

**The West Bengal University of Health Sciences**  
**MBBS 1<sup>st</sup> Professional Examination (New Regulation), March 2021**

**Subject: Biochemistry**  
**Paper : II**

**Full Marks : 100**  
**Time : 3 hours**

*Attempt all questions. The figures in the margin indicate full marks.*

- a) What is a balanced diet? What is the nutritional importance of dietary proteins? Discuss the protein-energy malnutrition with special reference to kwashiorkor disease. 3+6+6
- b) Explain the replication of a DNA molecule in the context of initiation, elongation and termination in prokaryotes with suitable diagrams. Enumerate the differences between DNA polymerase I, II & III. 10+5
2. a) Expand the term PCR. Describe different steps for a PCR reaction. Enumerate any four uses of the PCR. 1+7+2
- b) Describe the structural characteristics of an immunoglobulin molecule in general with a diagram. Explain the functional differences between T cell and B cell mediated immunity. 5+5
- c) Enumerate the different modes of repair of DNA damage in humans. Explain the mechanism of any one of them with the disorder arising due to the defects on that pathway. 4+4+2
3. Write a short notes on the following: 2 x 5
- a) Tumour marker.
- b) Cell cycle. 5 x 4
4. Explain the following statements:
- a) Macrophages show beneficial effects by generating free radicals.
- b) Endocrinal disorders may predispose to obesity.
- c) Deficiency of ascorbic acid causes fragility of blood vessels.
- d) Under some conditions immunity causes damaging effects.
- e) Proto-oncogenes are regulatory genes.

P.T.O.