8103

ER20-PH–23T

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BOARD DIPLOMA EXAMINATION, (ER-20)

JUNE—2024

DPH – SECOND YEAR EXAMINATION

BIOCHEMISTRY AND CLINICAL PATHOLOGY

Time : 3 Hours] [*Total Marks* : 80

PART—A 5×6=30

Instructions : (1) Answer *any* **six** questions.

(2) Each question carries **five** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

1. Define the term 'Amino acids'. Classify amino acids based on chemical nature and nutritional requirement with examples.

2. Define 'Lipids'. Write a brief note on classification and functions of Lipoproteins.

3. What is an 'Enzyme'? Write a detailed on IUB and MB classification of enzymes with examples.

4. Define the term 'Vitamins'. Write about sources, functions and deficiency diseases of fat soluble vitamins.

5. What is Glycolysis? Write the sequence of reactions in glycolysis.

6. Define Metabolism. Give a detailed note on β- oxidation of Palmitic acid.

7. What are the functions of Liver? Explain in brief about the tests to assess the functions of liver

PART—B

3×10=30

Instructions : (1) Answer *any* **ten** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

8. Draw a neat labelled diagram of eukaryotic cell.

9. Define Monosaccharides. Write the structures of *(a)* Glucose and *(b)* Fructose.

10. What are Triglycerides and write the functions of Triglycerides.

11. Define the following terms with example *(a)* Nucleoside and *(b)* Nucleotide.

12. Write a note on the theories on mechanism of action of enzymes.

13. Write a note on Phenylketonuria and Alkaptonuria.

14. Define Minerals. What are the diseases may occur due to deficiency of Calcium and Iron.

15. Give a short note on water turnover in human body.

16. What is Lipid Profile Test? Give a note on its significance.

17. Write a note on abnormal constitutions of urine and its significance.

18. Define Dehydration. What are the causes of dehydration?

PART—C

1×20=20

Instructions : (1) Answer **all** questions.

(2) The question carries **one** mark.

(3) Answer should be single word or single sentence.

19. Which of the following organelle is known as 'Suicidal bags' of a cell?

(a) Mitochondria

(b) Endoplasmic Reticulum

(c) Lysosome

(d) Chromosome

20. Which of the following is a Monosaccharide?

(a) Glucose

(b) Maltose

(c) Sucrose

(d) fructose

21. Which of the following disease is caused by malnutrition of protein?

(a) Glycosuria

(b) Lactose intolerance

(c) Galactosemia

(d) Marasmus

22. Which of the following lipoprotein causes Atherosclerosis?

(a) HDL

(b) LDL

(c) VLDL

(d) None of the above

23. Which of the following nitrogenous base is present only in RNA?

(a) Thymine

(b) Guanine

(c) Uracil

(d) Adenine

24. Which of the following factor will affect enzyme activity?

(a) pH

(b) Temperature

(c) Concentration of Substrate

(d) All of the above

25. 'Scurvy' is a disease caused by the deficiency of

(a) Vitamin-A

(b) Vitamin-B

(c) Vitamin-C

(d) Vitamin-D

26. Which of the following is a fat soluble vitamin?

(a) Thiamine

(b) Riboflavin

(c) Cyanocobalamine

(d) None of the above

27. Blood sugar levels are regulated by the hormone

(a) glucagon

(b) insulin

(c) *(a)* and *(b)*

(d) None of the above

28. The dehydration caused by excessive loss of Sodium ions(Na^+) leads to

(a) Hypernatremia

(b) Hyponatremia

(c) Hypercalcemia

(d) Hyperkalemia

29. The organ which is majorly responsible for production of temperature in the body is

(a) Brain

(b) Heart

(c) Kidney

(d) Liver

30. Which of the following enzyme is taken as biomarker in Liver functioning test?

(a) ALT

(b) AST

(c) ALP

(d) All of the above

31. Platelets all also Known as

(a) Lymphocytes

(b) Thrombocytes

(c) Erythrocytes

(d) Monocytes

32. T-Lymphocytes are matured at

(a) Bone marrow

(b) Thymus gland

(c) Liver

(d) Kidney

33. Which of the following is a Pyrimidine nitrogenous base?

(a) Uracil

(b) Cytosine

(c) Thymine

(d) All of the above

34. Which of the following is qualitative test for Carbohydrates?

(a) Benedict's test

(b) Ninhydrin test

(c) Sakaguchi test

(d) Saponification test

35. The deficiency of Vitamin-D causes

(a) Osteoporosis

(b) Anaemia

(c) Pellagra

(d) Glossitis

36. In nucleic acids 'RNA' stands for _____.

37. The Vitamin – A is also known as _____.

38. The protein part of the enzyme is known as _____.

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DPH - SECOND YEAR EXAMINATION

BIOCHEMISTRY AND CLINICAL PATHOLOGY

Time : 3 Hours] [*Total Marks* : 80

PART—A

5×6=30

Instructions : (1) Answer *any* ***six*** questions.

