

**Sample Paper for two Year B.Sc (3<sup>rd</sup> year, Part-I), BIOCHEMISTRY at College Level**

**Time: 3 hours**

**Note:** Attempt any five questions. All questions carry equal marks. Question No.1 is compulsory.

Q. No.1.

0.5 X 14 = 7

**(A), Select the correct answer.**

a), The activity of the enzymes are concentrated to small portion known as

- i). active site
- ii). passive sites
- iii). allosteric sites
- iv). all are correct

b), Optimum pH value of pepsin is nearly

- i). 5.5
- ii). 7.4
- iii). 6.0
- iv). 1.5

c), Calcium/Phosphate levels in the blood are regulated by

- i). aldosterone
- ii). cortisol
- iii). adrenocorticotrophic hormone (ACTH)
- iv). parathyroid hormones (PTH) & calcitonin

d), The primary target for glucagon is

- i). liver
- ii). hypothalamus
- iii). pancreas
- iv). kidney

e), Continuous bleeding from an injured part of body is due to deficiency of

- i). Vitamin A
- ii). Vitamin B
- iii). Vitamin K
- iv). Vitamin E

f), Which of the following minerals deficiency may result into impaired growth and development, skin lesions and loss of appetite?

- i). Zinc
- ii). Cobalt
- iii). Iron
- iv). Magnesium

g), Which of the following is *not* primarily a function of blood plasma?

- i). Transport of hormones
- ii). Maintenance of red cell size
- iii). Transport of chylomicrons
- iv). Transport of O<sub>2</sub>

**(B). Find out True / False**

- i). Iodine is a part of thyroid hormone and is essential for the prevention of muscle weakness.
- ii). Lactose is very effective in promoting the calcium absorption.
- iii). High consumption of fatty acids as nutrients leads to the multiplication of oral bacteria.
- iv). The first humoral immune response against antigen is the formation of immunoglobulins M (IgM).
- v). Calcium is the prime requirement in protein metabolism and oxidation reactions.
- vi). The scurvy can be inhibited by using ascorbic acid or fruit containing ascorbic acid.
- vii). The enzyme without its co-enzyme is known as iso-enzyme.

Q. No.2. (a), Describe the classification of enzyme. Give one example of each.

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(b), Describe the effect of temperature and pH on enzyme activity.

5



- Q. No.3. (a), What are peptide hormone? Give examples. 2  
(b), Discuss the mechanism and functions of glucagon in regulating glucose metabolism. 5
- Q. No.4. (a), Define vitamins and classified them with examples. 2  
(b), Discuss the structure and physiological functions of vitamin D. 5
- Q. No.5. (a), What is innate immunity. Give names of cells on innate immunity. 2  
(b), Draw and discuss the general structure of antibody molecules. 5
- Q. No.6. (a), Define hematocrit and hemostasis. 2  
(b), Discuss the IgE dependent hypersensitivity. 5
- Q. No.7. (a), What are trace elements, give examples. 2  
(b), Describe the source, functions and requirements of calcium and phosphorous. 5