

**2021**

**BIOCHEMISTRY — HONOURS**

**Paper : CC-12**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**1. Answer *any five* questions from the following:**

2×5

- (a) What is paracrine gland? Give an example.
- (b) What is the cause of haemophilia?
- (c) What is tidal volume in respiration?
- (d) Why vasopressin is called ADH?
- (e) What is GPCR?
- (f) What is acromegaly?
- (g) What is fight or flight response?
- (h) What is the function of CCK?
- (i) Why pituitary gland is called master gland?
- (j) What are releasing hormones?

**2. Answer *any two* questions:**

- (a) (i) Describe the role of vitamin K in blood coagulation.
- (ii) Explain the regulation of respiration. 2+3
- (b) (i) How is protein digested in the stomach?
- (ii) Name the enzymes involved in this process.
- (iii) What is scatchard analysis and its importance? 2+1+2
- (c) (i) How  $\text{Ca}^{+2}$  acts as second messenger? Give an example.
- (ii) What is the role of Iodine in hormone synthesis? 3+2
- (d) (i) Name an intracellular hormone receptor. How does it work?
- (ii) What is feedback regulation in hormone action? Describe with an example. (1+2)+2

**Please Turn Over**

Answer *any three* questions taking at least one from each Unit.

### Unit-I

3. (a) How the cardiac output is controlled?  
(b) How the electrolyte imbalance is corrected?  
(c) How nucleic acids are digested? 3+4+3
4. (a) Describe the transport of CO<sub>2</sub> through blood.  
(b) Describe the mechanism of blood coagulation.  
(c) Write a short note on polycythemia. 4+4+2

### Unit-II

5. (a) Write down one important function for each of the following hormone.  
(i) FSH (ii) LH (iii) Prolactin (iv) GH  
(b) How cortisol is synthesized? Write down the pathway.  
(c) What is the function of oxytocin? 4+4+2
6. (a) What are steroid hormones? Give an example.  
(b) How does Renin–Angiotensin system work to control kidney function?  
(c) Write down the synthesis pathway of norepinephrin. 2+4+4

### Unit-III

7. (a) Mention the regulation of thyroid hormone.  
(b) How the hormones help in maintenance of blood glucose level?  
(c) What is GPCR? Mention it's function with respect to hormone action with an example. 2+4+4
8. (a) What is effector system in Endocrinology? Give an example. Explain it.  
(b) What are the biochemical actions for leptin and ghrelin?  
(c) Describe the structure and synthesis of thyroid hormone. 3+3+4
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