

Total No. of Questions : 6]

SEAT No. :

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**P1434**

**[5124]-41**

**M.Sc.**

**BIOCHEMISTRY**

**BCH-470: Biochemical Endocrinology and Tissue Culture**

**(2008 Pattern)**

**Biochemical Endocrinology and Plant Biochemistry**

**(2010 Pattern)**

**(Semester-IV)**

*Time : 3 Hours]*

*[Max. Marks :80*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Solve section-I and section-II on separate answer sheet.*

**SECTION-I**

**(Biochemical Endocrinology)**

**Q1)** Answer any three of the following:

**[15]**

- a) Give the structural aspects of glucocorticoid hormone.
- b) Give the physiological role of prolactin
- c) Give the pathogenesis of Grave's disease
- d) Describe the metabolic conversion that are required to produce active form of calcitriol
- e) Explain the deficiency manifestations of insulin and thyroid hormone.

**Q2)** Answer any three of the following:

**[15]**

- a) Discuss the physiological role and deficiency syndrome of mineralocorticoids
- b) Give an account of enkephalin and endorphin.
- c) How hormone sensitivity of target cell identified?
- d) Discuss the mode of action of gastrointestinal hormone with example.
- e) Describe role of growth hormone on carbohydrate metabolism.

**Q3)** Answer any two of the following: [10]

- a) Write a note on Zn- finger.
- b) Explain the role of glucagon.
- c) Note on parathyroid hormone.

## **SECTION-II**

### **(Tissue Culture) (2008 Course)**

**Q4)** Answer any three of following: [15]

- a) What are advantages & disadvantages of synthetic media
- b) What is embryoculture? Give its method & applications.
- c) Explain role of secondary metabolites with example
- d) Explain terms cybrids, hybrids, haploid culture, micropropagation.
- e) What are disinfectants? Give types with examples.

**Q5)** Answer any three of following: [15]

- a) Explain meaning of suspension culture and add note on its application & limitation.
- b) Explain what are transformed cells? Give their characteristics
- c) Describe in detail different cell culture methods
- d) What are different methods of animal cell preservation.

**Q6)** Write short note on any two: [10]

- a) Hairy rood culture
- b) Sterilization
- c) Protoplast fusion methods
- d) Anther culture.

## **SECTION-II**

### **(Plant Biochemistry) (2010 Pattern)**

**Q4)** Answer any three of following: [15]

- a) What are plant hormones? Give role in plant development
- b) Explain localization of photosystems in thylakoid membrane
- c) Give the role of iron and manganese in plant growth
- d) What is plant breeding? Give applications of plant breeding in crop improvement with example.
- e) What is cryopreservation? Explain.

**Q5)** Explain the following (any three): [15]

- a) Role of nitrogen as plant nutrient
- b) Somatic hybridization
- c) Calvin cycle
- d) Isolation of protoplast
- e) Cyclic & non-cyclic electron flow in photosynthesis

**Q6)** Write note on any two: [10]

- a) Role of ethylene oxide in fruit ripening
- b) Preparation of explants.
- c) Oxygenase activity of Rubisco

