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2019

D.Pharm 1st Year End Term Examination

BIOCHEMISTRY AND CLINICAL PATHOLOGY

Full Marks – 80 Time – Three hours

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

1. Choose the correct answer from the following : (20 × 1 = 20)

(i) Who is known as Father of Biochemistry?

(a) Heinrich Anton de Bary

(b) Carl Neuberg

(c) Rudolf Virchow

(d) Antonie Van Leeuwenhoek

(ii) What is clinical pathology?

(a) Study of cell

(b) Study of diseases

(c) Study immune function

(d) Diagnosis of diseases on the basis of laboratory analysis

[Turn over

(iii) The oxidation glucose into pyruvic acid, with ATP production is called as

(a) Glycolysis

(b) Glycogenolysis

(c) Glycogenesis

(d) None of the above

(iv) Megaloblastic anemia is due to deficiency of –

(a) Pyridoxine

(b) Riboflavin

(c) Niacin

(d) Folic acid

(v) Net yield (energetics) of one molecule of β – oxidation of palmitic acid is

(a) 129 ATP

(b) 96 ATP

(c) 12 ATP

(d) 08 ATP

(vi) Quaternary structure of protein observed in –

(a) Lipoproteins

(b) Hemoglobin

(c) Myoglobin

(d) Lysine

(vii) Von Gierke disease is an example of glycogen storage disease, due to defect in enzyme–

(a) Muscle phosphorylase

(b) Glucose–6–phosphatase

(c) Acid maltase

(d) Glycogen branching enzyme

(viii) Which one of the following is a qualitative test for protein?

(a) Molisch Test

(b) Fehling Test

(c) Barfoed Test

(d) Biuret Test

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(ix) The enzymes for citric acid cycle are present in

(a) Mitochondria

(b) Cytosol

(c) Golgi apparatus

(d) None of above

(x) ———————— deficiency causes oesteomalcia.

(a) Vitamin C

(b) Vitamin D

(c) Vitamin A

(d) Vitamin K

(xi) The rancidity of fat is analyzed by

(a) Acid number

(b) Potassium number

(c) Saponification number

(d) Iodine number

(xii) Active form Vitamin D is

(a) Ergocalciferol

(b) Calcitriol

(c) Cholecalciferol

(d) All of above

(xiii) Which metals ions present in Vitamin B_{12}?

(a) Iron

(b) Iodine

(c) Cobalt

(d) Mercury

(xiv) Which one of the following is an example of non-reducing sugar?

(a) Maltose

(b) Sucrose

(c) Glucose

(d) Lactose

(xv) The average lifespan of RBC is :

(a) 80 days

(b) 100 days

(c) 120 days

(d) 150 days

(xvi) 'Polyuria' is an abnormal condition of urine when urine becomes :

(a) Very concentrated

(b) Very diluted

(c) Cloudy

(d) Milky

(xvii) Lymphocytosis means, when the Lymphocyte count in blood is

(i) Less than 1.5×10^6 per ml

(ii) More than 1.5×10^6 per ml

(iii) Less than 4×10^6 per ml

(iv) More than 4×10^6 per ml

(xviii) The enzymes which do not have any structural similarity with the substrate, but they can go for conformational or structural changes to the substrate are called as :

(a) Competitive Inhibitor

(b) Non- Competitive Inhibitor

(c) Allosteric Inhibitor

(d) None of the above

(xix) Which one of the following is not a type of Granulocyte WBC :

(a) Monocytes

(b) Basophils

(c) Neutrophils

(d) Eosinophils

(xx) Increasing amount of enzyme SGOT will give us the information of the disease

(a) Hepatitis

(b) Acute Pancreatitis

(c) Myocardial Infraction

(d) Liver cirrhosis

2. Answer the following questions (Any six). $(6 \times 5 = 30)$

(a) Classify lipid and brief the functions of lipid. $(3 + 2 = 5)$

(b) What are HDL and LDL? Brief the formation and utilization ketone bodies. $(2 + 3 = 5)$

(c) Briefly discuss source and biochemical functions of Vitamin D and Vitamin C. (5)

(d) Define following : (5)

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(i) Glycogenesis

(ii) Invert sugar

(iii) Denaturation of protein

(iv) Homopolysaccharide and heteropolysaccharide

(v) Epimer

(e) What is deamination? Brief the sequence of reactions and significance of urea cycle. (1 + 4 = 5)

(f) Briefly discuss the functions and deficiency disorders associated with following : (5)

(i) Vitamin A

(ii) Iron

(iii) Pyridoxine (Vit. B6)

(iv) Vitamin K

(v) Riboflavin (Vit. B2)

(g) Define Proenzyme and Isoenzyme. Write a note on enzyme kinetics. (2 + 3)

(h) Write a note on the abnormal constituents of urine and their significance in diseases. (5)

(i) Write a note on diseases associated with Thrombocytes (Platelets). (5)

3. Answer the following questions (Any three). (3 × 10 = 30)

(a) Discuss different qualitative test for carbohydrate. Describe the sequence of reactions and energetic of Glycolysis. (4 + 6 = 10)

(b) Brief the physical and chemical properties of amino acid. Describe about structure and function of proteins. (4 + 6 = 10)

(c) What is essential and non-essential fatty acid? Discuss about different stages of β-oxidation of fatty acid. Add a not on hypercholesterolemia and control of hypercholesterolemia. (2 + 6 + 2 = 10)

(d) Write a note on mechanism of enzyme action. What are the factors affecting enzyme action? (3 + 7)

(e) Discuss in details about at least five diseases associated with Erythrocytes (RBCs). (10)

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