FINAL EXAM
DECEMBER 2013

NATIONAL BOARD OF EXAMINATIONS

BIOCHEMISTRY

PAPER - III

BIOCHEM/D/13/03/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.*

1. Describe the principle, operation and biochemical application of: 5+5
   a) Chemiluminescence
   b) Immuno-electrophoresis

2. Explain, how excessive alcohol intake may lead to: 4+3+3
   a) Fatty liver
   b) Aggravation of gouty arthritis
   c) Hypoglycemic shock

3. Briefly discuss the role of: 5+5
   a) RNA viruses in oncogenesis
   b) Tumor suppressor genes in cancer

4. Define haemoglobinopathies. How are they classified? Describe the molecular abnormalities seen in thalassemias? 2+3+5

5. Discuss the pathobiochemistry of: 5+5
   a) Atherosclerosis
   b) Renal stones

6. Discuss briefly: 7+3
   a) Urinary tests for detection of inborn errors of metabolism.
   b) Estimation of RBC's enzymes to diagnose deficiency of vitamin B_1 and B_2 status

7. Describe the various disorders associated with purine nucleotides. 10

8. Discuss various genetic techniques used for the diagnosis of inborn errors of metabolism and the role of gene therapy in the treatment of such disorders. 6+4

9. Discuss the principle and clinical applications of the following: 3+3+4
   a) D-Xylose absorption test
   b) BT- PABA excretion test
   c) FISH technique

10. Discuss some of the major diseases associated with: 5+5
    a) Muscle proteins
    b) Mitochondria

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