

2021

PHYSIOLOGY — HONOURS

Paper : CC-14

(Excretory System, Environmental Pollutants and Human Health)

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.*

Group - A

1. Answer **any five** questions : 2×5
- (a) State the importance of Bayliss effect in kidney.
 - (b) Define filtration fraction.
 - (c) What are extraglomerular mesangial cells?
 - (d) What do you mean by poikilothermic animal?
 - (e) “The sebaceous gland is an important site for androgen processing and modulation.” — Justify the statement.
 - (f) What are organophosphate pesticides? Give one example.
 - (g) What do you mean by Half-life of radioactive molecules?
 - (h) What do you understand by Snow-blindness?

Group - B

2. Answer **any two** questions :
- (a) Give a brief description of non-excretory functions of kidney. 5
 - (b) Describe the role of Pelvic nerve, Pudendal nerve and Hypogastric nerve in micturition. 5
 - (c) Distinguish between eccrine and apocrine sweat glands. Which are the modified apocrine glands? 3+2
 - (d) What is Pyrexia? Briefly describe the role of brown fat in the regulation of body temperature. 2+3
 - (e) Discuss briefly the effects of Lead and Aluminium poisoning on human health. 5

Please Turn Over

Group - C

Answer *any three* questions.

3. (a) Describe the structural peculiarities of renal tubular epithelial cells.
(b) Describe the glucose handling by renal tubules and demonstrate its relation with plasma glucose level. 5+5
 4. (a) Describe the peculiarities of renal circulation.
(b) Describe the renal regulation of acid-base balance. 4+6
 5. (a) Describe the forces involved in glomerular ultra-filtration.
(b) What are podocytes?
(c) State the pathophysiological significance of RBC and Ketone bodies in urine. 5+2+3
 6. (a) Describe the mechanism of sweat formation and secretion.
(b) State any four important features of cutaneous circulation. 6+4
 7. (a) What is non-ionising radiation? Describe briefly the long-term effects of non-ionising radiation on human body.
(b) What protective measures should be taken by human being while working with radioactive elements? (2+4)+4
 8. (a) How can fluorine and arsenic affect human health?
(b) Mention the importance of chelation therapy in acute arsenic toxicity. (3+3)+4
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