

St. Philomena's College (Autonomous), Mysore			
PG Department of Biochemistry			
Question Bank (Revised Curriculum 2020-21 onwards)			
First Year- First Semester (2020-21 Batch)			
Course Title (Paper Title): Human Physiology (SC) QP Code - 84131			
Sl. No	Unit	Questions	Marks
1	1	What is differential counting? Give its significance.	2
2	1	Which are the different types of tissues? Give their biological significance.	2
3	1	How serum does differ from that of plasma?	2
4	1	Which are the haemopoietic organs? Give their functions.	2
5	1	What are anticoagulants? Give an example.	2
6	1	What is Rh factor?	2
7	1	What are the different types of muscles?	2
8	1	Define haemostasis.	2
9	1	What is plasma? Give its composition.	2
10	1	What are plasma proteins? Give an example.	2
11	1	Name the different types of plasma proteins.	2
12	1	How do you digest a clot?	2
13	1	Define homeostasis.	2
14	1	What are anti coagulants? Give an example.	2
15	1	Mention the role of WBC as phagocyte cell.	2
16	1	Give examples for anti-coagulants.	2
17	1	What is coagulation?	2

18	1	Distinguish between plasma & serum.	2
19	1	Enlist the functions of CSF.	2
20	1	Enlist the functions of Lymph.	2
21	1	Define CSF and its function.	2
22	1	How CSF is formed?	2
23	1	Give the functions of blood.	2
24	1	State the percentage composition of blood.	2
25	1	What are platelets?	2
26	1	Classify the lymphocytes of blood and mention its key function.	2
27	1	Write the normal value of RBC in male & female.	2
28	1	Define blood pressure and hypertension.	2
29	1	Write the normal value and life span of leukocytes.	2
30	1	Write the normal value and life span of erythrocytes.	2
31	1	What is a buffer? List the three intracellular buffers.	2
32	2	Draw the cross section of the human heart and label the parts	2
33	2	What is ECG? Why is it used?	2
34	2	What is meant by Vital Capacity?	2
35	2	Differentiate between arteries and veins.	2
36	2	Define heart rate and stroke volume.	2
37	2	What are the events of cardiac cycle?	2
38	2	Define ECG.	2

39	2	What is chloride shift?	2
40	2	What is Einthoven's triangle? Mention its role.	2
41	2	Draw the Einthoven's triangle	2
42	2	Define tidal volume.	2
43	2	What is the normal blood pressure? How do you find it?	2
44	2	Define cardiac output.	2
45	2	Why are the right and left lungs slightly different in size and shape?	2
46	2	What are the difference between an atrium and ventricle?	2
47	2	Which lung volume cannot be measured directly and why?	2
48	2	How lung volume is related to lung capacity?	2
49	2	Define respiration.	2
50	2	Enlist upper and lower respiratory organs.	2
51	2	Define tidal volume and residual volume.	2
52	2	Enlist the different parts of respiratory system.	2
53	2	What are cardiac muscles? Give its structure.	2
54	2	What are the events involved in cardiac cycle?	2
55	3	What is GFR? Give its significance.	2
56	3	Give the major functions of liver.	2
57	3	List out the composition of urine.	2
58	3	What is GFR?	2
59	3	Define Glomerulus Filtration Rate.	2

60	3	What is a bowman's capsule? Give its importance.	2
61	3	What is glomerus? Give its importance.	2
62	3	Mention the secretary function of liver.	2
63	3	Enlist the excretory function of liver.	2
64	3	What are kupffer cells? Give their importance.	2
65	3	What are Kupffer cells? Where are they present?	2
66	3	What are podocytes? Give its significance.	2
67	3	What are endothelial cells? Give its importance.	2
68	3	What is bile?	2
69	3	What is bile? Where does it produced & stored?	2
70	3	What are nephrons? Mention its role.	2
71	3	Give any two functions of bile.	2
72	3	Give the composition of Bile.	2
73	3	Mention the functions of kidney.	2
74	3	Which vessels carry and drain blood from kidneys?	2
75	3	By what mechanisms tubular reabsorption of substances takes place?	2
76	4	What are the enzymes involved in the digestion of proteins?	2
77	4	What are the enzymes involved in the digestion of carbohydrates?	2
78	4	What are the enzymes involved in the digestion of fats?	2
79	4	How does blocking of H ₂ receptor stop acid production in the stomach?	2
80	4	Mention the role of pancreas in digestion of food.	2

