

2015

PHYSIOLOGY

[Honours]

PAPER – IV

Full Marks : 90

Time : 4 hours

*The figures in the right hand margin indicate marks
Candidates are required to give their answers in their
own words as far as practicable*

Illustrate the answers wherever necessary

GROUP – A

Answer any **two** questions, taking
one from each Subgroup : 15 × 2

Subgroup – A(a)

1. (a) Discuss the histological structure of anterior pituitary gland.

- (b) How are T_3 and T_4 synthesized in the thyroid follicle ?
- (c) State briefly the regulation of calcitonin secretion. 5 + 6 + 4

2. (a) State briefly how the matured follicle is produced in the ovary and the mechanism of release of ovum from it.
- (b) Discuss the role of anterior pituitary in the process of spermatogenesis. (6 + 4) + 5

3. (a) How is trilaminar germ disc formed ?
- (b) Describe the development of alimentary system in human foetus with suitable diagram. 8 + 7

Subgroup – A (b)

4. (a) Discuss the role of suprachiasmatic nuclei in the regulation of biorhythm.
- (b) Describe how circadian rhythm influences the release of hormones LH and FSH. 7 + (4 + 4)
5. (a) State the principle of Western blotting.

(b) Write down the basic molecular structure of antibody and discuss the mechanism of interaction between antigen and antibody. 7 + (4 + 4)

6. (a) Discuss the effects of alcoholism in human.

(b) Describe the dietary management of Xerophthalmia.

(b) Write preventive measures of tuberculosis. 7 + 4 + 4

GROUP – B

Answer any **five** questions, taking at least **two** from each Subgroup : 8 × 5

Subgroup – B(a)

7. State with labelled diagram the hypothalamo-hypophyseal portal axis. What do you mean by neurohypophyseal and hypophysio-tropic neurons? 4 + 4

8. What do you mean by hormone receptor? State the role of G-protein in hormone action. 3 + 5

9. Describe the hormonal control of development of mammary gland. 8
10. Describe any two pregnancy tests. 8
11. Describe the process of zygote formation (monozygote) starting from fertilization. 8

Subgroup – B(b)

12. Describe the biorhythmical influence of ovarian steroids in human female. 4 + 4
13. Write notes on immuno-electrophoresis. 8
14. Briefly describe the ways by which phagocytic cells can kill microorganisms. 8
15. Describe briefly the different methods of human population control. 8
16. State the effects of food pollution on human health with examples. 8

GROUP – C

Answer any **five** questions, taking
at least **two** from each Subgroup: 4 × 5

Subgroup – C (a)

17. How does **STH** help in bone and muscular growth? 4
18. Discuss in brief the physiological functions of prolactin. 4
19. What are the importances of blood testis barrier? 4
20. Discuss the peculiarities of foetal circulation. 4
21. Write down the function of epididymis. 4

Subgroup – C (b)

22. What do you mean by "Jet-lag"? 4
23. What do you mean by hypersensitivity reaction? 4

24. What are the hazards of immunization ? 4
25. What is dental caries ? How can it be prevented ? 2 + 2
26. Describe briefly the preventive measures of poliomyelitis. 4
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