SEAT No._____ No. of Printed Pages : 2

[48]

SARDAR PATEL UNIVERSITY
M.Sc. (II-SEMESTER) Examination (CBCS)
FRIDAY, 20th April, 2018
2:00 to 5:00 pm
M.Sc. Biotechnology
PS02EBIT24: MEDICAL BIOCHEMISTRY

TOTAL MARKS: 70

Q.1 Tick mark / select the correct answer for the following. (*Only correct option against given question number needs to be written in provided answer book*) **(08 Marks)**

1. Most circulating T3 and T4 is bound to
   a. Thyroxine binding globulin (TBG)
   b. Thyroxine binding prealbumin (TBPA)
   c. Gamma globulin
   d. Thyroglobulin

2. Which of the following LDH exhibits fastest electrophoretic mobility at pH 8.6?
   a. LDH 1
   b. LDH 3
   c. LDH 2
   d. LDH 4

3. Crigler-Najjar Syndrome is the inherited metabolic disorder of Bilirubin metabolism sue to defective enzyme
   a. Heme oxygenase
   b. UDP-Glucouronyl transferase
   c. Biliverdin reductase
   d. Beta - glucuronisase

4. One of the following is the principle secretion of the parietal cells of the stomach
   a. Mucous
   b. Hcl
   c. Gastrin
   d. Trypsin

5. Angina Pectoris refers to:
   a. Severe headache, usually due to decreased blood flow to the brain
   b. Severe headache, usually due to increased blood flow to the brain
   c. Chest pain or pressure, usually due to decreased blood flow to the heart muscle.
   d. Chest pain or pressure, usually due to increased blood flow to the heart muscle.

6. Parkinson's disease is marked by the shortage of one of the following neurotransmitters.
   a. Serotonin
   b. GABA
   c. Dopamine
   d. Norepinephrine

7. Which of the following pairs is not correctly matched?
   a. Vitamin C – Scurvy
   b. Vitamin B_2 – Pellagra
   c. Vitamin D – Rickets
   d. Vitamin B_6 – beriberi

8. An individual who has been exposed to and harbors a pathogen but has not become ill or shown any of the symptoms of the disease is called:
   a. Healthy carrier
   b. Passive carrier
   c. Convalescent carrier
   d. Temporary carrier

(P. T. O.)

Q.2 Answer **any seven** from the following: 14

a) Enlist serum enzyme for malignancies. Give the site, normal value and clinical importance of β-glucuronidase.

b) What is Haemoglobinopathies? Explain biochemical mechanism of sickle cell anaemia in brief.

c) Differentiate conjugated and un-conjugated Bilirubin.

d) Explain Crigler-Najjar Syndrome in hyperbilirubinemias.

e) Write down body distribution of phosphorus and enlist the causes of Hyperphosphatemia.

f) Enlist the fat soluble vitamins. Discuss the dietary source and importance of retinol.

g) What are atypical CPK isoenzymes?

h) Explain the term 'stroke' and enlist the risk factors associated with stroke.

i) What is difference between of diastolic and systolic blood pressure?

Q.3 (A) Define Isoenzymes. Citing suitable examples explain how isoenzymes can act as biomarkers of disease. 6

(B) Explain the terms hypercalcaemia and hypocalcaemia. Explain how vitamin D and parathyroid gland prevents hypocalcaemia and hyperocalcaemia. 6

OR

(B) Give a brief overview on serum enzyme that act as biomarkers of acute myocardial infarction. 6

Q.4 (A) List the various kidney function tests and explain in detail the renal function tests based on Glomerular Filtration Rate (GFR). 6

(B) What is hyperbilirubinemias? Describe the formation, transportation and secretion of Bilirubin. 6

OR

(B) Write short note on **any one** (i) Thyroid function tests (ii) Liver function tests 6

Q.5 (A) Write short note on **any one** of the following (i) Mechanism for development of atherosclerosis with various risk factors. (ii) Causes and management of systemic hypertension 6

(B) Enlist various neurological disorders and explain the clinical biochemistry and mechanisms involved in development of Parkinson's disease. 6

OR

(B) What are oncogenes? Discuss the role of various oncogenes in the development of cancer with special emphasis on the role of viral oncogenes. 6

Q.6 (A) Describe the structure and life cycle of HIV. 6

(B) Give a detailed account on transmission and pathogenesis of pulmonary TB. 6

OR

(B) Give a diagrammatic overview of the mechanism of action of cholera enterotoxin and explain the key steps involved in the process. 6

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