

BLDE (DEEMED TO BE UNIVERSITY)
MBBS PHASE – I EXAMINATION

[Time :3 Hours]

[Max. Marks: 80]

BIOCHEMISTRY – PAPER – I

QP CODE:1015

Your answer should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Each answer should be written on new page only.

Write Question No. in the middle of margin.

Long Essay: (Answer to be started on fresh page only)

2 X 10 = 20

1. A 6 year old boy was brought to the hospital with complaints of painful, swollen and bleeding gums. On examination, petechiae were seen, joints were swollen and painful. Capillary fragility was positive. Iron deficiency anemia was also present.
 - a. What is your most probable diagnosis? (1 Mark)
 - b. What are the various metabolic functions of this nutrient (4 Marks)
 - c. What is the biochemical basis of clinical features of this patient? (2 Marks)
 - d. What dietary advice is given to this patient? (1 Mark)
 - e. What are the therapeutic uses of this nutrient? (1 Mark)
 - f. Is this nutrient synthesised in humans? Give reason (1 Mark)
2. What is the normal range of blood pH? What is the importance of maintaining acid base balance in the body? Write in detail how kidneys help in maintaining acid base balance. Add a note on metabolic acidosis. (1+2+5+2)

Short Essay: (Answer to be started on fresh page only)

6 X 5 = 30

3. What is cell membrane? Give the Fluid mosaic model with a neat labelled diagram. (1+4 Mks)
4. Describe the regulation of enzyme activity.
5. A 50 year old man got a regular health check-up. He was informed that his lipid profile was abnormal and he had hypercholesterolemia. He was advised dietary modifications and lifestyle changes. He was put on combination drugs of atorvastatin-5 mg and low dose aspirin-75 mg therapy to be taken once everyday.
 - a. What is the biochemical basis of giving statins and low dose aspirin therapy in hypercholesterolemia? (2 Marks)
 - b. What is lipid profile? Enumerate the normal levels of all the parameters measured in lipid profile. (2 Marks)
 - c. What is the significance of Lp(a) and homocysteine? (1 Mark)
6. Describe single electron carrier of the respiratory chain. Indicate the sites of ATP formation during electron transport with diagram. Name two inhibitors of ETC.
7. A 20 year old medical student presented with muscle pain and cramps, stiffness, tingling of hands and feet, recurrent carpopedal spasms. Her diet was devoid of milk and milk products.
 - a. What is the probable diagnosis? Give reason (1 Mark)
 - b. Describe the various causes and clinical features of this disorder (2 Marks)
 - c. Discuss the management of this case (2 Marks)
8. Discuss the professional qualities of physician.

Short Answer: (Leave three lines gap between the answers)

10 X 3 = 30

9. Keshan's disease.
10. Write a note on Nitrogen balance.
11. List the functions of water in health and disease.
12. What is Lipid peroxidation and the biological effects?
13. Enumerate plasma buffer. Add a note on alkali reserve
14. What is Folate trap?
15. Write a note on Anapleurosis.
16. What are the functions of copper?
17. Write a note on Osteogenesis imperfect.
18. What is K_m value and its significance?

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[Max. Marks: 80]

BIOCHEMISTRY – PAPER – II

QP CODE:1016

Your answer should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.
Each answer should be written on new page only.
Write Question No. in the middle of margin.

Long Essay: (Answer to be started on fresh page only)

2 X 10 = 20

1. A 60 years old male patient presented with progressive yellowish discoloration of skin and dark urine and pale stools since 4 weeks. O/E jaundice was present.
Lab findings: Serum Total Bilirubin: 20 mg/dl, Serum Direct Bilirubin: 17.5 mg/dl and Serum Indirect Bilirubin: 2.5 mg/dl, Serum ALP was elevated with Normal levels of AST & ALT.
 - a) Give your probable diagnosis and the clinical correlation for the same.(3m)
 - b) Explain the metabolism of Bilirubin with a neat labeled diagram. (4m)
 - c) Enumerate the bile salts and the biochemical function. (2m)
 - d) Mention 2 causes for the above condition. (1m)
2. Describe Transcription of RNA. Add a note on post-transcriptional modification of mRNA.(7+3mrk)

Short Essay: (Answer to be started on fresh page only)

6 X 5 = 30

3. A 1-year-old baby was brought with history of passing urine with mousy odor, delayed head control, light blonde hair, occasional tremors and irritability.
Lab reports: Plasma phenyl alanine significantly elevated, Urine ferric chloride test was positive.
 - a) Comment on the above case scenario and give your probable diagnosis. (1m)
 - b) Mention the cause of this condition.(2 m)
 - c) How do you manage this condition? (2 m)
4. Mention the compounds derived from Glycine. Add a note on Creatinine production. (3+2)
5. Mention the causes for Gout and the biochemical basis for the management. (2+3)
6. Describe the steps of Polymerase chain reaction and its applications. (3+2)
7. Describe the applications of rDNA technology in medicine
8. What is thalassemia? Explain the biochemical basis of clinical features seen in thalassemia.

Short Answer: (Leave three lines gap between the answers)

10 X 3 = 30

9. Mention 3 reaction of detoxifications by conjugation.
10. Mention the importance of lifelong learning as important part of a physician growth.
11. How ethyl alcohol is metabolized in the body.
12. List 6 tumor markers and corresponding cancers.
13. What is hyperthyroidism and the interpretation of the lab findings?
14. List out 6 pre-analytical errors of Clinical biochemistry laboratory.
15. What is an essential amino acid and mention all essential amino acids.
16. Mention 4 functions of Albumin and the normal serum levels of Albumin.
17. Mention the significance and the enzymes of salvage pathways of purines.
18. Write the labelled structure of a Immunoglobulin.