Class Test- 1st year-2017

A. Answer any six (1X6 = 6)

1)Name one non reducing disaccharide.
2) The α and β cyclic forms of D glucose are referred to as_____
3) Name the four basic actions performed by human heart.
4) What do you mean by pithing?
5) What do you mean by myogenicity of the heart?
6)What do you mean by induced current?
7) Name the important plasma proteins.
8) Name the dye uses to measure blood volume.
9) What is erythropoiesis?

B. Answer any six (2X6 = 12)

1) What are the enediols?
2) What is mutarotaion?
3) Explain why optical rotation of a freshly prepared solution of D- glucose gradually changes with time.
4) Name the five segments of a nerve muscle preparation.
5) Why SA node and AV node are called the pacemaker and reserve pacemaker of heart respectively?
6) What do you mean by plasmapheresis?
7) What is the difference between vasodilatation and vasoconstriction?
8) Define positive feedback regulation with example.
9) Name the hormone that regulate RBC formation and mention from where it is secreted.

C. Answer any one (1X7 = 7)

1) Write a short note on valves of the human heart.What do you mean by latent period and refractory period?Why the left ventricular wall is normally thicker than that of the right ventricular wall? (4+2+1)

2) What do mean by ESR? Mention the normal value of it. What are the basic factors that influence ESR? Describe the physiological significance of ESR. (2+1+2+2)

Kalyani Mahavidyalaya

1st Year Test Examination – 2017

B.Sc. (Hons.)

PHYSIOLOGY

Paper - I

Full Marks : 50 Time : 2 hour

1. Answer any **six** from the following questions: 1 X 6 = 6

i) What is pernicious anemia?
ii) What is methaemoglobin?
iii) State two important function of mitochondria.
iv) What do you mean by chromatolysis?
v) What do you mean by buffer capacity?
vi) What is the function of lysozymes?
vii) What are the functions of Nissl granules?
viii) What do you mean by erythrocyte ghost?

2. Answer any **six** from the following questions: 2 X 6 = 12

i)What is plasmin? Mention its role in coagulation.
ii) How does gap junction differ from tight junction?
iii) What do you mean by chronaxie and rheobase?
iv) What is iodine number?
v) Discuss the various functions performed by glial cells in nervous system.
vi) State two differences between competitive and non-competitive inhibition.
vii) What do you mean by isomerism ?
viii) What is tonicity?

3. Answer any **two** from the following questions: 6 X 2 = 12

i) What is saltatory conduction? How nerve impulse is propagated through myelinated axon with the help of saltatory conduction? (1+5)
ii) Briefly describe the intrinsic mechanism of blood clotting. (6)
iii) What is allosteric modulation? Briefly discuss the two types of modulation. (2+4)
iv)Write down the significance of Henderson's equation. Write down the biological importance of osmosis. (2+4)

4. Answer any **two** from the following questions: 10 X 2 = 20

i) Describe the process of origin of an action potential mentioning its ionic basis in a neurone. (10)

ii) What do you mean by procoagulant and anticoagulant? What do you mean by T and R state of Hb? Give exanpleof one product of haemoglobin? Briefly describe the fate of haemoglobin.

(3+3+1+3)

iii) Define Km of an enzymatic reaction. Briefly describe the non-competitive inhibition of enzyme.What is alloenzyme?

(2+7+1)

iv) What do you mean by buffer solution? Can you measure the pH of a gas? Write down the importance of bicarbonate buffer in human physiology. How the osmotic pressure is determined?

(1+1+4+4)

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Kalyani Mahavidyalaya

1st Year Test Examination – 2016

B.Sc. (Hons.)

PHYSIOLOGY

Paper - I

Full Marks : 50 Time : 2 hour

1. Answer any **six** from the following questions: 1 X 6 = 6

i) What is polycythemia?
ii) What is function of fibrinogen?
iii) State one identifying character of eukaryotic and prokaryotic cell.
iv) What do you mean by chromatolysis?
v) Define nano particle.
vi) Define action potential.
vii) What are the functions of Nissl granules?
viii) What do you mean by Brownian motion?

