2021
PHYSIOLOGY
[HONOURS]
Paper : V

Full Marks : 75   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.

GROUP–A

1.   Answer any **five** questions: 1×5=5

   a)   Name one endogenous and one exogenous substance used to determine Glomerular Filtration Rate (GFR)?

   b)   What is meant by auto-antigens?

   c)   Name one live vaccine.

   d)   State the function of NK cells.

   e)   What are 'exons'?

   f)   What are histones?

   g)   What is cDNA?

GROUP–B

2.   Answer any **six** questions: 2×6=12

   a)   What is meant by DNA polymorphism?

   b)   Define cytokines with examples.

   c)   What is a nucleosome?

   d)   Why conversion of ammonia to urea is important?

   e)   State the functions of F_c and F_{ab} fragments of immunoglobulins.

   f)   What is frame shift mutation?

   g)   Name two hormones secreted from kidney.

   h)   What is pleiotropism?

GROUP–C

Answer any **three** questions: 6×3=18

3.   State about the properties of antigens.

4.   What are Okazaki fragments? Where are these found? State the importance of Okazaki fragments.
                                                 3+1+2=6

5.   What do you mean by secondary immune response? Mention its role in vaccination programme.
                                                 3+3=6

6. Write a note on DNA packaging.

7. Discuss the role of renin-angiostensin system in the regulation of blood pressure.

GROUP–D

Answer any **four** questions: $10 \times 4 = 40$

8. Write short notes on: $5 + 5 = 10$

   a) Monoclonal Antibody

   b) Gene therapy

9. a) What is Rho independent chain termination during transcription?

   b) Discuss briefly about the main events of RNA synthesis. $4 + 6 = 10$

10. a) Discuss briefly about the maintenance of acid-base balance of the body by kidneys.

    b) What is micturition reflex? $7 + 3 = 10$

11. a) How are motifs involved in transcription?

    b) What is meant by Zn-finger motif?
    $6 + 4 = 10$

12. a) Write the functions of repetitive sequence.

    b) How does attenuator work in t_{vp} operon?
    $4 + 6 = 10$

13. a) What is counter-current exchanger?

    b) Discuss how hypertonic and hypotonic urine is formed in the kidney. $4 + 6 = 10$

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