Short questions : (Attempt any **eight**) 8
- (1) Write any two secondary metabolites produced by the fungi.
 - (2) Define superficial mycoses.
 - (3) Name the scientist divided fungi into three divisions.
 - (4) What is hypha ?
 - (5) Name two types of flagella found among the fungal spores.
 - (6) Which fungal is useful as a bioinsecticide ?
 - (7) Name the fungi responsible for subcutaneous mycoses.
 - (8) Give the example of club fungi.
 - (9) Name any two fungi produce antibiotics.
 - (10) What is a nutritional importance of fungi ?
 - (11) Which fungus is used to produce citric acid ?
 - (12) What is aflatoxin ?
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