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3 (Sem-4/CBCS) ZOO HC 2

2022

ZOOLOGY

(Honours)

Paper : ZOO-HC-4026

(Animal Physiology; Life Sustaining System)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Fill in the blanks : **(any seven)** $1 \times 7 = 7$
 - (a) _____ hormone regulates the concentration of urine.
 - (b) The matrix of blood is known as _____.
 - (c) _____ prevents clotting of blood in blood vessels.
 - (d) Collagen, a major constituent of meat is digested by _____ enzyme of stomach.

Contd.

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- (e) Lungs consists of numerous small air sacs called _____.
- (f) _____ is the functional unit of kidney.
- (g) Blood pressure is measured in millimetre of _____.
- (h) Crypts of Lieberkuhn found in intestine secretes _____.
- (i) Vitamin _____ is essential for blood clotting.
- (j) _____ discovered the ABO system.

2. Answer very briefly : **(any four)** $2 \times 4 = 8$

- (a) What is chloride shift ?
- (b) Why sinus node is called pacemaker of the heart ?
- (c) Explain briefly the role of liver is digestion.
- (d) Emulsification of fats
- (e) What is haemostasis ?
- (f) How the hormone angiotensin II regulates blood pressure ?
- (g) What is tidal volume ?
- (h) Structure of haemoglobin A.

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3. Answer the following : (**any three**) $5 \times 3 = 15$

- (a) Write a short note on carbon monoxide poisoning.
- (b) Define cardiac output. Describe briefly how cardiac output is regulated by Frank-Starling mechanism of the heart.
 $1+4=5$
- (c) Briefly describe how pneumotaxic centre of the respiratory center controls respiration.
- (d) What are the different types of pancreatic enzymes ? Explain with their functions.
 $3+2=5$
- (e) Write a brief note on hormonal regulation of gastric acid secretion in gastrointestinal tract.
- (f) Write a short note on fibrinolytic system.
- (g) Describe the structure of mammalian heart.
- (h) Write a note on haemopoiesis.

4. Answer **any three** from the following questions : $10 \times 3 = 30$

- (a) What is a nephron ? Briefly describe the countercurrent mechanism of urine formation.
 $2+8=10$

- (b) What is erythroblastosis fetalis ? Discuss briefly how a Rh-negative mother can affect a foetus with Rh-positive blood. $2+8=10$
- (c) Briefly describe oxygen-haemoglobin dissociation curve. What are the different factors which influence the oxygen dissociation curve ? $5+5=10$
- (d) Write a note on digestion and absorption of carbohydrate in human body. $5+5=10$
- (e) What are clotting factors ? Describe in detail the mechanism of blood coagulation ? $2+8=10$
- (f) Define cardiac impulse. Explain how a cardiac impulse is originated and generated through the heart ? $2+8=10$
- (g) Write a detail account on the transport of carbon di oxide in blood.
- (h) Define antibodies. Describe the different blood groups found in human. $2+8=10$
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