0122 E309

First Year MBBS Examination

I MBBS Physiology Paper 1

Date: 05-01-2022

Time: 3 hours

Max Marks: 100

Instructions: *1. Answer to the points. 2. Use separate answer books for each section. 3. Draw diagrams wherever necessary.*

Section 1

1. Write the following structured long question (any 1 out of 2) (10)
   a. Describe factors affecting Heart rate. Describe mechanism of control of heart rate.
   b. What is mean arterial blood pressure? Describe long term regulation of arterial blood pressure.
2. Write the following case - based scenario / applied short notes (any 2 out of 3) (12)
   a. 30 year male, labourer complaint of progressive weakness, pallor, tingling

numbness in the extremities, redness over the tongue. He is strict vegetarian. On examination shows pallor, inflammation of the tongue, No other CNS abnormality. Blood Report - HB ↓, RBC, WBC↓, MCV↑, MCH↑, MCHC - Normal, PBS - Shows megaloblast.a) What is diagnosis and cause of the condition? b) Which other hematological investigation is required to diagnose the condition? c) What are the likely complications of this disease?

b. 30 year female known diabetes mellitus delivered a baby in 27th week of gestation. On examination of a baby shows - rapid shallow breathing Difficulty in respiration intercostals retraction seen on inspection on auscultation of chest harsh tubular sound heard progressive cyanosis a) What is diagnosis of the baby and cause of it. b)What is the treatment for it? c) How to prevent this condition?

c. Describe Dynamic lung volumes and capacities.

3. Write short notes (any 3 out of 4) (18)

a. Describe facilitated diffusion.

b. Describe Na+ - K+ pump and its function.

c. Differentiate active and passive immunity.

d. Describe apoptosis. Give its significance.

4. Answer in only 2-3 sentence (any 5 out of 6) (10)
   a. Factors affecting cell membrane permeability.
   b. Function of eosinophil.
   c. Sites of haemopoiesis.
   d. Give any two causes of increase plasma osmolality.
   e. SA node act as a pace maker in mammalian heart.
   f. Role of atrial systole in end diastolic volume.

Section 2

1. Write the following structured long question (any 1 out of 2) (10)
   a. Describe role of chemoreceptors in the regulation.
   b. Describe transport of oxygen in the arterial blood. Add a note on oxygen dissociation curve.
2. Write short notes (any 2 out of 3) (12)
   a. Mechanism of development of fever and its benefits.
   b. Respiratory and cardio vascular adaptation to the exercise.
   c. Positive feedback mechanism and its

significance.

3. Write short notes (any 3 out of 4) (18)
   a. Juxtaglomerular apparatus.
   b. Angiotensin II.
   c. Function of proximal tubule.
   d. Duties and responsibility of the patient.

4. Answer in only 2-3 sentence (any 5 out of 6) (10)
   a. Frequency of micturation seen in the patient of diabetes mellitus.
   b. Enumerate mechanisms in the body to maintain PH produced by acid base disorder.
   c. During the phase of swallowing apnea develops.
   d. 10% of drowning cases death occurs without any water in the lung.
   e. Cyanosis is a common occurrence in hypoxic hypoxi
   f. Acclimatized subject can also suffer from mountain sickness.