(A-6) Seat No: _____

SARDAR PATEL UNIVERSITY

B. Sc. (Biochemistry) – Fifth Semester Examination (CBCS) (NC)

Saturday, 14th May 2016

10:30 a.m. to 1:30 p.m.

US05CBCH05: Human Physiology and Clinical Endocrinology

Total Marks: 70

Note: (1) Figures to the right indicate marks.
(2) Draw a neat and labeled diagram, wherever necessary.

Q. 1 **Choose the most appropriate answer from the four alternatives given:** **[10]**

i. **_____ is often called father of physiology.**

(a) Jean Fernel (b) Herman Boerthave (c) Alka Kindi (d) Willium Harvey

ii. **Which element is injected in to patient veins when there is emergency, especially during heart failure?**

(a) Magnesium (b) Calcium (c) Sodium (d) Potassium

iii. **Carbamino compounds are combination of _____.**

(a) C and NH_2 (b) C and NH_3 (c) C and Hb (d) CO_2 and Hb

iv. **One complete heart beat in human take _____second.**

(a) 0.3 (b) 0.4 (c) 0.6 (d) 0.8

v. **Tmax value of glucose is _____.**

(a) 1.5 mM (b) 75 mg (c) 320 mg (d) 700 mg

vi. **Sarcoplasmic reticulum release large amount of_____.**

(a) Sodium (b) Titin (c) Calcium (d) Nitrogen

vii. **Which of the following are structural proteins present in the skeletal muscles?**

(a) Nebulin (b) Titin (c) M and C line proteins (d) All of these

viii. **ANF is released from _____.**

(a) Heart (b) Liver (c) Lungs (d) Kidney

ix. **Which one of the following is biological amines?**

(a) ACTH (b) Adrenaline (c) Epinephrine (d) Both (b) and (c)

x. **LH and FSH both are _____hormones.**

(a) Steroid (b) Peptide (c) Gangliosides (d) Monoamine

Q.2 **Answer any <u>TEN</u> from the following:** **[20]**

i. Write names of any 4 systems of human body other than that was mentioned in **Q.3.**

ii. Write functions of iron in human body.

iii. Enlist examples of fourth tier elements.

iv. What is cardiac cycle?

<u>P.T.O</u>

v. Write various phases of respiration.

vi. Define partial pressure of gases.

vii. Write examples of normal and abnormal constituents of urine.

viii. What are the different types of muscles?

ix. Differentiate between myosin and myoglobin.

x. What T3, T4 and TSH stands for?

xi. Differentiate between endocrine and exocrine glands.

xii. Briefly explain role of receptors during hormonal action.

Q.3 Write examples of first, second and third tier elements. Discuss Biological importance of first tier elements in the human body. **[10]**

OR

Q.3 Mention various level of structural organizations that make up human body. Write general functions of Digestive, circulatory, Integumentary and musculoskeletal systems. **[10]**

Q.4 (a) Give comparison between metabolic and respiratory alkalosis. **[5]**

(b) Write a note on chloride shift. **[5]**

OR

Q.4 (a) Draw a labeled structure of human heart. **[4]**

(b) "Haemoglobin act as a biological buffer" Justify the statement. **[6]**

Q.5 (a) Draw labeled diagram of nephorn. **[4]**

(b) Describe mechanism of transmission of nerve impulses. **[6]**

OR

Q.5 (a) Write a note on GFR. **[4]**

(b Discuss mechanisms of muscle contraction. **[6]**

Q. 6 (a) Classify Diabetes mellitus according to WHO. **[4]**

(b) Discuss functions of growth hormone. **[6]**

OR

Q. 6 (a) Write chemical classes of hormone. **[4]**

(b) Discuss any two life threatening complications due to hyperglycemic conditions. **[6]**

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(2)