Jan-21

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

**[ Time :3 Hours]** **[Max. Marks: 80+20(MCQ)]**

## BIOCHEMISTRY – PAPER – I
## QP CODE: 1005 - CBME

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 number in left side of margin

**Long Essay: (Answer to be started on fresh page only)** **2 X 10 = 20**

1. A 6-year-old boy with frequent episodes of weakness accompanied by sweating, feeling of dizziness and reeling sensation was admitted to the hospital. On examination, hepatomegaly with 100g tissue glycogen (normal, 6g/100g tissue) was found. Fasting blood sample analysis reports were as follows: Glucose: 30mg/dl; Lactate: 7.1mmol/L (normal, 0.56-2 mmol/L); Uric acid: 8.5mg/dl (normal 3-7mg/dl); Urine negative for benedict's. Based on the evaluation, the doctor advised taking small frequent meals.
    a. What is the probable diagnosis and name of the defective enzyme? ( 2+2+3+3)
    b. Comment on the blood glucose level in relation to the clinical symptoms observed.
    c. Explain the pathway that is defective in this patient.
    d. Explain the biochemical basis for Laboratory reports and hepatomegaly in this case
2. Mention the distribution of calcium in the body, its sources, RDA, absorption in intestine and regulation of blood calcium levels. (1+1+1+3+4)

**Short Essay: (Answer to be started on fresh page only)** **6 X 5 = 30**

3. Renin angiotensin mechanism.
4. A gout patient was prescribed allopurinol as medication. What is the mechanism action of allopurinol . Describe different types of enzyme inhibitions.
5. Oral GTT
6. A 34 year-old female has reported with history of forgetfulness, loss of hair and cold intolerance. She had been diagnosed with hypothyroidism. What would be the effect of this disease on BMR. What is normal BMR. Explain the factors which affect BMR.
7. Galactosemia.
8. Define fatty liver and mention the causes for fatty lever. Mention the lipotropic factors

**Short Answer: (Leave three lines gap between the answers)** **10 X 3 = 30**

9. Enumerate three functions of albumin.
10. Functions of lysosomes
11. What is anion gap? Mention the normal range
12. Define Specific dynamic action (SDA) of food stuff. Mention the SDA of proteins, carbohydrates and fats
13. Functions of prostaglandins
14. Deficiency manifestation of Vitamin A.
15. Enumerate three therapeutic uses of enzymes.
16. Define polyunsaturated Fatty Acids?(PUFA)? Give examples
17. List the different isoenzymes of creatine kinase with their significance
18. Functions of Collagen.

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# MBBS PHASE – I EXAMINATION

[ Time :3 Hours] [Max. Marks: 80+20(MCQ)]

## BIOCHEMISTRY – PAPER – II
## QP CODE: 1006 - CBME

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 number in left side of margin

**Long Essay: (Answer to be started on fresh page only)** **2 X 10 = 20**

1. Define transcription? Describe in detail the steps of transcription in eukaryotes.
2. An infant of 2 weeks had convulsions. He was born after a normal pregnancy and had taken his feeds normally. His mother had observed a peculiar mousy odor in the child's urine. The urine was tested by ferric chloride test: characteristic green colour was observed which indicated the presence of phenylpyruvic acid. Quantitative analysis of the blood and urine yielded increased values for phenylalanine and its metabolites. Plasma phenylalanine 1.8 mmol/L (reference range < 0.09 mmol/L);Urine phenylalanine 4.8 mmol/L (Normal Trace);Urine phenylpyruvate 6.2 mmol/L ( normally Absent);Urine phenyllactate 11.2 mmol/L ( normally Absent ) Similar results were obtained on repeating tests after few days days.
    a. Identify the biochemical defect.(1)
    b. Comment on the biochemical test results.(5)
    c. Explain the cause of convulsions.(2)
    d. What treatment do you suggest for this child (2)

**Short Essay: (Answer to be started on fresh page only)** **6 X 5 = 30**

3. Give an account of the formation of specialized products formed from glycine
4. Define clearance. Justify use of creatinine clearance to measure GFR
5. Explain the basic procedure in polymerase chain reaction
6. A 21-year-old healthy male patient with sudden onset abdominal pain, nausea and vomiting, hypertension, tachycardia, and peripheral neuropathy after consumption of first alcoholic beverage. Further testing revealed elevated levels of both serum and urine ALA and PBG.
    a. What is your probable diagnosis and what is the biochemical defect ? (2)
    b. Give biochemical reason for elevated levels of both serum and urine ALA and PBG. (3)
7. Discuss the detoxification by conjugation reactions with two examples
8. Explain the Lac Operon model of Gene expression

**Short Answer: (Leave three lines gap between the answers)** **10 X 3 = 30**

9. Explain the formation of active methionine. Give two examples for transmethylation reactions (1+2).
10. Explain the primary structure of proteins. Mention its significance.
11. Enumerate different types of RNAs. Draw the clover leaf structure of t-RNA. (1+2)
12. Explain how to measure the specific gravity of urine
13. Discuss the role of growth factors
14. List the derivatives of amino acid glycine
15. Write briefly on antioxidants
16. Define glucogenic and ketogenic amino acids.
17. Alkaptonuria
18. Define acute phase reactants. Give two examples