Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 03-Feb-2024

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – PAPER - I (RS-4)
Q.P. CODE: 1022
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Define cardiac output, mention two methods to estimate cardiac output and explain the mechanism of regulation of cardiac output.
2. List out the groups of neurons in respiratory center and describe the neural regulation of respiration.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. Mention different types of T-cells and their functions.
4. Explain Mechanism of development of erythroblastosis fetalis.
5. Explain the basis for Heart sounds and correlate it with mechanical activity of heart.
6. Define Lung compliance and factors affecting it.
7. What is dysbarism and explain physiologic basis for its effects.
8. Explain mechanism of secretion of HCl in the stomach.
9. Explain Inulin clearance and write about its application.
10. A 43-year-old man presented with complaints of epigastric pain and diagnosed with peptic ulcer. On endoscopy, he was started on 'proton-pump' inhibitors.
    a) What is proton pump and explain the type of transport?
    b) Write one cause for peptic ulcer
    c) What is the basis for action of any two **drug used in treatment of peptic ulcer?**

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Polycythemia vera.
12. Explain role of Plasmin in Fibrinolysis and its clinical significance.
13. Effect of storage of blood on red blood corpuscles.
14. Draw the diagram of conductive system of the heart.
15. List out the changes in ECG that occur with myocardial ischemia.
16. Role of lymphatic system.
17. List functions of bile salts.
18. Write two examples for positive feedback mechanisms acting in the body.
19. Draw a neat labelled diagram of Cystometrogram and write the cause for phase II.
20. What are diuretics? Name two diuretics with their site of action?

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Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) In the fetus, removal of webs between fingers is caused by mechanism of
- A. Necrosis
- B. Cloning
- C. Apoptosis
- D. Lysis

21 ii) The normal albumin-globulin ratio is
- A. 1:2.3
- B. 1:1.7
- C. 1.7:1
- D. 3:1

21 iii) The most common type of anemia found in our country is
- A. Thalassemia
- B. Aplastic anemia
- C. Megaloblastic anemia
- D. Iron deficiency anemia

21 iv) P wave in ECG is produced due to
- A. Atrial depolarization
- B. Ventricular depolarization
- C. Atrial repolarization
- D. Ventricular repolarization

21 v) Normal stroke volume is
- A. 70 to 80 dl/beat
- B. 70 to 80 ml/beat
- C. 70 to 80 lit/min
- D. 5 to 6 lit/min

22 i) The volume of air remaining in the lungs after a normal expiration is
- A. Tidal volume
- B. Functional Residual capacity
- C. Vital capacity
- D. Total lung capacity

22 ii) Normal respiration is called
- A. Apnea
- B. Eupnea
- C. Dyspnea
- D. Orthopnea

22 iii) Intrinsic factor is required for the absorption of
- A. Vitamin C
- B. Vitamin B1
- C. Vitamin B6
- D. Vitamin B12

22 iv) Renal threshold for glucose is
- A. 180 mg/min
- B. 325 mg/dL
- C. 180 mg/dL
- D. 375 mg/min

22 v) The normal urine output is
- A. 1.5-2 L/day
- B. 5-6 L/day
- C. 10-20 mL/min
- D. 125 mL/min

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