Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – APRIL 2015

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – III (Revised Scheme)

Q.P. CODE: 1610

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. What is complement? Explain the properties, pathways of activation and biological effects of complement.
2. Explain the morphology, pathogenicity, laboratory diagnosis and prophylaxis of Rabies.
3. Enumerate the superficial mycosis. Explain the morphology, pathogenicity and laboratory diagnosis of dermatophytes.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Prophylaxis of Polio
5. HBsAg
6. Antigenic variation in influenza
7. Laboratory diagnosis of HIV-AIDS
8. Cryptococcosis
9. Anaphylaxis
10. Definition and mechanism of autoimmunity
11. Passive immunity
12. T lymphocytes
13. Monoclonal antibodies

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Draw a neat diagram of IgA.
15. Give four application of agglutination reaction.
16. Allograft
17. Zygomycosis
18. Germ tube test
19. Contact dermatitis
20. Molluscum contagiosum
21. Give four differences between bacterias and viruses.
22. Name four viral haemorrhagic fevers.
23. Hepatitis C virus (HCV)

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – APRIL 2015

Time: Three Hours **Max. Marks: 80 Marks**

BIO-CHEMISTRY – III (RS-2)

Q.P. CODE: 2901

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. List the various renal function tests. What is glomerular filtration rate? Write in detail Creatinine clearance test.
2. What are radioisotopes? Write their applications and hazards.
3. What are the sources, RDA, and biochemical functions of Iron? Describe in detail the absorption of Fe in the body.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Describe the process of transcription initiation and elongation.
5. Types of ELISA and their application
6. Metabolic acidosis
7. What are Isoenzymes? Explain in detail any two isoenzymes along with their importance.
8. Regulation of Calcium homeostasis
9. Theory of formation of Renal Calculi
10. Classify jaundice. Describe the biochemical findings in hepatic jaundice.
11. Functional classification of proteins

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Write the biological reference ranges for
    a) Serum sodium b) Potassium c) Chloride
13. Define Correlation coefficient and Standard deviation.
14. Mention any three parameters used for the assessment of acid/base status of blood along with their reference range.
15. Mention the biochemical defect associated with
    a) Phenyl Ketonuria b) Tetany c) Wilson's disease
16. Hypokalemia
17. What is recombinant DNA technology? Mention any two of its applications.
18. Titratable acidity
19. Homocystinuria
20. What is Genetic code? Mention two characteristics of the genetic code.
21. Functions of Gastric juice
22. Anion gap
23. Glutathione

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – APRIL 2015

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – III (RS-2)

Q.P. CODE: 2902

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define and classify immunity. Describe in detail about innate immune mechanisms of the body.
2. Enumerate the organisms causing meningitis. Describe the morphology, cultivation, pathogenicity, laboratory diagnosis of Neisseria meningitidis.
3. Enumerate the organisms causing dysentery. Describe the morphology, cultural characteristics, pathogenicity and laboratory diagnosis of Shigella species.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Define antigen. What are the factors affecting antigenicity?
5. Describe the production of monoclonal antibodies. Add a note on its uses.
6. Cytokines
7. Anaphylaxis
8. Toxin mediated diseases of Staphylococcus aureus
9. Virulence factors of Corynebacterium diphtheria
10. Laboratory diagnosis of Anthrax
11. Laboratory diagnosis of Urinary tract infections

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Memory cells
13. MALT
14. Adjuvant
15. Hemolytic autoimmune disorders
16. Classify graft based on recipient-donor relations.
17. Acute rheumatic fever
18. Bile solubility test
19. Nagler's reaction
20. Laboratory diagnosis of Actinomycosis
21. Heat liable and heat stable toxin of Escherichia coli
22. Interpretation of Widal test
23. Biological false positive

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – APRIL - 2015

Time: Three Hours **Max. Marks:80 Marks**

PATHOLOGY - III (RS-2)

Q.P. CODE: 2903

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any two) **2 x 10 = 20 Marks**

1. List the various components prepared from the whole blood. Discuss in detail the preparation, storage and uses of each of them.
2. Enumerate the types of structural abnormalities in chromosomes with examples.
3. Give a detailed account of the Bethesda system of reporting of cervical smears.

