

[LB 505]

AUGUST 2012

Sub. Code: 4056

FIRST YEAR M.B.B.S DEGREE EXAM

Paper VI – BIOCHEMISTRY – II

Q. P. Code: 524056

Time: 180 Minutes

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

Pages Time Marks
(Max.)(Max.)(Max.)

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|--|----|----|----|
| 1. With the help of a figure, describe the process by which DNA replication takes place in a cell. | 16 | 25 | 15 |
| 2. What are the functions of sodium in the body? What is the reference range for levels of serum sodium? Describe the working of the renin-angiotensin-aldosterone system to maintain optimal amounts of sodium in the body. Briefly discuss disorders associated with derangements in sodium homeostasis. | 16 | 25 | 15 |

II. Write notes on:

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|---|---|---|---|
| 1. Secondary structure of proteins. | 3 | 8 | 5 |
| 2. Structure of an immunoglobulin, with the help of a figure. | 3 | 8 | 5 |
| 3. Causes and manifestations of gout. | 3 | 8 | 5 |
| 4. Transamination reactions. | 3 | 8 | 5 |
| 5. Role of lungs in maintenance of pH of blood. | 3 | 8 | 5 |
| 6. Conjugation reactions involved in metabolism of xenobiotics. | 3 | 8 | 5 |
| 7. Principle and applications of electrophoresis. | 3 | 8 | 5 |
| 8. Functions of tyrosine in the body. | 3 | 8 | 5 |
| 9. Tumour markers. | 3 | 8 | 5 |
| 10. Salvage pathway for purines and its importance in the body. | 3 | 8 | 5 |

III. Short answers on:

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|---|---|---|---|
| 1. Outline the distribution of water in the various compartments of the body. | 1 | 5 | 2 |
| 2. What is the mechanism of action of steroid hormones? | 1 | 5 | 2 |
| 3. List 4 features of the genetic code. | 1 | 5 | 2 |
| 4. Explain the clinical relevance of serum creatinine levels. | 1 | 5 | 2 |
| 5. What is meant by the polymerase chain reaction? List 2 of its applications. | 1 | 5 | 2 |
| 6. What are the reference levels of glucose and protein in cerebrospinal fluid? How are they affected in bacterial meningitis? | 1 | 5 | 2 |
| 7. What is meant by quaternary structure of a protein? Name a protein, abundantly found in blood that has a quaternary structure. | 1 | 5 | 2 |
| 8. Name the bases found in nucleic acids. | 1 | 5 | 2 |
| 9. List 4 causes of respiratory acidosis. | 1 | 5 | 2 |
| 10. What are the functions of glutathione? | 1 | 5 | 2 |
