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Exam Code: 1371  
Sub. Code: 46486

2125

B. Voc. (Medical Lab Technology)

Fifth Semester

BMLT-502: Introduction to Biochemical Techniques

Time allowed: 3 Hours

Max. Marks: 80

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.*

x-x-x

I. Answer the following:-

- a) What is the range of visible light.
- b) Give full name of SDS-PAGE?
- c) Mention one application of isoelectric point?
- d) Write the full name of ELISA?
- e) Used of affinity chromatography?
- f) Write the one application of Immuno-peroxidase test?
- g) Extend the TLC?
- h) Write names of two radioactive materials. (8x2)

UNIT - I

- II. a) Briefly describe basic principle of visible spectrophotometer.  
b) Write the applications of fluorescence spectrophotometer in medical sciences. (2x8)

- III. a) Mention the precautions generally take at the time of infra-red spectroscopy.  
b) Write the application of spectroscopy in structure determination of biomolecules. (2x8)

UNIT - II

- IV. a) What is basic principle of electrophoresis? Write applications of Paper electrophoresis.  
b) Write the basic principle of centrifuge. Also write its role in the diagnostics. (2x8)

- V. a) Write difference between preparative and analytical centrifugation.  
b) Briefly describe the immuno-electrophoresis. (2x8)

UNIT - III

- VI. a) Write various applications of chromatography techniques.  
b) What is the paper chromatography? Write the applications of paper chromatography. (2x8)

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- VII. a) Describe in brief about the Affinity chromatography.  
b) What is the ion-exchange chromatography? Also write its applications in biochemistry. (2x8)

UNIT - IV

- VIII. a) What do you mean by Radioactive material? Give their applications in biochemical techniques.  
b) Write a short note on ( $\gamma$ ) gama counter. (2x8)
- IX. a) What is the application of GM counters?  
b) Write in brief about the biological hazards related to radioactive. (2x8)

x-x-x

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B. Voc. (Medical Lab Technology)  
Fifth Semester  
BMLT- 503: Introduction to Immunology

Time allowed: 3 Hours

Max. Marks: 40

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.*

x-x-x

1. Answer the following:-

- ✓ (a) Define the antigens.
- (b) What is the HLA?
- ✓ (c) What are the white blood cells?
- ✓ (d) Write the two applications of RIA.
- ✓ (e) Vaccines.
- ✓ (f) Effector T Cell.
- ✓ (g) Write the names of two physical barriers?
- ✓ (h) What is the application of Well Felix reactions? (8x1)

UNIT - I

2. a) Briefly describes the passive immunity.

✓ b) Write about the inflammation and its role in immunity. (2x4)

3. a) Write a short note on cancer immunology.

b) Write about the secondary Lymphoid organ and their roles in immunity. (2x4)

UNIT - II

4. a) What is the Humoral immunity response? Write their significance.

✓ b) Briefly, describe structure of Immunoglobulin. (2x4)

5. a) What is antibodies diversity?

b) Briefly describe the Genetic Model and their applications. (2x4)

UNIT - III

6. a) Briefly describe the cell mediated immunity.

b) What are the effector T cell? (2x4)

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7. a) Describe in brief about the monoclonal antibodies and their use.

b) Write a short note on compliment system.

(2x4)

#### UNIT - IV

8. a) What do you mean by Antibody-antigen interaction?

b) Write a short note on precipitation reaction.

(2x4)

9. a) What is the Widal Test? Write its clinical significance.

b) Write a short note on western blotting used in virology.

(2x4)

x-x-x

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B. Voc. (Medical Lab. Technology)  
Fifth Semester

BMLT-504: Serology: Introduction and serological Lab Procedures

Time allowed: 3 Hours

Max. Marks: 40

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Attempt the following:-

- ✓ (a) Define the serology?
- ✓ (b) What is the CRP?
- ✓ (c) What is the LFT?
- ✓ (d) Write the two applications of RIA.
- ✓ (e) VDRL is extended for.
- ✓ (f) Write the name of serological test for syphilis.
- ✓ (g) What is the antibody?
- ✓ (h) What is the Immuno-peroxidase test?

(8x1)

UNIT - I

- II. a) Briefly describes the structure of two types of antibodies and their applications.
- b) Write about the applications of epidemiological markers in medical sciences. (2x4)
- III. ✓ a) Write the immunological test for pregnancy.
- ✓ b) Write the principle of ELISA. Write the application of ELISA in diagnostic lab. (2x4)

UNIT - II

- IV. ✓ a) What is the Widal test? Write its significance.
- ✓ b) Write about the C-reactive protein and its diagnostic role. (2x4)
- V. a) What is serological test for fungal infection in human eye?
- b) Briefly describe the serological test for Candidiasis infections. (2x4)

UNIT - III

- VI. ✓ a) Write about the major serological tests for fungal infection on human skin.
- ✓ b) What are the applications of GLC? (2x4)

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- VII. a) Describe in brief about the automations of diagnosis methods.  
b) Write a short note on HPLC. (2x4)

UNIT - IV

- VIII. a) What do you mean by CFT?  
b) Write a short note on RPHA. (2x4)
- IX. a) What is the IF? Write its clinical significance.  
b) Write a short note on serological tests used in virology. (2x4)

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Exam Code: 1371  
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2125  
B. Voc. (Medical Lab. Technology)  
Fifth Semester  
BMLT-505: Clinical Biochemistry - I

Time allowed: 3 Hours

Max. Marks: 40

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.*

x-x-x

I. Explain the following:-

- ✓ (a) Define clinical enzymology.
- ✓ (b) Why is Alanine Aminotransferase (ALT) test performed?
- ✓ (c) What is the clinical significance of creatinine estimation?
- ✓ (d) End Point Reaction
- ✓ (e) What is CPK-MB test?
- ✓ (f) What is the clinical application of transaminase estimation?
- ✓ (g) What does a lipid profile test for?
- ✓ (h) Why Endocrine function test is done? (8x1)

UNIT - I

II. Describe the General principles and different methods of histochemical demonstration of phosphatases. (8)

III. Explain the following:-

- ✓ a) Demonstration methods of dehydrogenases (4,4)
- ✓ b) Principle and demonstration method of Peroxidases.

UNIT - II

IV. ✓ a) Write the Procedure for determination of SGOT. (4,4)  
✓ b) Clinical significance of SGOT.

V. What is the Principle and Procedure to determine the Serum Glutamate Pyruvate Transaminase (SGPT)? (8)

UNIT - III

VI. Explain the different methods for the estimation of Acid Phosphatases. (8)

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- VII. a) What is the clinical application of amylase and lactic dehydrogenase estimation?  
b) What is creatine phosphokinase (cpk) test and what it measures? (4,4)

**UNIT - IV**

- VIII. Discuss in detail about Kidney function tests. (8)
- IX. a) What does a lipid profile test measure and write its significance?  
b) Briefly explain about Liver function Test (4,4)

x-x-x