SHORT ESSAYS (Answer any six) **6 x 5 = 30 Marks**

4. Adverse transfusion reactions
5. Fixatives in cytology
6. CSF examination
7. Anatomy and histology of breast
8. Oncogenes
9. Quality control in blood bank
10. Flow cytometry
11. Hemolytic disease of the newborn

SHORT ANSWERS (Answer any ten) **10 x 3 = 30 Marks**

12. Barr body
13. Karyopyknotic index
14. Bombay blood group
15. Safety measures in laboratory
16. Components of MGG stain
17. Liquid based cytology
18. Use and care of microscopes
19. Father of modern cytology and his contribution
20. Cell block preparation
21. What is dry and wet fixation?
22. Normal histology of thyroid gland
23. Microscopic examination of sputum

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

PATHOLOGY – III (Revised Scheme)

Q.P. CODE: 1609

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. What are the methods of collection of samples for cytological studies? How do you stain a vaginal smear?
2. Write on investigations of blood transfusion reactions
3. Write briefly on the role of human genetics in diseases

SHORT ESSAYS **8 x 5 = 40 Marks**

4. Describe plasmapheresis
5. Name the different anticoagulants used in blood bank
6. How is Cryo precipitate prepared? What are its uses?
7. Write briefly on cytological examination of sputum
8. How do you prepare May Grunwald Giemsa stain? Write the procedure of staining
9. Write briefly on chemical sterilization
10. How do you categorise chromosomes by banding techniques?
11. Write on haemolytic disease of newborn

SHORT ANSWERS **10 x 2 = 20 Marks**

12. What are the different cross matching techniques?
13. What is flow cytometry?
14. Write the different radiation changes in cells
15. What are the applications of photomicroscopy in cytogenetic studies?
16. What are blood components?
17. What is sex chromosome? How do you demonstrate it?
18. What is Karyopyknotic index?
19. Name the important equipments used in blood bank
20. Write the features of benign and malignant cells
21. Cell block preparation

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – III (Revised Scheme)

Q.P. CODE: 1610

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Enumerate the fungus causing systemic mycoses. Discuss Histoplasmosis in detail.
2. Describe the morphology, antigenic structure, clinical manifestation, laboratory diagnosis of Influenza virus.
3. Define Hypersensitivity. Write in detail about Type 1 hypersensitivity.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Laboratory diagnosis of Dermatophytoses
5. Laboratory diagnosis of Candidiasis
6. Passive immunity
7. Structure and function of IgG
8. Cell mediated Hypersensitivity
9. Classification of autoimmune disorders. Give examples.
10. Viral replication
11. Pathogenesis and laboratory diagnosis of Herpes Zoster virus
12. Enumerate the Arbovirus prevalent in India. Discuss Dengue.
13. Bacteriophage

SHORT ANSWERS **10 x 2 = 20 Marks**

14. KoH preparation
15. Causative agent of Mycetoma
16. Super antigens
17. Mention two uses of monoclonal antibodies.
18. Memory cell
19. Graft-versus host reaction
20. Viral capsid
21. Diploid cell lines
22. Morphology of Adenovirus
23. Clinical manifestation of Measles

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

Biochemistry – III (RS)

Q.P. Code : 1611

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe the liver function test and their significance.
2. Define quality control. Add a note on internal and external quality control program.
3. Describe the different mechanisms to maintain the acid base balance in the body.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Creatinine clearance test.
5. ELISA.
6. Analysis of renal calculi.
7. Applications of radio isotopes.
8. Functions and deficiency of calcium.
9. What is automation? Write the advantages of automation.
10. Augmented Histamine test.
11. Enzyme markers in diagnosis of myocardial infarction.
12. Name the plasma lipoproteins. Describe their functions.
13. Functions of Iron in the body

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Enzyme deficient in Phenylketonuria and Alkaptonuria.
15. Diagnotic significance of alkaline phosphatase.
16. Normal values of blood urea and serum total cholesterol.
17. Reference range.
18. Wilson's disease
19. Metabolic alkalosis.
20. Essential fatty acids.
21. Free acidity.
22. Any two functions of copper in the body.
23. Hyponatremia.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

