

2021

PHYSIOLOGY — HONOURS

Fifth Paper

Full Marks : 100

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Unit - 9

1. (a) "Posterior pituitary hormones are neurohormones"– Justify the statement.
(b) Discuss the actions of posterior pituitary hormones on :
(i) Milk ejection in lactating mothers
(ii) Regulation of osmolarity in blood. 4+(3+3)
- Or,*
- (a) Discuss the functions of ACTH in human body.
(b) State the endocrinological role of the following diseases :
(i) Cushing Syndrome
(ii) Cretinism. 6+(2+2)
2. (a) What is Thyroglobulin?
(b) Discuss the role of sodium-iodide pump in the synthesis of thyroid hormones.
(c) Discuss the etiology and clinical features of Hashimoto's Disease. 2+4+4
- Or,*
- (a) Discuss the physiological functions of PTH.
(b) With a suitable diagram describe the histological structure of the thymus gland.
(c) What are thymosins? 4+4+2
3. (a) Discuss the anti-inflammatory and immuno-suppressive function of glucocorticoids.
(b) Discuss primary and secondary aldosteronism. 6+4
- Or,*
- (a) Mention the biochemical pathway for the synthesis of adrenal medullary hormones.
(b) What are kinins? State their physiological role.
(c) Discuss the role of prostaglandins in inflammation. 3+4+3

Please Turn Over

4. (a) Describe the localisation of α and β cells in human pancreatic islets of Langerhans.
(b) Discuss the pathophysiology of type I and II diabetes.
(c) What is hyperinsulinism? 2+6+2

Or,

- (a) What are growth factors?
(b) Discuss the physiological functions of the following :
(i) PDGF
(ii) EGF
(iii) VIP
(iv) GIP 2+(2×4)

5. (a) What do you mean by ultradian and infradian rhythms?
(b) Discuss the role of pineal and prolactin in the regulation of biorhythms. (2+2)+(3+3)

Or,

- (a) How does shift work affect biorhythm?
(b) Write a short note on time keeping genes.
(c) What do you mean by jet lag? 4+4+2

Unit - 10

6. (a) Discuss the physiology of puberty.
(b) Describe the role of sertoli cells and interstitial cell of leydig cells in testicular function. 4+(3+3)

Or,

- (a) What is oogenesis?
(b) Describe the physiological mechanism of ovulation.
(c) Discuss the functions of corpus luteum. 2+6+2

7. (a) Describe the changes in the ovary and uterus in different phases of menstrual cycle.
(b) What are the physiological changes associated with menopause? 6+4

Or,

- (a) Discuss the immunological basis of pregnancy test.
(b) State briefly the functions of placenta.
(c) What is lactational amenorrhoea? 4+4+2

8. Describe the development of urinogenetal system in human embryo with a suitable diagram. 6+4

Or,

- (a) Write a brief note on Gastrulation and Placentation.
(b) What do you mean by 'committed stem cells'? (4+4)+2

9. (a) What do you mean by protein efficiency ratio (PER) and net protein utilization (NPU)?
(b) What is BMR? Discuss briefly the factors affecting BMR. (2+2)+(2+4)

Or,

- (a) What do you mean by ACU?
(b) What are protein spacers?
(c) Prepare a diet chart for a pregnant woman mentioning the principle of formulation of her balanced diet. 2+2+(2+4)

10. (a) Discuss the principles and methods used in family planning.
(b) Write a short note on prevention of AIDS and hepatitis. 5+(2½+2½)

Or,

Write short notes on : 5×2

- (a) Nutritional anaemia
(b) Principles and social importance of immunisation against diseases.
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