

This question paper contains 3 printed pages]

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S. No. of Question Paper : **1920**

Unique Paper Code : **2492012402**

Name of the Paper : **Hormones : Biochemistry and Function (Core)**

Name of the Course : **B.Sc. (Hons.) Biochemistry (NEP)**

Semester : **IV**

Duration : **2 Hours**

Maximum Marks : **60**

(Write your Roll No. on the top immediately on receipt of this question paper.)

There are **6** questions.

Attempt any *four* questions.

All questions carry equal marks.

Question No. 1 is compulsory.

1. (A) Justify the following statements :
 - (a) Vasopressin is called antidiuretic hormone.
 - (b) Cretinism is associated with severe mental retardation.
 - (c) Pregnant women show hyperpigmentation.
 - (d) The pituitary is considered a dual gland both functionally and anatomically.
 - (e) Growth hormone is diabetogenic.
 - (f) Glucocorticoids are permissive in action.

P.T.O.

(B) Name the following :

- (a) The specific amino acid residue in the thyroglobulin protein that undergoes iodination to eventually form thyroxine.
- (b) Hypothalamic hormone which exerts a tonic *inhibitory* effect on the secretion of prolactin from the anterior pituitary.
- (c) Placental hormone which acts as a biological "analog" to LH, maintaining the corpus luteum during the first trimester of pregnancy.

12,3

2. Explain the following :

- (a) Hormonal regulation of fight-or-flight response.
- (b) Dual role of cholecalciferol in physiology.
- (c) Positive feedback mechanism of oxytocin during parturition.
- (d) POMC as a multifunctional precursor.

5,4,3,3

3. Explain the hormones-based homeostasis of the following :

- (a) Calcium
- (b) Glucose
- (c) Blood pressure.

5×3

4. (a) Discuss the hormonal interplay (FSH, LH, Estrogen, Progesterone) during the ovarian cycle.

(b) Explain the steps involved in the synthesis of thyroxine.

(c) Explain the role of hormones of secretin family.

5×3

5. (a) Differentiate between osteoporosis and osteomalacia.
- (b) Explain with the help of an example, the long loop and short loop feedback regulatory mechanisms of hormone secretion.
- (c) Discuss the types and physiological actions of hormones in contraception. 5×3
6. Write the symptoms and causes of the following diseases : 3×5
- (a) Acromegaly
- (b) Type-II diabetes mellitus
- (c) Goiter
- (d) Myxedema
- (e) Cushing's syndrome.

