

2022

M.Sc.

4th Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-401

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

UNIT-401.1 ENDOCRINOLOGY

Group-A

Answer any *two* questions.

2×2

1. Write briefly on pituitary stem cells.
2. What is TTR?

(Turn Over)

3. What is CASR?
4. Mention any two anti-gonadal functions of melatonin.

Group-B

Answer any *two* questions. 2×4

5. Discuss the unique blood supply in the pituitary gland with proper diagram. 3+1
6. Mention the transporting role of TBG of T3 and T4 hormone. Describe the biosynthesis steps of adrenocortical hormones. 1+3
7. Discuss the functions of parathyroid hormone on bone with special reference to its actions on different bone cells.
8. Explain in brief how adrenergic receptors play the major role in the regulation of cardiocascular functions? Write down the general functions of glucocorticoids. 2+2

Group-C

Answer any *one* question. 1×8

9. Describe the synthesis of TRH displaying the structural organization of TRH gene with suitable diagram. Discuss the functions of TRH on pituitary

with special emphasis to its role as PRF.

(3+1)+(3+1)

10. Discuss the role of adrenal gland hormones on blood pressure, blood volume and serum sodium ion to maintain homeostasis in a severe accident. Describe in brief the structural components of thyroid binding receptors domain with a suitable diagram. Write down in brief the protective role of melatonin against breast cancer. 4+2+2

UNIT-401.2 REPRODUCTIVE PHYSIOLOGY

Group-A

Answer any *two* questions. 2×2

1. What is bipotential gonad? 2
2. What are spermiogenesis and spermiation? 1+1
3. Mention the importance of pinopodes. 2
4. Briefly mention the features of non-tubal ectopic pregnancy. 2

Group-B

Answer any *two* questions. 2×4

5. Describe the genetic regulation of male gonadal

development mentioning the role of different transcription factors. 4

6. Briefly write down the sign and symptoms of ectopic pregnancy. Write in short the medicinal treatment protocol of ectopic pregnancy. 2+2
7. Describe the mechanism of action of 'combined' and 'progestogen-only' hormonal contraceptives. 2+2
8. Write down briefly the steps of cardiovascular development from angiogenetic cell clusters during embryonic life of foetus with suitable diagram. 4

Group-C

Answer any *one* question. 1×8

9. State briefly the organisation of seminiferous tubule with special reference to its cell types. Describe the different phases of spermatid differentiation. Discuss briefly the molecular basis of implantation. 2+3+3.
10. Define endometriosis. Write down the risk factors of it. State the treatment protocol of endometriosis. 1+3+4

[*Internal Assessment – 10 Marks*]