

**FIRST PROFESSIONAL M.B.B.S. DEGREE EXAMINATION  
JANUARY 2010**

**BIOCHEMISTRY—Paper II**

(2007 and earlier admissions)

Time : Three Hours

Maximum : 50 Marks

*Answer all the questions.*

*Answer Sections A and B answered in separate answer books.*

*Draw diagrams wherever necessary.*

*MCQs should be answered first in the response sheet provided.*

**Section A**

- I. What is the normal blood calcium level ? Discuss the factor regulating the blood calcium level within the normal range. Add a note on functions of calcium.

(1 + 6 + 3 = 10 marks)

- II. Write short notes on :

- (a) Recombinant DNA technology.
- (b) Applications of radioactive isotopes in Medicine.

(2 × 5 = 10 marks)

- III. Multiple Choice Questions. Single response type 10 (separate sheet attached).

(10 × ½ = 5 marks)

**Section B**

- IV. Answer briefly on :

- (a) Mitochondrial DNA.
- (b) Gene therapy.
- (c) Functions of Vitamin A.
- (d) Structure of immunoglobulins.
- (e) Post-translational modifications.

(5 × 3 = 15 marks)

- V. Give precise answers :

- (a) TATA Box.
- (b) Anion gap.
- (c) Telomerase enzyme.
- (d) p53 protein.
- (e) Deleterious effects of smoking.

(5 × 2 = 10 marks)

## III. MULTIPLE CHOICE QUESTIONS

Note :—(1) *Do not write any thing on the question paper.*

(2) *Write your register number in the answer-sheet provided.*

(3) *Select one most appropriate response and encircle the corresponding alphabet against each question number in the answer-sheet provided. Each question carries ½ mark.*

1. Alpha fetoprotein is the diagnostic marker in :  
(A) Hepatoma. (B) Colon Carcinoma.  
(C) Seminoma. (D) Gastric Carcinoma.
2. Which type of radiation has maximum penetrating power :  
(A) Alpha radiation. (B) Beta radiation.  
(C) Gamma radiation. (D) None of the above.
3. Lesch Nyhan syndrome is due to deficiency of :  
(A) OPRTase enzyme.  
(B) HGPRTase enzyme.  
(C) Adenosine deaminase.  
(D) APRTase enzyme.
4. Enzyme involved in base excision repair is :  
(A) DNA glycosylase and DNA polymerase.  
(B) DNA polymerase and Exonuclease.  
(C) DNA polymerase and GATC endonuclease.  
(D) DNA glycosylase and Exonuclease.
5. Normal serum level of ceruloplasmin is :  
(A) 50 – 70 mg/dl. (B) 75 – 100 mg/dl.  
(C) 25 – 50 mg/dl. (D) 5 – 10 mg/dl.
6. Galactose tolerance test is to assess :  
(A) Excretory function of liver.  
(B) Gastric function.  
(C) Metabolic capacity of liver.  
(D) Synthetic function of liver.

7. First position nitrogen in purine ring is derived from :-  
(A) Aspartic acid. (B) Glutamine.  
(C) Glutamic acid. (D) Glycine.
8. Diphtheria toxin can inhibit :  
(A) Translation process. (B) Transcription process.  
(C) Replication process. (D) Post-Transcriptional processes.
9. Higher primates can not synthesise Vitamin C because of absence of enzyme .  
(A) Glucoronate reductase. (B) Gulonolactone oxidase  
(C) Xylulose reductase. (D) Xylitol dehydrogenase.
10. Sick cell hemoglobin is an example of :  
(A) Unacceptable mutation. (B) Partially acceptable mutation.  
(C) Acceptable mutation. (D) Frame shift mutation.

(10 × ½ = 5 marks)