BIOCHEMISTRY – III (RS-2)

Q.P. CODE: 2901

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Explain the process of transcription in a prokaryotic cell.
2. Write the sources, RDA, absorption and biochemical functions of calcium.
3. Mention the different functions of liver. Explain bilirubin metabolism in detail.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Analysis of renal calculi
5. What are the important substances derived from Glycine?
6. Metabolism of iron
7. Water dilution test
8. Explain the serotonin pathway of Tryptophan.
9. Write briefly the enzymes in liver function.
10. Alkalosis
11. Applications of radioactivity

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Transamination
13. Define correlation coefficient and standard deviation.
14. Functions of gastric juice
15. Wilson's disease
16. Anion Gap
17. Write three applications of genetic engineering.
18. Define Translation.
19. Phenylketonuria
20. Normal serum levels of LDH, AST and ALT
21. Total and free acidity
22. Immunofluorescence
23. Units of radioactivity

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

MICROBIOLOGY – III (RS-2)

Q.P. CODE: 2902

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define and classify hypersensitivity. Write in detail about delayed type hypersensitivity
2. Classify Staphylococci. Describe the morphology, cultivation and pathogencitiy of Staphylococcus aureus. Give an account of its laboratory diagnosis
3. Describe the morphology, cultivation, pathogenicity and laboratory diagnosis of Mycobacterium tuberculosis. Add a note on its prophylaxis

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Phagocytosis
5. Describe the factors affecting immune response
6. Define antigens. Describe the factors which affect the antigenicity of a substance
7. Differences between T cells and B cells
8. Suppurative manifestations of Streptococcus pyogenes
9. Elek's gel precipitation test
10. Laboratory diagnosis of enteric fever
11. Clinical manifestations and laboratory diagnosis of Brucellosis

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Define congenital infections. Give two examples
13. Bursa of Fabricus
14. Antigen presenting cells
15. Describe the properties of IgE
16. Give examples of organ specific autoimmune disorders
17. Diseases caused by Klebsiella species
18. Macfadyean's reaction
19. Stormy clot reaction
20. Satellitism
21. Name three organisms which causes food poisoning
22. Name three standard tests for syphills
23. Differences between lepromatous and tuberculoid leprosy

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks:80 Marks**

PATHOLOGY - III (RS-2)

Q.P. CODE: 2903

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any two) **2 x 10 = 20 Marks**

1. What is Fine Needle Aspiration Cytology? Describe in detail the procedure of Papanicolaou stain.
2. Describe the selection criteria of a blood donor and the various screening tests done on the donor's blood.
3. Define Karyotype. Describe the procedure of Karyotyping of malignant tumors.

SHORT ESSAYS (Answer any six) **6 x 5 = 30 Marks**

4. Write a note on cytological examination of sputum.
5. Write a note on collection and preparation of pleural fluid for cytological examination.
6. Quality control in blood bank
7. Principle of immunohistochemistry
8. Write a note on Coomb's test.
9. Autologous blood transfusion
10. Flow cytometry and its applications
11. Role of cytology in screening for cervical cancer

SHORT ANSWERS (Answer any ten) **10 x 3 = 30 Marks**

12. List the indications for bone marrow aspiration.
13. Barr body
14. Bethesda nomenclature
15. Anatomy of thyroid gland
16. Enumerate the Transfusion transmitted diseases.
17. Name the methods of preservation of immortalized cell lines.
18. Methods of blood grouping
19. What is cell block? Mention its uses.
20. Normal cytology of respiratory tract
21. Cryoprecipitate
22. Name the phases of mitosis in the order of their appearance.
23. Laminar flow equipment

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (MLT) Degree Examination - SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

Biochemistry – Paper III (RS-3 Scheme)

Q.P. CODE: 3159

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAY (Any Two) **2 x 10 = 20 Marks**

1. Describe the various mechanisms of regulation of blood pH.
2. Explain the pathway of Beta oxidation of palmitic acid. Add a note on its energetic and regulation.
3. Give an account of eukaryotic DNA replication in detail.

