

2 0 1 4

ZOOLOGY

(Major)

Paper : 5.3

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Choose the correct answer : 1×7=7

(a) The pituitary gonadotropins are

- (i) lipoproteins
- (ii) glycoproteins
- (iii) metalloproteins
- (iv) catecholamines

(b) The stimulation of intestinal absorption of dietary calcium is the principal biological role of

- (i) parathyroid hormone
- (ii) thyronine
- (iii) calcitonin
- (iv) calcitriol

(c) Which of the following is not a physiological action of insulin?

- (i) Decreased gluconeogenesis in the liver
- (ii) Increased glucose entry in muscle
- (iii) Decreased glucose entry in adipose tissue
- (iv) Increased amino acid uptake in muscle

(d) The most potent mineralocorticoid secreted by the adrenal cortex is

- (i) corticosterone
- (ii) aldosterone
- (iii) cortisol
- (iv) 11-deoxycorticosterone

(e) Dendritic cells present antigens to

- (i) macrophages
- (ii) naive T lymphocytes
- (iii) naive B lymphocytes
- (iv) neutrophils

(f) The antibody class, most effective in complement activation is

(i) IgA

(ii) IgE

(iii) IgG

(iv) IgM

(g) An example of a live attenuated vaccine is

(i) hepatitis B vaccine

(ii) oral poliovirus vaccine

(iii) whole-cell pertussis vaccine

(iv) tetanus toxoid

2. Distinguish between the following : $2 \times 4 = 8$

(a) Central and Peripheral lymphoid organs

(b) Helper T cells and Cytotoxic T cells

(c) Myxedema and Graves' disease

(d) Oxytocin and Vasopressin

3. Write short notes on (any three) : $5 \times 3 = 15$

(a) Burnet's clonal selection theory

(b) Antigen-antibody interactions

(c) Autoimmune diseases

(d) Mechanism of steroid hormone action

(e) Histology of the endocrine pancreas

(4)

4. What is the hypothalamohypophyseal axis? Discuss the role of hypothalamic factors in the regulation of the endocrine function of the anterior pituitary. $3+7=10$

Or

Describe the histology and endocrine functions of the ovary. $5+5=10$

5. What is innate immunity? Discuss the mechanisms of innate host defense. $2+8=10$

Or

What are antigens? Discuss the properties that an antigen must possess to be capable of eliciting an adaptive immune response. $2+8=10$

6. How are naive T cells activated to form effector T cells? Discuss the role of cytotoxic T cells in host defense. $4+6=10$

Or

Discuss the respective roles of insulin and glucagon in glucose homeostasis. $5+5=10$
