SEMESTER –III

CBCS: B.Sc. Zoology (SEC)
SKILL ENHANCEMENT COURSES- SEC-01
BZO-S 302: AQUATIC BIOLOGY
(Credits 2)
THEORY

Lectures: 30 Max. Marks: 70

UNIT-I

Aquatic Biomes: Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), estuaries, intertidal zones, oceanic pelagic zone, marine benthic zone and coral reefs.

UNIT-II

Freshwater Biology Lakes: Origin and classification, Lake as an Ecosystem, Lake morphometry, River & Streams: Types, Different type of river basin Different stages of stream development.

UNIT-III

Physico–chemical Characteristics: Light, Temperature, Thermal stratification, pH, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity; dissolved gases (Oxygen, Carbon dioxide). Nutrient Cycles in Lakes-Nitrogen, Sulphur and Phosphorous.

UNIT-IV

Marine Biology: Types of Oceans, Salinity and density of Sea water, Continental shelf, Adaptations of deep-sea organisms, Coral reefs, Sea weeds.

UNIT-V

Management of Aquatic Resources: Causes of pollution- Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Water quality assessment- DO, BOD and COD, Sewage treatments. Aquatic biodiversity- Plankton, Benthos & Hill stream fishes.

Note: The question paper shall consist of two sections (A & B). Section A shall contain ten short answer type questions of six marks each and student has to attempt any five questions in about 150 words each. Section B shall consist eight long answer type questions of ten marks each and student shall be required to attempt any four questions in detail. Questions shall be uniformly distributed from the entire syllabus. The previous year paper can be used as a guideline and the following syllabus should be strictly followed while setting the question paper.

SUGGESTED READINGS

1. Luke Holt (2018). Aquatic Biology. www.calisttoreference.com

2. W. T. Edmondson (1959). Freshwater Biology. John Wiley & Sons Inc.

3. B.B. Hosetti and Arvind Kumar (2016). A Text Book of Aquatic Biology. ASTRAL Publisher. www.astralint.com

4. Philip V. Mladenov (2013). Marine Biology: A Very Short Introduction. OXFORD University Press.

5. T. T. Macan and E. B. Worthington (2012). Life in Lakes and Rivers. Collins Publisher.

PRACTICAL- BZO-C 351

M.M.: 70

A. PHYSIOLOGY

1. Preparation of hemin and hemochromogen crystals

2. Examination of permanent histological sections of mammalian pituitary, thyroid, parathyroid, pancreas, adrenal,

3. Examination of permanent slides of spinal cord, duodenum, liver, lung, kidney, bone, cartilage

B. BIOCHEMISTRY

1. Identification of unknown carbohydrates in given solutions (Starch, Sucrose, Lactose, Galactose, Glucose, Fructose)

2. Colour reactions to identify functional group in the given solution of proteins

3. Study of activity of salivary amylase under optimum conditions