81	4	Name the hormones secreted by GI tract.	2
82	4	Enlist the hormones secreted by GIT.	2
83	4	What are villi? Give their role.	2
84	4	What are the secretions of gastrointestinal system?	2
85	4	Write the functions of gall bladder.	2
86	4	Define absorption and digestion.	2
87	4	Name the four layers of the gastro intestinal tract.	2
88	4	Name any two GIT hormones and mention its functions.	2
89	5	What are the different parts of brain?	2
90	5	How right brain does differ from left brain?	2
91	5	Define action potential.	2
92	5	Define resting potential.	2
93	5	Enlist the components of nervous system.	2
94	5	What is synapse?	2
95	5	Write the functions of cerebellum.	2
96	5	What is reflex action?	2
97	5	Why axon terminals are sometimes called “Biological transducers”.	2
98	5	What is myelin sheath? Give its importance.	2
99	5	What are neurotransmitters? Give an example.	2
100	5	Draw the neuromuscular junction.	2
101	5	Give the classification of peripheral nervous system.	2

102	5	What are the coverings of skeletal muscle?	2
103	5	Name the proteins present in the muscle?	2
104	5	Give the structure of smooth muscle.	2
105	5	Name the different types of muscle.	2
106	5	What are troponins? Mention their significance.	2
107	5	What are Glial cells? Give its significance.	2
108	5	Name the two Glial cell types that form myelin sheath.	2
109	6	List the four major types of ion channels found in neuron.	2
110	6	What do you mean by IVF?	2
111	6	What do you mean by Invitro Fertilization?	2
112	6	What is ovulation?	2
113	6	Enlist the parts of female reproductive system.	2
114	6	Enlist the parts of male reproductive system.	2
115	6	Define HCG.	2
116	6	Write the functions of ovaries.	2
117	6	Mention the hormones in lactation.	2
118	6	Write the role of oxytocin.	2
119	6	What abnormalities in the uterus could cause infertility?	2
120	6	Enlist the factors influencing ovulatory cycle.	2
121	6	Define oogenesis.	2
122	6	What is menstrual cycle?	2

1	1	What is blood? Enumerate various components and functions of blood.	5
2	1	What are plasma proteins? Give their classification with functions.	5
3	1	Classify WBCs and explain the structure and function of each type.	5
4	1	Write short note on WBCs.	5
5	1	Discuss the structural features and functions of WBC.	5
6	1	Classify WBCs and discuss functions of each type.	5
7	1	What are the different types of leucocytes? Give their structure with function.	5
8	1	What is the significance of high and low White blood cell counts? explain	5
9	1	What is a blood group? Classify blood group.	5
10	1	What is a blood group? Explain ABO blood group system in detail.	5
11	1	Describe the composition and functions of lymph.	5
12	1	Describe the composition and functions of CSF.	5
13	1	Write a note on Cerebrospinal Fluid.	5
14	1	Describe blood clotting mechanism.	5
15	1	Explain the mechanism of blood clotting.	5
16	1	Explain in detail the mechanism of blood coagulation process.	5
17	2	Enlist conducting elements of heart and explain conduction system of heart.	5
18	2	Describe the structure of heart and give its functions.	5
19	2	Describe the internal structure of heart.	5
20	2	What are the unique properties of cardiac muscle essential for its function? Explain in detail.	5

21	2	Write short note on conducting system of heart with cardiac cycle.	5
22	2	Define blood pressure and explain factors affecting blood pressure.	5
23	2	Write short note on blood pressure.	5
24	2	Explain the regulation of blood pressure.	5
25	2	Discuss the physiological variations and regulation of blood volume.	5
26	2	Explain cardiac cycle.	5
27	2	What are the events of cardiac cycle? Explain.	5
28	2	Give a brief account on ECG.	5
29	2	Explain ECG. Mention the different waves of ECG.	5
30	2	How baroreceptors play an important role in the control of blood pressure?	5
31	2	Give the structure and functions of lungs.	5
32	2	Draw and explain the different parts of a respiratory system.	5
33	2	Explain the physiology of respiration.	5
34	2	Explain the mechanism of respiration.	5
35	2	What is tidal volume? Explain the mechanism of respiration.	5
36	2	Explain the role of lungs in maintain acid base balance.	5
37	2	Explain about exchange of gases between blood and tissues.	5
38	3	Describe the process of urine formation.	5
39	3	Discuss the process of urine formation.	5
40	3	List and explain the six major functions of kidney.	5
41	3	Describe the physiology of excretory system.	5

