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(For AIPMT/State PMTs - 2014)

ZOOLOGY

Topics Covered : Breathing and Exchange of Gases, Body Fluids and Circulation, Excretory Products and their Elimination

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Choose the correct answers:

1. Which of the following are **correct** differences between foetal haemoglobin (Hb-F) and maternal haemoglobin (Hb-A)?

   a. Hb-F and Hb-A differ in structure.

   b. Hb-F has higher affinity for oxygen as compared to Hb-A.

   c. The curve of foetal haemoglobin remains towards the left of maternal haemoglobin (Hb-A).

   d. Hb-F binds with BPG more strongly as compared to Hb-A.

   (1) a, b, c, d (2) b, c, d

   (3) a, b, c (4) a, c, d

2. Vital capacity (VC) can be stated as

   (1) TV + IRV (2) TV + FRC

   (3) IRV + FRC (4) IC + ERV

3. How many openings are present in the right atrium to provide deoxygenated blood to it?

   (1) Two (2) Three

   (3) Four (4) One

4. A person is found to have a resting cardiac output of 5.25 L per minute and a heart rate of 75 beats per minute. What is his stroke volume?

   (1) 72 mL (2) 70 mL

   (3) 75 mL (4) 80 mL

5. Find out the **incorrect** match with respect to type of excretory matter and the animals associated

   (1) Ammonia – *Hydra*, tapeworm, Rohu

   (2) Urea – Shark, frog, turtles

   (3) Uric acid – Cockroach, crocodile, amphibian tadpole

   (4) Guanine – Penguins

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ANSWERS & SOLUTIONS

1. Answer (3)

   Hb-F binds less strongly with BPG or does not bind with BPG.

2. Answer (4)

   VC = IRV + TV + ERV

3. Answer (2)

   Superior vena cava, inferior vena cava and coronary sinus open into right atrium.

4. Answer (2)

   Cardiac output = Stroke volume × Heart beat per minute

   5250 ml = Stroke volume × 75

   Stroke volume = $\frac{5250}{75} = 70$ ml

5. Answer (3)

   Crocodile and amphibian tadpole are ammonotelic.

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