

FINAL EXAM  
 DECEMBER 2015

NATIONAL BOARD OF EXAMINATIONS

**BIOCHEMISTRY**
**PAPER – III**

BIO/D/15/03/III

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:**

1.	Write various post-translational modifications of a newly synthesized peptide. Giving a suitable example, explain how post translational modification is important for maturation and functionality of a protein.	5+5
2.	What do you understand by cDNA microarray? Write its principle and clinical applications.	3+(3+4)
3.	Describe the structure of an immunoglobulin. List the different types of immunoglobulin alongwith their functions.	5+5
4.	Explain the term restriction fragment length polymorphism (RFLP). Describe the procedure with examples. List applications of RFLP.	3+4+3
5.	Write the molecular mechanisms by which p53 and retinoblastoma regulate the cell cycle progression. Name different DNA repair mechanisms that exist in human cells.	6+4
6.	What is meant by denaturation of DNA? Define hyperchromicity of denaturation. Write briefly about melting temperature of DNA.	5+5
7.	What is non-specific immunity? Write in detail about its various components.	4+6
8.	What are complements? Write in detail about its role in immunity?	3+7
9.	a) Hypersensitivity b) SCID(Severe Combined Immunodeficiency Disease) c) Ribozymes d) SNP (Single nucleotide polymorphism)	2.5x4=10
10.	a) Compare and contrast stem cells and cancer cells. b) Giving a suitable example, explain the role of oncogenes and tumor suppressor genes in transformation of normal cells to cancerous cells.	4+6

\*\*\*\*\*