

2021

PHYSIOLOGY

[Honours]

PAPER – VI

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 **one** of the following : 10 × 1

1. Write about the synthesis, storage and functions of thyroid hormone (T₃). 4 + 2 + 4
2. Write down the different steps of spermatogenesis. State the hormonal regulation of testicular functions. 6 + 4

GROUP – B

Answer any **four** of the following : 20 × 4

3. Write a note on fertilization. What is implantation ? Briefly describe the physiological events involved in implantation. Write the hormonal regulation of fertilization and implantation. 4 + 2 + 6 + 4 + 4
4. What do you know about the formation, structure and functions of placenta ? Give a brief account of the placental hormones. What is the fate of placenta ? What is ectopic pregnancy ? 4 + 4 + 4 + 4 + 2 + 2
5. Describe diagrammatically the double helical structure of DNA. Write the functions of DNA. Give a brief account of DNA damage and repair. What is transcription ? Give a brief account of transcription. 6 + 2 + 5 + 2 + 5
6. What is gene therapy ? Give a brief account of recombinant DNA technology (RDT). What are vectors ? Give examples. Write the applications of gene therapy and RDT. 2 + 6 + 2 + 2 + 4 + 4

(Turn Over)

7. What are interferons ? What are Single cell proteins ? What do you know about monoclonal antibodies ? Write about their production, application and utility of monoclonal antibodies. 3 + 3 + 4 + 4 + 4 + 2
 8. What is a 'sample' ? Discuss the method of computation merit and demerits of median. What is null hypothesis ? What is standard error ? What are computer viruses ? 2 + (5 + 2 + 2) + 2 + 4 + 3
 9. Write the principle and applications of spectrophotometer and Western Blot technique. (5 + 5) + (5 + 5)
 10. Write about the mechanisms of hormone actions involving Cyclic AMP, and IP3-DAG. What do you know about hypothalamo-hypophysial axis ? Discuss the functions of oxytocin and vesopressin. 4 + 4 + 4 + 4 + 4
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