

**MANIPAL UNIVERSITY**  
**SECOND YEAR B.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009**  
**SUBJECT: CLINICAL BIOCHEMISTRY**

Monday, June 01, 2009

Time: 10:00-13:00 Hrs.

Max. Marks: 80

**Answer all questions. Draw diagrams if necessary.**

1. What are the indications for LFT? Discuss LFT briefly.
2. Define enzyme. What are the properties of enzymes? Discuss about enzymes indicating the hepatocellular damage.
3. Discuss the chemistry and functions of thyroid hormones.

(10×3 = 30 marks)

4. Write detailed notes on:

- 4A. LDH.
- 4B. Lipid profile.
- 4C. Serum Protein Electrophoresis.
- 4D. Vanden Bergh reaction.
- 4E. Intravenous GTT.
- 4F. Respiratory regulation of pH.
- 4G. Creatinine clearance test.

(5×7 = 35 marks)

5. Write short notes on:

- 5A. Metabolic acidosis.
- 5B. CEA.
- 5C. HbS.
- 5D. HDL Cholesterol.
- 5E. Testosterone.

(3×5 = 15 marks)



**MANIPAL UNIVERSITY**  
**SECOND YEAR B.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009**  
**SUBJECT: HAEMATOLOGY AND CLINICAL PATHOLOGY**

Tuesday, June 02, 2009

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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1. Define and classify anemia. Describe the etiology, clinical features and laboratory diagnosis of hemolytic anemias.  
(5+10 = 15 marks)
2. What are the normal constituents of urine? Describe the various types and methods of collection of urine samples. Add a note on urine preservatives.  
(3+8+4 = 15 marks)
3. Write short notes on:
- 3A. FAB classification and laboratory diagnosis of acute myeloid leukemia.  
3B. ESR.  
3C. Semen analysis.  
3D. RBC indices and their clinical significance.  
3E. Automation in hematology.  
(6×5 = 30 marks)
4. Describe the principle, procedure and interpretation of the following tests:
- 4A. Prothrombin time.  
4B. Osmotic fragility.  
4C. Benedicts test in urine analysis.  
4D. LE cell preparation.  
(5×4 = 20 marks)



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**MANIPAL UNIVERSITY**  
**SECOND YEAR B.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2009**  
**SUBJECT: IMMUNOHAEMATOLOGY**

Wednesday, June 03, 2009

Time: 10:00-11.30 Hrs.

Max. Marks: 40

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✍ **Answer ALL the questions.**

1. Describe ABO blood group system in detail.

(10 marks)

2. **Write short notes on:**

2A. Platelet rich plasma.

2B. Autoantibodies.

2C. Adverse donor reactions.

2D. Pre transfusion tests.

2E. Antigen-antibody reactions.

(6×5 = 30 marks)

