

2015

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 of the following :

1×7=7

- (a) Thyroid hormone synthesis involves the iodination of
- (i) tyrosine
 - (ii) alanine
 - (iii) tryptophan
 - (iv) methionine
- (b) The hormone which acts through a nuclear receptor is
- (i) growth hormone
 - (ii) insulin
 - (iii) oxytocin
 - (iv) thyroid hormone

- (c) A deficiency of parathyroid hormone can lead to
- (i) lowering of inorganic phosphate and elevation of calcium in blood
 - (ii) lowering of calcium and elevation of inorganic phosphate in blood
 - (iii) lowering of both inorganic phosphate and calcium in blood
 - (iv) elevation of both calcium and inorganic phosphate in blood
- (d) In the adrenal gland, glucocorticoids are secreted by the
- (i) zona glomerulosa
 - (ii) zona fasciculata
 - (iii) zona reticularis
 - (iv) medulla
- (e) The binding of an antigen by its antibody involves
- (i) hydrogen bonds
 - (ii) electrostatic forces
 - (iii) van der Waals forces
 - (iv) All of the above

(f) The antibody which can exist as a dimer is

(i) IgA

(ii) IgG

(iii) IgE

(iv) IgM

(g) Peyer's patches are secondary lymphoid organs found

(i) in the nasal epithelium

(ii) within the wall of the small intestine

(iii) in the lining of the stomach

(iv) in the lung

2. Answer briefly :

2×4=8

(a) What is immunogen?

(b) Identify the underlying hormonal abnormalities in diabetes mellitus and diabetes insipidus.

(c) What is calcitonin?

(d) What is adjuvant?

3. Write short notes on any *three* of the following : 5×3=15

(a) Endocrine function of the posterior pituitary

(b) Biosynthesis of thyronine

(c) Autoimmunity

(d) Pathogen-associated molecular patterns

(e) MWC molecules

4. Describe the histology and endocrine function of the mammalian testis. 5+5=10

Or

Describe the histology and function of the endocrine pancreas. 4+6=10

5. Discuss the mechanism of action of protein hormones. 10

Or

Describe the structure of an antibody molecule and write briefly about the function of the different antibody classes. 4+6=10

(5)

6. Distinguish between primary and secondary immunodeficiencies. Write a brief note on the acquired immunodeficiency syndrome. 4+6=10

Or

Discuss the role of B and T lymphocytes in the generation of a humoral immune response.

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