

# ND-2006000101030002 Seat No. \_\_\_\_\_

## First Year M. B. B. S. Examination

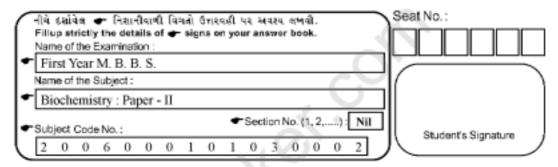
December - 2021

Biochemistry: Paper - II

(New CBME Pattern)

Time: Hours] [Total Marks: 80

## Instructions: (1)



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

Section B:

(40 Marks)

### 2: Long Answer Questions (ANY TWO)

 $(2 \times 10 = 20)$ 

- a) 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).

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

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

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

Section C:

(40 Marks)

### 4: Short answer questions (ANY FOUR)

 $(4 \times 5 = 20)$ 

- 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)

 $(2 \times 10 = 20)$ 

#### Case 1:

A newborn baby was brought with yellowish discoloration of skin and conjunctiva 5 days after birth. Scrum 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.
- Name the enzymes requires vitamin C as co-factor.
- 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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