SHORT ESSAY (Any Six) **6 x 5 = 30 Marks**

4. Westgard rules in quality control
5. Immunoglobulins
6. Ion selective electrodes
7. Nutritional importance of carbohydrates and proteins
8. Vitamin E
9. Electrophoretic patterns of plasma proteins in diagnosis
10. Enzymes in Pancreatic and Liver disorders
11. Absorption, transport and storage of Iron

SHORT ANWERS (Any Ten) **10 x 3 = 30 Marks**

12. Radio Immuno Assay
13. Explain (a) Mean (b) Standard deviation (c) Coefficient of variation.
14. Detoxification of Benzoic acid
15. Normal serum values of: (a) TSH (b) T_3 (c) T_4
16. Disorders of fructose metabolism
17. Functions of liver
18. Differences between Kwashiorkar and Marasmus
19. Normal serum values of (a) Total Bilirubin (b) Total Proteins (c) Total Cholesterol
20. Alpha fetoprotein
21. Vitamin K
22. Isoenzymes
23. Functions of chloride

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (MLT) Degree Examination - SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

Microbiology – Paper III (RS-3 Scheme)

Q.P. CODE: 3160

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAY (Any Two) **2 x 10 = 20 Marks**

1. List the antigen-antibody reactions. Describe in detail about the precipitation reaction.
2. Explain the morphology, pathogenicity, laboratory diagnosis and prophylaxis of Rabies virus.
3. Define and list Dimorphic fungi. Add a note on Histoplasmosis.

SHORT ESSAY (Any Six) **6 x 5 = 30 Marks**

4. Cultivation of viruses in embryonated egg
5. Pathogenicity and laboratory diagnosis of Candida infection
6. Type IV hypersensitivity reaction
7. Laboratory diagnosis of HIV infection
8. General properties of viruses
9. Explain in detail about Hybridoma technology. Add a note on its uses.
10. Pathogenicity and laboratory diagnosis of Varicella Zoster virus
11. Write a note on Mycotoxins.

SHORT ANWERS (Any Ten) **10 x 3 = 30 Marks**

12. KOH mount
13. Tumor antigen
14. Draw a neat labeled diagram of Human Immuno Deficiency Virus.
15. Name three auto immune diseases
16. Morphology of Aspergillus
17. Name three opportunistic mycosis.
18. Differences between Active and Passive Immunity (Any three)
19. Name three culture media used for the isolation of fungi.
20. Natural Killer cells
21. Inclusion bodies
22. Name three Arboviral infections.
23. Name three Congenital Viral infections.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (MLT) Degree Examination – SEPTEMBER 2015

Time: Three Hours **Max. Marks: 80 Marks**

Pathology – Paper III (RS-3 Scheme)

Q.P. CODE: 3161

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAY (Any Two) **2 x 10 = 20 Marks**

1. Explain in detail the anticoagulants used in blood bank, with their mechanism of action, composition and function of the components.
2. Discuss Papanicoloau's stain including principle, preparation and staining techniques.
3. Discuss the different blood collection systems with a note on donor phlebotomy.

SHORT ESSAY (Any Six) **6 x 5 = 30 Marks**

4. Coomb's test
5. Bombay blood group
6. Name the blood components. Discuss preparation, storage and uses of platelet concentrates.
7. Transfusion reaction work up
8. Liquid based fixatives
9. Sex chromatin identification
10. Anatomy and normal cytology of female genital tract
11. Cytologic criteria for malignancy

SHORT ANWERS (Any Ten) **10 x 3 = 30 Marks**

12. List three transfusion transmitted diseases.
13. List any three donor adverse reactions
14. Name any three minor blood group systems.
15. Donor selection criteria
16. Care of microscope
17. Cell block technique
18. Maturation index
19. Cytospin preparation
20. Two applications of Immunohistochemistry
21. List three advantages of FNAC.
22. CSF in tuberculous meningitis
23. List three differences between transudate and exudate.

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