(2) Each question carries **five** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write the factors that affect enzyme activity. 5

2. Define and classify Proteins with example. 1+4=5

3. Define and classify Vitamins with examples and write the functions and deficiency diseases of Vitamin A. 1+2+2=5

4. What is Glycolysis and write the reactions of Glycolysis. 1+4= 5

5. Write the reactions of Urea cycle. 5

6. What are electrolytes and write the functions and deficiency diseases of *(a)* Calcium and *(b)* Sodium 5

7. Write about liver function tests and their clinical significances. 5

PART—B

3×10=30

Instructions : (1) Answer *any* **ten** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

8. Write the structures of *(a)* Glucose *(b)* Maltose and *(c)* Galactose. 1+1+1=3

9. Write the classification of Amino Acids based on nutritional requirements with example. 3

10. Define the terms *(a)* Carbohydrates *(b)* Proteins and *(c)* Lipids 1+1+1=3

11. Write the mechanism of action of Enzymes. 3

12. Write the co-enzymes of B-complex vitamins. 3

13. Write about *(a)* fatty liver and *(b)* phenyal ketonuria. 3

14. Write the function and deficiency diseases of Iron. 3

15. Write lipid profile tests and their clinical significances. 2+1=3

16. Write about *(a)* Kwashiorkor and *(b)* Marasmus. 3

17. Write the significance of abnormal constituents of urine. 3

18. Write the role of platelets in health and disease. 3

PART—C

1×20=20

Instructions : (1) Answer all questions.

(2) Each question carries ***one*** marks.

(3) Choose the correct answer or write the ***correct*** answer.

19. The active site of protein synthesis is

(a) Nucleus

(b) Ribosomes

(c) Mitochondria

(d) Cell sap

20. Cobalt is the essential component of

(a) Vitamin B1

(b) Vitamin B6

(c) Vitamin B12

(d) All of the above

21. Which of the following Vitamin deficiency causes Beri-Beri?

(a) Vitamin A

(b) Vitamin B_1

(c) Vitamin B_6

(d) Vitamin B_{12}

22. Iodine is used for the prevention of

(a) Goiter

(b) Pellagra

(c) Scurvy

(d) Diarrhoea

23. Dehydration is occurred due to_____

(a) insufficient intake of water

(b) excessive water

(c) Both *(a)* and *(b)*

(d) None of the above

24. Decrease in number of Lymphocytes below the normal value is called as

(a) lymphocytosis

(b) lymphopenia

(c) Both *(a)* and *(b)*

(d) purpura

25. An example of ketone bodies is

(a) acetone

(b) acetoacetate

(c) betahydroxybutyrate

(d All of the above

26. The end product of Glycolysis under anaerobic condition is

(a) pyruvic acid

(b) lactate

(c) acetic acid

(d) acetoacetate

27. Diabetes Mellitus occurs due to deficiency of

(a) insulin

(b) glucagon

(c) cortisone

(d) thyroxine

28. An example of non-reducing sugar is

(a) frutose

(b) galactose

(c) sucrose

(d) glucose

29. LDL refers to

(a) bad cholesterol

(b) good cholesterol

(c) total cholesterol

(d) None of the above

30. Red blood cells are also called as

(a) leukocytes

(b) erythrocytes

(c) lymphocytes

(d) platelets

31. Molisch test is used for the identification of _____.

32. Example of sulphur containing amino acid is _____.

33. Phenylketonuria occurs due to the deficiency of _____ enzyme.

34. Example of Pyrimidine nitrogenous bases is _____.

35. Deficiency of Vitamin-D leads to_____ in Children.

36. Benzidine test is used for detection of _____ in the urine.

37. Pellagra occurs due to the deficiency of_____.

38. Synthesis of Glycogen from glucose is called_____.

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