RUHS

First Year MBBS Examination
I MBBS PHYSIOLOGY PAPER II
Time: 3 hours Date: 11-04-2023 Max Marks: 100

Instructions: INSTRUCTIONS: Attempt all questions in both sections: (Use separate answer book for each section)

Section 1

1. **Fill in the blanks:** (6)
   a. Life span of RBC is _____ days.
   b. Intrinsic factor is secreted by which _____ cells.
   c. Cholelithiasis is presence of stone in _____
   d. Capillaries are called as _____ vessels.
   e. Erythropoietin is produced mainly by _____
   f. Sympathetic stimulation of parotid gland results in _____ secretion of saliva.
2. **Choose the correct option in the following multiple choice questions:** (4)
   a. Normochromic macrocytic RBCs are found in a) Megaloblastic anemia b) Iron deficiency anemia c) Hemorrhagic anemia d) Sickle cell

anemia

b. Shift of oxygen-haemoglobin dissociation curve to the right can occur due to a) Decreased H ion concentration b) Increased CO2 concentration c) Decreased temperature d) Presence of large quantities of foetal haemoglobin

c. The law relating to distending pressure and tension in a blood vessel wall is, a) Frank-starling's law b) Marey's law c) Law of Laplace d) Einthoven's law

d. Tendency of turbulent flow is maximum in; a) Arterioles b) Capillaries c) Aorta d) Inferior vena cava

3. **A 40-year old male met with an accident.** He fell on the ground and got multiple injuries. He was taken to the casualty of a nearby hospital after 1 hour. He was bleeding profusely from his wounds. He was drowsy. On examination, it was found that his radial pulse was 115/ mins and thready. His skin was pale, extremities were cold. Arterial blood pressure was 70/50mm of Hg. a) What is your probable diagnosis? b) What was cause of rapid pulse and his cold clammy skin? c) What is the physiological basis of management? (15)

4. **Write short notes on (Any five)** (10)

a. Lung surfactant

b. Landsteiner law
c. Deglutition apnoea (C1-215)
d. QRS complex
e. Plasma proteins
f. Segmentation contraction

5. **Explain briefly (Any three):** (15)
a. Juxta glomerular apparatus
b. Regulation of hydrochloric acid (HCl) secretion
c. Heart sounds (A.544) (B.211) (C1-282,291)
d. Stagnant hypoxia

Section 2

1. **Define cardiac output. Give its normal value. Explain the determinants of cardiac output. Mention the method of measuring cardiac output. Add a note on cardiac index.** (20)
2. **What will happen & why (Any Five)** (10)
   a. To pH urine at high altitude.
   b. To gastric emptying time fatty diet. (A.274) (B.475)(C1-226)
   c. To pulmonary blood flow distribution when alveolar PO decreases.
   d. If person has platelet count less than 50.000/uL. (C1-95)
   e. If plasma colloid osmotic pressure in systemic circulation is decreased. (C1-57)
   f. Level of vitamin B and folic acid in blood in reduced.
3. **Explain briefly (Any four)** (20)
   a. Mismatched transfusion.
   b. Transport maximum for glucose (C1-529)
   c. Proton pump inhibitors.
   d. Fats of haemoglobin (C2- 902)
   e. Vitamin k.

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