

2013

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 interstitial cells of Leydig secrete

- (i) prolactin
- (ii) testosterone
- (iii) luteinizing hormone
- (iv) calcitonin

(b) Nuclear receptors mediate the action of

- (i) growth hormone
- (ii) insulin
- (iii) adrenocorticotrophic hormone
- (iv) thyroxine

- (c) Innate immunity is found in
- (i) invertebrates
 - (ii) vertebrates
 - (iii) plants
 - (iv) all plants and animals
- (d) Thyroid hormone deficiency in adult causes
- (i) myxedema
 - (ii) cretinism
 - (iii) Graves' disease
 - (iv) acromegaly
- (e) The hormone transported by the hypothalamo-hypophyseal portal system is
- (i) oxytocin
 - (ii) prolactin
 - (iii) gonadotropin-releasing hormone
 - (iv) adrenocorticotrophic hormone
- (f) The antibody which is produced first in an immune response is
- (i) IgA antibody
 - (ii) IgE antibody
 - (iii) IgG antibody
 - (iv) IgM antibody

(g) The cell which is a professional antigen-presenting cell is a

- (i) neutrophil
- (ii) T lymphocyte
- (iii) dendritic cell
- (iv) None of the above

2. Answer briefly :

2×4=8

- (a) What is an adjuvant?
- (b) Name the hormones of the anterior pituitary.
- (c) What action does glucagon have on carbohydrate metabolism?
- (d) What is 'linked recognition' in B lymphocyte activation?

3. Write short notes on (any three) :

5×3=15

- (a) Neurohypophyseal hormones
- (b) Chemical classes of hormones
- (c) Physiological actions of insulin
- (d) Pathogen-associated molecular patterns
- (e) Primary immuno deficiency

4. Describe the synthesis and secretion of the thyroid hormones. 7+3=10

Or

Describe the hormonal regulation of calcium homeostasis in the body. 10

5. What is a hypersensitivity reaction? Discuss the immunological basis of allergy. 2+8=10

Or

What are thymus-dependent antigens? Describe the generation of a humoral immune response to thymus-dependent antigens. 2+8=10

6. Describe the structure of a typical antibody molecule. Write briefly about the function of the different antibody classes. 5+5=10

Or

Describe the histological structure of the adrenal gland. Write briefly about the functions of the adrenal medullary hormones. 5+5=10

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