

M.Sc. BIOCHEMISTRY DEGREE EXAMINATION**(For Candidates admitted from 2008-2009 regulations)****PAPER III – MOLECULAR BIOLOGY, CLINICAL BIOCHEMISTRY,
FUNCTION TESTS, ENDOCRINOLOGY, IMMUNOLOGY,
RECENT ADVANCES IN BIOCHEMISTRY*****Q.P. Code: 281203*****Time : Three Hours****Maximum : 100 marks****Answer ALL questions****I. Elaborate on:****Pages Time Marks
(Max.) (Max.) (Max.)**

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|---|----|---------|----|
| 1. What is Blot transfer technique? Briefly explain the various types of blot transfer techniques and their applications. | 17 | 40 min. | 20 |
| 2. What is a buffer? Explain how the various buffers help to maintain acid base status. | 17 | 40 min. | 20 |

II. Write notes on :

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|---|---|---------|---|
| 1. What is genetic code? What are the features of the genetic code? | 4 | 10 min. | 6 |
| 2. What are Proto-oncogenes? Explain the normal mechanism of action of proto-oncogenes and how they are activated to oncogenes. | 4 | 10 min. | 6 |
| 3. Anion gap. | 4 | 10 min. | 6 |
| 4. Monoclonal antibodies and their clinical significance. | 4 | 10 min. | 6 |
| 5. Explain mechanism of hormone action through cytosolic or nuclear receptors. | 4 | 10 min. | 6 |
| 6. Transport of iron in plasma and its storage. | 4 | 10 min. | 6 |
| 7. What are the biochemical investigations to assess the tubular function of kidneys? | 4 | 10 min. | 6 |
| 8. Alkaline phosphatase and its clinical importance. | 4 | 10 min. | 6 |
| 9. Enumerate and describe briefly the pre-analytical errors in clinical laboratory. | 4 | 10 min. | 6 |
| 10. Laboratory Information System. | 4 | 10 min. | 6 |

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RECENT ADVANCES IN BIOCHEMISTRY***Q.P. Code: 281203***Time : Three Hours****Maximum : 100 marks****Answer ALL questions in the same order.****I. Elaborate on:****Pages Time Marks
(Max.) (Max.) (Max.)**

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|---|----|---------|----|
| 1. Describe in detail Recombinant DNA technology and its application in medicine. Add a note on molecular scissors. | 17 | 40 min. | 20 |
| 2. How is acid- base balance regulated in the body? | 17 | 40 min. | 20 |

II. Write Notes on :

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|---|---|---------|---|
| 1. Investigations to be performed in a case of Nephrotic syndrome. | 4 | 10 min. | 6 |
| 2. Estimation of blood glucose with a note on sample required, interferences and reference range. | 4 | 10 min. | 6 |
| 3. Describe the various post-transcriptional modifications. | 4 | 10 min. | 6 |
| 4. Mention the normal levels of serum electrolytes. Detail about the sodium homeostasis in our body. | 4 | 10 min. | 6 |
| 5. Evaluation of thyroid function in a case of goiter. | 4 | 10 min. | 6 |
| 6. Hyperuricemia. | 4 | 10 min. | 6 |
| 7. Describe in detail western blotting technique and its applications. | 4 | 10 min. | 6 |
| 8. Describe about mitochondrial DNA. | 4 | 10 min. | 6 |
| 9. Describe the various tumour markers and their applications. | 4 | 10 min. | 6 |
| 10. Estimation of amylase in the laboratory with a note on sample required and its clinical applications. | 4 | 10 min. | 6 |

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APRIL 2013

Sub. Code: 1203

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**PAPER III – MOLECULAR BIOLOGY, CLINICAL BIOCHEMISTRY,
FUNCTION TESTS, ENDOCRINOLOGY, IMMUNOLOGY,
RECENT ADVANCES IN BIOCHEMISTRY**

Q.P. Code: 281203

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. How is uric acid produced in the body? Add a note on disorders associated with it.
2. Describe in detail protein synthesis and the various post-translational modifications of proteins.

II. Write notes on:

(10 x 6 = 60)

1. Describe the various stages of cell cycle with a note on its regulation.
2. Define mutation. Classify & describe the various types with examples.
3. Describe the types of DNA damage & repair mechanism.
4. Describe the mechanism of action of Type I hormones.
5. What are the various diagnostic & prognostic tests to be performed in a diabetic patient.
6. How is calcium homeostasis maintained in our body?
7. Describe in detail the structure , types and functions of Immunoglobulins.
8. CSF analysis and its application.
9. Estimation of Gamma Glutamyl Transferase (GGT).
10. Prenatal diagnosis of inborn errors of metabolism.