2. Answer any **six** from the following questions: 2 X 6 = 12

i)What is D-antigen? Mention its significance.
ii) How does gap junction differ from tight junction?
iii) Why circulating blood does not clot?
iv) What is the difference between myelinated and unmylinated nerves?
v) What is the role of myelin sheath in a medullatedneurone?
vi) Write down the structure of F_1particle.What is CAM?
vii) Define buffer solution mentioning the composition of phosphate buffer?
viii) What is the role of vitamin K in coagulation ?

3. Answer any **two** from the following questions: 6 X 2 = 12

i) Describe the process of propagation of neural impulse in different nerves. (6)
ii) Classify neuron on the basis of Erlanger and Gasser. (6)
iii) Discuss the mechanism of cooperative binding of oxygen by haemoglobin. (6)
iv)How do polar, non-polar or neutral molecule pass through cell membrane? RBC membrane is fluid in nature while sarcolema shows rigidity – explain. (3+3)

4. Answer any **two** from the following questions:10 X 2 = 20

i) What do you mean by plasmapheresis? Discuss about the function of plasma proteins. Mention the significance of ESR. (2+4+4)

ii) What do you mean by procoagulant and anticoagulant? Give example of each. What do you mean by T and R state of Hb? What is HbA1c?
(4+2+3+1)

iii) Describe in brief about the ultrastructure of mitochondria with diagram. Write down the name of two enzyme present in mitochondrial matrix and mention their respective function. What is the function of endoplasmic reticulum?
(5+2+3)

iv) State the 2nd law of thermodynamics. What do you mean by entropy and enthalpy? Briefly describe the fluid-mosiac model of plasma membrane. [2+(2+2)+4]

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1st Year Test Examination – 2015

B.Sc. (Hons.)

PHYSIOLOGY

Paper - I

Full Marks : 50 Time : 2 hour

1. Answer any **six** from the following questions: 1 X 6 = 6

i) What is the main function of Nissl granules in a neurone?
ii) What is thromboplastin?
iii) How many pyrole groups/rings present in a protoporphyrin compound?
iv) What do you mean by facilitated diffusion?
v) Define viscosity.
vi) Mention the differences between Nucleoside and Nucleotide.
vii) What is active zone of a synapse?
viii) What is the unit of measuring radioactivity?

2. Answer any **six** from the following questions: 2 X 6 = 12

i)Define Chronaxie and Rheobase.
ii) What is the difference between lyophobic and lyophilic sol?
iii) What is rouleaux formation?
iv) What is D-antigen? Mention its significance?
v) What is the difference between plasma and serum?
vi) What is function of lysozyme?
vii) What do you mean by Fluid–Mosaic model of plasma membrane?
viii) What do you mean by isoelectric pH?
ix) What do you mean by resting membrane potential and electrotonic potential?
x) State the physiological importance of surface tension.

3. Answer any **two**from the following questions: 6 X 2 = 12

i) Discuss the process of propagation of nerve impulse in different nerve fibres. What is the role of Schwann cell in a neurone? (5+1)
ii) State the principles of chromatography? Name the different types of chromatography. (4+2)
iii) What do you mean by lymph? Discuss the composition and functions of lymph. (1+4)
iv) Describe the ultrastructure of endoplasmic reticulum with a labelled diagram. (6)

4. Answer any **two** from the following questions:10 X 2 = 20

i) What do you mean by plasmapheresis? Discuss about the function of plasma proteins. Mention the significance of ESR. (2+4+4)

ii) What do you mean by hemostasis? Briefly discuss the intrinsic mechanism of blood coagulation. (2+8)

iii) Describe the process of generation of action potential in a neurone. What do you mean by maximal and supramaximal stimulus? (8+2)

iv) Define osmosis? Explain different types of osmotic pressures. Mention two biological importance of osmosis. (2+6+2)

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Kalyani Mahavidyalaya

1st Year Test Examination – 2014

B.Sc. (Hons.)

PHYSIOLOGY

First Paper

Full Marks : 75 Time : 4 hour

1. Answer any five from the following questions: 1 X 5 = 5

i) What do you mean by leucopenia?

ii) Define zata potential.

iii) What are ribozymes?

iv) Name the plasma buffers.

v) What is co-enzyme?

vi) What is resting potential?

vii) What are Nissl Bodies?