42	3	Describe the structure of nephron.	5
43	3	How Glomerular filtrate is is formed? Explain.	5
44	3	Discuss on tubular reabsorption step of urine formation.	5
45	3	Discuss the process of selective reabsorption in the formation of urine.	5
46	3	Explain the renal regulation of acid-base balance.	5
47	3	Enlist the functions of liver. Explain any two of them in detail.	5
48	3	Explain the secretory & excretory functions of liver.	5
49	4	Draw a neat labelled diagram of digestive system and explain their functions.	5
50	4	Enlist the organs involved in digestive system and give functions of each organ.	5
51	4	Explain the functions of the digestive system.	5
52	4	How are fats digested and absorbed?	5
53	4	How are proteins digested and absorbed?	5
54	4	How are carbohydrates digested and absorbed?	5
55	4	Discuss the digestion and absorption of nutrients from small intestine.	5
56	4	Write a note on pancreatic digestion.	5
57	4	Explain the role of pancreatic enzymes in digestion.	5
58	4	Explain the secretion of HCl in the gastric juice. List the factors regulating HCl secretion.	5
59	4	Describe the phases and regulation of gastric secretion.	5
60	4	Write a note on phases of gastric secretion.	5
61	5	Explain the ultra structure of muscle.	5

62	5	Write the structure and functions of actin and myosin.	5
63	5	Explain the chemical changes that take place during muscle contraction.	5
64	5	Explain the steps of muscle contraction in detail.	5
65	5	Explain the physiology of muscle contraction with suitable diagram.	5
66	5	Explain the structure of skeletal muscle and physiology of muscular contraction.	5
67	5	Write a note on muscle contraction.	5
68	5	Write short note on action potential & neuromuscular junction.	5
69	5	What are the different parts of brain? Give their functions.	5
70	5	Define and discuss about action potential.	5
71	5	Explain the process of transmission of nerve impulses.	5
72	6	Describe the principal events of oogenesis.	5
73	6	Write a note on ovarian cycle.	5
74	6	Write about natural methods of contraception.	5
75	6	Write an essay on menstrual cycle.	5
76	6	Give an account of the chemical methods of female contraception.	5
77	6	Enlist and explain any three Sexually Transmitted Diseases.	5
1	1	Enumerate the blood clotting factors and describe the biochemistry of the coagulation of blood.	10
2	1	Enumerate the blood clotting factors and explain the blood coagulation cascade.	10
3	1	Define coagulation. Describe in detail mechanism of blood coagulation.	10

4	1	What is coagulation? Discuss in detail about intrinsic and extrinsic pathway of blood coagulation.	10
5	1	Explain the blood clotting mechanism.	10
6	1	Explain blood clotting cascade.	10
7	1	Explain in detail the mechanism of blood clotting.	10
8	1	Enlist clotting factors. Explain in detail blood clotting mechanism.	10
9	2	Draw a neat labelled diagram of conduction system of heart. Explain in detail the cardiac cycle.	10
10	2	Describe the interior structure of heart. Explain cardiac cycle in detail.	10
11	2	Explain cardiac cycle with normal ECG.	10
12	2	What is electrocardiogram? Explain its clinical variation in diseases.	10
13	2	What is ECG? Explain in detail.	10
14	2	What is cardiac cycle? Explain the various events of cardiac cycle.	10
15	2	Define blood pressure. Discuss in detail short term & long term mechanism involved in regulation of blood pressure.	10
16	2	Explain the following: Blood pressure & cardiac output	10
17	2	Describe the factors which maintain the blood pressure.	10
18	2	Define blood pressure. Discuss the factors affecting & regulation of Blood pressure.	10
19	2	Describe the structure of lungs. Explain the respiratory regulation of acid base balance.	10
20	2	Describe the structure of lungs. Explain in detail the transport of O ₂ & CO ₂ during respiration.	10
21	2	Discuss the structure of alveoli and explain the process of exchange of gases.	10

22	2	Describe the location & gross anatomy of lungs. Explain exchange of gases at alveolar and cellular level.	10
23	2	Enlist different organs involved in respiration. Explain the mechanism of respiration and exchange of gases at lung and tissue level.	10
24	2	Write in detail physiology of respiration and transport of O ₂ & CO ₂ .	10
25	2	Explain the mechanism of respiration.	10
26	2	Discuss the mechanism of respiration.	10
27	2	Explain the mechanism of respiration.	10
28	2	Explain the regulation of respiration.	10
29	2	Explain the physiology of respiration.	10
30	2	What is respiration? Discuss in detail about mechanism and regulation of respiration.	10
31	2	Describe the anatomy of lungs. Discuss the mechanism of respiration.	10
32	2	Describe the exchange of gases in the lungs.	10
33	3	Describe the structure of liver. Explain the function of liver in detail.	10
34	3	What is bile? How is it formed? Give its composition and functions.	10
35	3	Describe the structure of kidney. Explain the role of kidneys in the maintenance of acid-base balance.	10
36	3	Explain the role of lungs and kidneys in maintenance of acid-base balance.	10
37	3	Describe the structure of nephron .explain in detail the physiology of urine formation.	10
38	3	Discuss the anatomy of kidney and explain Glomerular filtration in detail.	10
39	3	Explain the formation of urine. How the acid-base balance is regulated?	10

