



ND-2006000101030002 Seat No. _____

First Year M. B. B. S. Examination

December - 2021

Biochemistry : Paper - II

(New CBME Pattern)

Time : Hours]

[Total Marks : 80

Instructions : (I)

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Fill up strictly the details of signs on your answer book.

Name of the Examination : _____

First Year M. B. B. S. _____

Name of the Subject : _____

Biochemistry : Paper - II _____

Subject Code No. : _____

2 0 0 6 0 0 1 0 1 0 3 0 0 0 2

Section No. (1, 2,): Nil

Seat No.: _____

Student's Signature _____

- Use blue/black ball point pen only.
- The numbers to the right indicates full marks.
- Draw diagrams wherever necessary

Section B:

(40 Marks)

2: Long Answer Questions (ANY TWO)

(2 x 10 = 20)

- Describe mutations. Explain various types of DNA repair processes with suitable diagram (4+6=10).
- How phenylalanine is converted to tyrosine? Describe biologically important substances synthesized from tyrosine. Describe phenylketonuria in detail (2+5+3=10)
- Describe coenzymes and isoenzymes. Write diagnostic and therapeutic applications of enzymes (2+2+4+2=10).

3: Write Brief Answer / Justifications / Biochemical basis (ANY TEN) (10 x 2 = 20).

- Restriction endonuclease.
- Nutritional classification of amino acids.
- Vitamin D is a pro-hormone, explain.
- Telomerase is essential for dividing cells.
- IUB classification of enzymes with one example each.
- Lead poisoning causes anemia.

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[Contd...

- g) Ammonia is toxic to brain.
- h) Phenylalanine has sparing action on tyrosine
- i) Glycine is a neurotransmitter
- j) Inhibitors of protein synthesis and their action.
- k) Brown adipose tissue keeps body warm.

Section C: (40 Marks)

4: Short answer questions (ANY FOUR) (4 x 5 = 20)

- a) Describe the polymerase chain reaction with its applications.
- b) Describe salvage pathway of purine nucleotide synthesis with associated disorders.
- c) What is the clinical significance of 2, 3-BPG? Add a note on effect of 2, 3-BPG on oxygen dissociation curve.
- d) Metabolism and biochemical functions of vitamin D.
- e) Biologically important peptides.

5: Clinical Cases (ALL COMPULSORY) (2 x 10 = 20)

Case 1:

A newborn baby was brought with yellowish discoloration of skin and conjunctiva 5 days after birth. Serum unconjugated bilirubin was high. Treatment with phototherapy and oral phenobarbitone was started.

- a) What is the diagnosis and cause of the above condition?
- b) What is basis of phototherapy in treatment of this disorder?
- c) What is basis of phenobarbitone in treatment of this disorder?
- d) What are serious consequences, if treatment is delayed in this patient?
- e) Write Normal range of serum total, conjugated and unconjugated bilirubin?

Case 2:

43-year-old male working in a shipping company visited Dental OPD with complain of bleeding gums and hemorrhagic patches on the skin. He was taking frozen food throughout his sailing time. The dentist diagnosed him as a case of scurvy.

- a) Write any four sources of vitamin C.
- b) Name the enzymes requires vitamin C as co-factor.
- c) Vitamin C deficiency may be associated with iron deficiency, explain.
- d) Human cannot synthesis vitamin C, justify.
- e) RDA of vitamin-C.

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