2. Answer any six from the following questions: 2 X 6 = 12

i) Define Chronaxie and Rheobase.

ii) What is zwitterion?

iii) What is dialysis?

iv) What is D-antigen? Mention its significance?

v) State the difference between uniport and antiport.

vi) What is stereoisomerism? Give example.

vii) What do you mean by salting in?

viii) What is erythroblastsis foetalis?

ix) Name two sulphur containing amino acids and two aromatic amino acids.

x) State the physiological importance of viscosity.

3. Answer any three from the following questions: 6 X 3 = 18

i) State how competitive enzymatic inhibition differs kinetically from non-competitive inhibition.

ii) Briefly discuss about Gibbs – Donnan membrane equilibrium and state its physiological importance.

iii) What do you mean by lymph? Discuss the composition and functions of lymph.

(1+4)

iv) How the nerve impulse is conducted through a myelinated nerve fibre?

v) Describe the ultrastructure of Endoplasmic reticulum with a neat labelled diagram.

4. Answer any <u>four</u> from the following questions: <u>10 X 4 = 40</u>

i) What do you mean by plasmapheresis? Discuss about the function of plasma proteins. Mention the significance of ESR. (2+4+4= 10)

ii) What do you mean by hemostasis? Briefly discuss the intrinsic mechanism of blood coagulation. (2+8 = 10)

iii) Write short notes (any two) (5+5 = 10)

a. T and R form of Hb
b. Autoradiography
c. Anicoagulants

iv) What is entropy? State first law of thermodynamics. Discuss how the physiological steady state is maintained.

(2+6+2 =10)

v) State the effect of temperature on the enzyme kinetics. What is irreversible covalent activation? What is abzyme?

(4+4+2 = 10)

vi) Describe the fluid mosaic model of plasma membrane. Write the important functions of plasma membrane. (6+4 = 10)

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Kalyani Mahavidyalaya

1st Year Third Terminal Examination – 2013

B.Sc. (Hons.)

PHYSIOLOGY

First Paper

Full Marks : 20 Time : 1 hour

1. Answer any four from the following questions: 1 X 4 = 4

   i) What is activation energy?

   ii) What is metal activated enzyme?

   iii) What is methaemoglobin?

   iv) What do you mean by chronaxie and rheobase?

   v) Mention the difference between myelinated and unmyelinated nerve fibre.

   vi) What is Pernicious anaemia?

   vii) What is MCHC?

2. Answer any six from the following questions: 2 X 6 = 12

   i) What is plasmapheresis?

   ii) What is the physiological importance of ESR?

   iii) What circulating blood does not clot?

   iv) What is nerve growth factor? Mention their function.

   v) What do you mean by triple response?

   vi) State two differences between competitive and non-competitive inhibition.

   vii) What is reversible covalent modification?

   viii) Draw the double reciprocal plot of Michaelis – Menten equation.

3. Answer any one from the following questions: 1 X 4 = 4

   i) What is salutatory conduction? How nerve impulse is propagated through myelinated axon with the help of salutatory conduction? (1+4)

   ii) Describe the effect of temperature and pH on enzyme activity.

Kalyani Mahavidyalaya

1st Year Third Terminal Examination – 2012

B.Sc. (Hons.)

PHYSIOLOGY

First Paper

1. (all questions carry 1 mark)
A. Define zeta potential.
B. what is co enzyme?
C. What is Km of an enzyme?
D. What is dialysis?
E. What are the plasma buffers?

2. (All questions. carry 2 marks)
A. What is isoelectric pH?
B. what is tonicity?
C. What is salting in?
D. What is ribozyme?
E. What is isozyme? Give few examples.

3. Short note. (all questions carry 5 marks)
A. Autoradiography.
B. Stalagometer.

4 (marks : 1+2+7)
What is entropy? State first law of thermodynamics. Discuss how the physiological steady state is maintained.

5(marks : 4+6)
Distinguish between lyophobic and lyophilic colloid. What are the laws of osmotic pressure?

6 (marks : 4+4+2)
State the effect of temperature on the enzyme kinetics. What is irreversible covalent activation? What is abzyme?