2017

PHYSIOLOGY

[Honours]

(CBCS)

[First Semester]

PAPER – C2T

Full Marks : 40

Time : 2 hours

Answer **all** questions

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

1. Answer any *five* questions from the following : 2 × 5

(*a*) What do you mean by isoelectric point of protein ? 2

(*b*) What is Beer-Lambert's law ? 2

(*c*) Describe the importance of buffers in physiological system. 2

(*d*) What is allosteric enzyme ? 2

(*e*) What is "Km" ? 2

(*f*) Write down the principle of chromatography. 2

(*g*) State the second law of thermodynamics. 2

(*h*) How does adsorption differ from absorption ? 2

GROUP – B

2. Answer any *four* questions from the following : 5×4

(*a*) Define isoenzymes with suitable examples. What is ribozyme ? $4 + 1$

(*b*) State the principles and uses of spectrophotometer. What is density gradient centrifugation ? $1\frac{1}{2} + 1\frac{1}{2} + 2$

(*c*) Discuss two important liver function tests mentioning their clinical significance. 5

(*Continued*)

(*d*) Write down the use of radioisotopes in physiological studies. 5

(*e*) Define nanoparticles. Mention their applications in physiology. 2 + 3

(*f*) What are meant by homogenization and ultrasonication ? $2\frac{1}{2} + 2\frac{1}{2}$

GROUP– C

3. Answer any *one* question from the following : 10×1

(*a*) Derive the Michaelis-Mention equation in the following conditions :

(*i*) Substrate concentration equal to km

(*ii*) Substrate concetration > km

(*iii*) Substrate concentration < km

What changes of velocity do occur ? How, will you obtain Lineweaver-Burk double reciprocal plot from Michaelis-Mention equation ? (2 + 2 + 2) + 4

(*b*) Describe the role of kidney in maintaining the body pH in human. State the laws of osmosis. 5 + 5