



## Karanjia Auto College, Karanjia, Mayurbhanj,

CC-9

### PHYSIOLOGY

#### Section A

Each question carries one mark

Fill in the blanks

1. \_\_\_\_ is a mixture of phospholipids and lipoproteins which lowers the surface tension of alveolar fluid.
2. The kidneys produce a hormone named \_\_\_\_ which stimulates the production of red blood cells.
3. \_\_\_\_ in blood are rich in histamine.
4. QRS wave in an electrocardiogram is result of \_\_\_\_ depolarization.
5. The centro-acinar cells in the pancreas secrete \_\_\_\_ ions.
6. A person with \_\_\_\_ blood group is called universal donor and with \_\_\_\_ blood group is called universal recipient.
7. Renin converts \_\_\_\_ to \_\_\_\_.
8. Pancreas is \_\_\_\_ as well as \_\_\_\_ gland.
9. The dental formula for an adult human is \_\_\_\_.
10. The end product of amino acid nitrogen metabolism in uricotelic organisms (reptiles and birds) is \_\_\_\_.
11. The colour of blood after mixed with CO is \_\_\_\_.
12. The functional unit of kidney is \_\_\_\_.
13. \_\_\_\_ ion is a buffer system which helps in Acid-Base balance.
14. Platelets are important for \_\_\_\_.
15. Platelets are otherwise known as \_\_\_\_.
16. The pH of blood is \_\_\_\_.
17. The blood circulation was famously described by \_\_\_\_ in 1628.
18. RBCs are degraded by \_\_\_\_.
19. The decreased binding of carbon dioxide in the blood due to increased oxygen levels is known as \_\_\_\_ effect.
20. A rise in the partial pressure of CO<sub>2</sub> or a lower pH will cause dissociation of O<sub>2</sub> from hemoglobin is known \_\_\_\_ effect.
21. Cyanide poisoning causes the colour of body \_\_\_\_.
22. The blood of horseshoe crab is \_\_\_\_ and is due to \_\_\_\_ pigment.
23. \_\_\_\_ are the most abundant WBCs.

24. Multi-lobed nucleus is present in \_\_\_\_ WBC.
25. The percentage of eosinophils in human body is \_\_\_\_.
26. The predominant WBC involve in allergic reaction is \_\_\_\_.
27. The leucocytes which have bilobed nuclei and secrete chemicals that destroy large parasites such as helminthes are known as \_\_\_\_.
28. \_\_\_\_ lymphocytes make antibodies.
29. \_\_\_\_are the largest WBCs.
30. CO<sub>2</sub> is transported in blood as \_\_\_\_ ion.
31. Vertebrate blood is \_\_\_\_ coloured when oxygenated and \_\_\_\_ in colour when deoxygenated.

### Section- B

Each question carries 1.5 mark (to be answered within 30 words)

Give the location and function of the following:

1. AV node
2. Brunner's glands
3. Chief cells
4. Islet of Langerhans
5. Parietal cell
6. Monocyte
7. Eosinphils
8. Killer T cells
9. Helper T cells

Define in one to two lines:

1. Deglutition
2. Erythropoiesis
3. Stroke volume
4. Diuresis
5. Mesobronchus
6. Serum
7. Coronary Sinus
8. Peyer's Patches
9. T<sub>m</sub> (Transport Maximum)
10. Anemia
11. Cardiac cycle
12. Cardiac output
13. Coronary circulation
14. Alveoli
15. Monocyte
16. Eosinphils
17. Killer T cells
18. Helper T cells
19. Neutrophil

20. Leucocytes
21. Platelets
22. Thrombocytes

### Section- C

Each question carries 2.5 mark (to be answered within 75 words)

Give reason for:

- Delay of Action Potential at AV Node
- Filtration through glomeruli is larger than other capillaries
- Alveoli don't collapse after forceful expiration

Calculate

1. Calculate end systolic volume if cardiac output is 5.0 L/min, heart rate is 75 beats/min and end diastolic volume is 145 ml/min.
2. Calculate the stroke volume and then find the cardiac output if end systolic volume is 60 ml, heart rate is 72 beats/min and end diastolic volume is 130 ml/min.

Write short notes

1. Ruminant stomach
2. Dentition in mammals
3. Renin-Angiotensin-Aldosterone system
4. Hering-Breuer reflex
5. Electrocardiogram
6. Hormonal regulation of digestion
7. Composition of blood.
8. autoregulation of glomerular filtration rate
9. Acid-Base balance
10. Heart conduction system
11. Formed elements of blood
12. Pulmonary ventilation
13. Blood groups
14. Pancreatic hormones
15. Oxygen dissociation curve
16. Tachycardia 17. Ureotelic animals.
18. Homeostasis
19. Frank-Starling law
20. Rh factor
21. Coronary circulation
22. Counter-current mechanism
23. Blood cells
24. Lymph
25. Serum
26. Angiography
27. Artherosclerosis
28. Coronary Heart Disease

29. Ballooning
30. MN blood group

Differentiate between the following

1. Crop and Gizzard
2. Holobranch and Hemibranch gills
3. Micelles and Chylomicrons
4. Haemoglobin and Myoglobin
5. Tidal volume and Vital capacity
6. Facultative and obligatory water reabsorption
7. Neurogenic and myogenic heart.
8. HbA and HbF
9. Bronchus and Bronchiole
10. Cortical Nephron and Juxtamedullary Nephron
11. Gastrin and Secretin
12. Basophil and neutrophil
13. Eosinophil and Basophil
14. RBC and WBC

#### Section- D

Each question carries 6 mark (to be answered within 500 words)

1. Describe the process of digestion of proteins in the gastro-intestinal tract.
2. Explain the process of blood clot formation and clot retraction.
3. Write a note on acid-base balance.
4. Explain how respiratory gases, oxygen and carbon dioxide, are transported by blood.
5. Elucidate the processes involved in the formation of urine in a nephron.
6. Discuss the origin and conduction of heart beat.
7. Correlate the various events of Cardiac Cycle with ECG.
8. Describe the phases of action potential in ventricular cardiac muscle fiber.
9. Describe the process of digestion and absorption of lipids.
10. Write a note on gastrointestinal hormones.
11. Depict the life cycle of RBC with the help of a flowchart.
12. Explain how CO<sub>2</sub>, is transported in blood.
13. Comment on the factors affecting oxygen dissociation curve.
14. Outline the factors that stimulate and inhibit gastric secretion during cephalic, gastric and intestinal phases.
15. What is 'homeostasis'? Explain the extrinsic mechanism of blood coagulation with the help of a flow diagram.
16. Distinguish between obligatory and facultative water reabsorption by the renal tubule. How is facultative reabsorption controlled ?
17. What do you understand by effective filtration pressure? Calculate its value in the renal corpuscles.
18. Explain with the help of diagram, how CO<sub>2</sub> transported by blood. Explain Haldane's effect.