40	3	How is urine formed? Explain the mechanism.	10
41	3	Explain the formation and composition of urine.	10
42	3	Explain the formation of urine.	10
43	3	Write short note on Glomerular filtration and tubular secretion.	10
44	4	Describe the anatomy of stomach. Explain the production of HCl.	10
45	4	Discuss the anatomy of stomach. Explain the phases of gastric secretion.	10
46	4	Explain in detail the absorption of various nutrients from digestive tract.	10
47	4	Describe the structure of a villus and its function in absorption of nutrients.	10
48	4	List out the major digestive hormones & describe their function in the process of digestion.	10
49	4	Explain detail the digestion, transportation and absorption of carbohydrates.	10
50	4	Explain detail the digestion, transportation and absorption of fats.	10
51	4	Explain detail the digestion, transportation and absorption of proteins.	10
52	5	Give the structure of brain and state its functions.	10
53	5	Draw and explain the structure of neuron.	10
54	5	Describe the structure of neuron. Explain the features of the nerve impulse.	10
55	5	Describe the different phases of action potential.	10
56	5	Explain the conduction of nerve impulse.	10
57	5	What are neurotransmitters? Give their types & explain their functions.	10
58	5	Explain the ultra structure of muscle and explain its contraction.	10

59	5	Discuss anatomy of skeletal muscle and explain in detail mechanism of muscle contraction.	10
60	5	Write a note on mechanism of muscle contraction.	10
61	5	Explain the mechanism of muscle contraction.	10
62	5	Describe in detail molecular mechanism of skeletal muscle contraction.	10
63	5	Explain the different types of muscle proteins. Discuss on role of calcium & ATP in muscle contraction.	10
64	5	Explain the role of actin, myosin and calcium in muscle contraction.	10
65	5	Describe various types of muscle and give the mechanism of muscle contraction.	10
66	6	Explain the anatomy and physiology of female reproductive system	10
67	6	Describe the female reproductive system and explain its function.	10
68	6	Describe the male reproductive system and explain its function.	10
69	6	Explain the process of pregnancy.	10
70	6	Explain various types of birth control methods and compare their effectiveness.	10
71	6	Explain the various phases of the ovarian cycle.	10
72	6	Write about the natural methods of contraception. Add a note on IVF.	10
73	6	Enlist and explain any two Sexually Transmitted Diseases in detail.	10
74	6	Enlist various organs of female reproductive system and explain ovulation cycle.	10

Model Question Paper		
St. Philomena's College (Autonomous), Mysore		
I Semester M.Sc-Final Examination		
Subject: Biochemistry		
Title: Human Physiology (SC)		
Time: 3 Hours		Max Marks: 70
PART-A		
Answer any TEN of the following:		10x2=20
1.	What are anti coagulants? Give an example.	2
2.	Mention the role of WBC as phagocyte cell.	2
3.	Differentiate between arteries and veins.	2
4.	Define heart rate and stroke volume.	2
5.	Define Glomerulus Filtration Rate.	2
6.	What is a bowman's capsule? Give its importance.	2
7.	Mention the role of pancreas in digestion of food.	2
8.	Name the hormones secreted by GI tract.	2
9.	Define resting potential.	2
10.	Enlist the components of nervous system.	2
11.	What do you mean by Invitro Fertilization?	2
12.	What is ovulation?	2
PART-B		
Answer any SIX questions:		6x5=30
13.	What are the different types of leucocytes? Give their structure with function.	5
14.	Describe the composition and functions of CSF.	5
15.	Give the structure and functions of lungs	5
16.	Define blood pressure and explain factors affecting blood pressure.	5
17.	List and explain the six major functions of kidney.	5
18.	How are fats digested and absorbed?	5
19.	Write the structure and functions of actin and myosin.	5
20.	Describe the principal events of oogenesis.	5
PART-C		
Answer any TWO questions:		2x10=20
21.	Explain the formation of urine. How the acid-base balance is regulated?	10
22.	Describe the structure of neuron. Explain the features of the nerve impulse.	10
23.	Explain various types of birth control methods and compare their effectiveness	10
