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End Semester Examination of Semester-I, 2015

Subject : PHYSIOLOGY (HONS.) (UG)

Paper : PHYH-101

Full Marks : 40

Time : 2 Hrs

The figures in the margin indicate the marks corresponding to the question

Candidates are requested to give their answers in their own word as far as practicable.

Illustrate the answers wherever necessary.

Group A

Answer **any two** questions from the following : 10x2=20

1.
 - a) Discuss briefly any two important factors that can control fluidity of plasma membrane.
 - b) Write down the compositional differences between cytoribosomes and mitoribosomes.
 - c) Discuss in brief the role of microtubule associated cellular proteins in organelle movements.
 - d) What do you understand by erythrocyte ghost?
3+2+3+2

2.
 - a) Define viscosity.
 - b) State Poisseuille's law of blood flow.

(2)

- c) How can you measure the osmotic pressure of a biological fluid using freezing point depression method. $2+2+6=10$
3. a) Describe the biosynthetic steps of haem.
b) Is there any endogenous source of carbon monoxide?
c) How is lymph formed in our body?
d) Mention one clinical significance of platelet count. $5+1+3+1$
4. a) Discuss the ionic basis of development of depolarization, repolarization and after hyperpolarization of a single volley of action potential in the nerve fibre.
b) Distinguish between chemical and electrical synapses.
c) State the functional significance of isotonic and isometric contractions of skeletal muscle. $5+3+2$

Group-B

Answer any two questions from the following: $5 \times 2 = 10$

5. a) How many isomers could be formed from glucose? Mention any two epimers of glucose with structural formulae.
b) What are phi and psi angles in a peptide body? $1\frac{1}{2}+2+1\frac{1}{2}$

(3)

6. a) Classify lipoproteins.
b) Why is HDL called good cholesterol? $3\frac{1}{2}+1\frac{1}{2}$
7. a) How is the concept of enthalpy related to thermodynamics?
b) What do you mean by radioactive decay? $2\frac{1}{2}+2\frac{1}{2}$
8. a) Write down the structural formula of tryptophan and mention its one better abbreviation.
b) What do you understand by hyperchromicity of DNA?

Group-C

Answer any five out of ten questions: $2 \times 5 = 10$

9. What do you mean by W-3 fatty acid? Give an example. $1+1$
10. Explain the concept of antiport with an example. $1+1$
11. What are zwitterions?
12. What is meant by chronaxie? Mention its significance. $1+1$
13. What do you mean salting in and salting out? $1+1$
14. Do the while muscles look really white?
15. What are synapse-en-passants?
16. State the significance of melting temperature of DNA.

(4)

17. Define ionophores. Give an example. 1+1
18. Explain the concept of geometrical isomerism of fatty acids.
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