

# Question Paper

Exam Date & Time: 25-Jun-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**FOURTH SEMESTER M.Sc. MLT DEGREE EXAMINATION - JUNE 2024**  
**SUBJECT: MLT6102 - VIROLOGY AND PARASITOLOGY**  
**(SPECIALIZATION: MICROBIOLOGY AND IMMUNOLOGY)**  
**(2021 SCHEME)**

**Marks: 100**

**Duration: 180 mins.**

**Answer all the questions.**

- |     |   |      |
|-----|---|------|
| 1)  | Explain the major antigens, antigenic variation, pathogenesis, laboratory diagnosis and treatment of Influenza viruses. | (20) |
| 2)  | Define commensalism. Explain the morphology, pathogenesis, and laboratory diagnosis of toxoplasmosis.                   | (20) |
| 3A) | Explain the morphology, pathogenesis, and laboratory diagnosis of Herpes Simplex Virus II infection.                    | (10) |
| 3B) | Explain the general features of Trematodes. Explain the life cycle and laboratory diagnosis of Schistosomes.            | (10) |
| 3C) | Explain the pathogenesis, clinical manifestations, and laboratory diagnosis of Hepatitis C infection                    | (10) |
| 3D) | Define viral inclusion bodies. Explain the methods of identification of viruses from cell culture.                      | (10) |
| 4A) | Explain the morphology, pathogenesis, and laboratory diagnosis of Enterobius vermicularis.                              | (5)  |
| 4B) | Define Oncogene. List the oncogenic viruses. Explain the mechanism of oncogenesis.                                      | (5)  |
| 4C) | Explain the pathogenesis and laboratory diagnosis of Echinococcus granulosus.   | (5)  |
| 4D) | Explain the pathogenesis and Laboratory diagnosis of Parvovirus infection.  | (5)  |

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## MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. MLT DEGREE EXAMINATION - JUNE 2024  
SUBJECT: MLT6202 - METABOLIC DISORDERS AND APPLIED BIOCHEMISTRY II  
(SPECIALIZATION: CLINICAL BIOCHEMISTRY)  
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

Draw diagrams wherever necessary.

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|-----|---|------|
| 1)  | List fat soluble and water-soluble vitamins. Explain clinical importance of vitamin B6, B9 and B12. Add a note on recent advances to identify the deficiency of these vitamins. | (20) |
| 2)  | Discuss glycolysis with its energetics and regulation. Add a note on clinical significance of HMP shunt pathway.  | (20) |
| 3A) | Define isoenzymes. List and explain diagnostic enzymes with their isoenzymes.   | (10) |
| 3B) | List and discuss useful products of glycine and tryptophan metabolism.  | (10) |
| 3C) | Explain in detail the diagnosis and clinical manifestation of Cystic Fibrosis.  | (10) |
| 3D) | Explain the principle of antidotal therapy.   | (10) |
| 4A) | List and brief on products synthesized from cholesterol degradation.  | (5)  |
| 4B) | Discuss role of PTH in maintaining calcium level.   | (5)  |
| 4C) | Explain G6PD deficiency.  | (5)  |
| 4D) | Explain any four drug of abuse.   | (5)  |

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## MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. MLT DEGREE EXAMINATION - JUNE 2024  
SUBJECT: MLT6402 - IMMUNOHEMATOLOGY AND FUNDAMENTALS OF BLOOD BANKING  
(SPECIALIZATION: HAEMATOLOGY AND IMMUNOHAEMATOLOGY)  
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

Draw diagrams wherever necessary.

- 1) Explain ABO blood group typing. Explain Bombay phenotype. (20)
- 2) List the blood components. Explain indication, preparation and storage of fresh frozen plasma and cryoprecipitate. Add a note QC of blood components. (20)
- 3A) Define Hemolytic disease of foetus and newborn (HDFN) and list the causes. Explain the laboratory investigations and management of HDFN. (10)
- 3B) Explain the blood collection bags, anticoagulant preservatives, their advantages, and disadvantages. (10)
- 3C) Explain the variants of D antigen and their clinical significance. (10)
- 3D) Explain the safety measures, sterilization & disposal procedures in transfusion technology. (10)
- 4A) Explain the serologic characteristics & clinical relevance of Lewis blood group system. (5)
- 4B) Explain the therapeutic procedures of apheresis. (5)
- 4C) Explain crystalloids. (5)
- 4D) Explain the organisation and functioning of blood bank laboratory. (5)

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