# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – SEP-2016

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. Classify and enumerate functions of liver. Write briefly about liver function tests.
2. Define an acid, base, metabolic acidosis, metabolic alkalosis, respiratory acidosis and respiratory alkalosis. Explain the renal regulation of acid base balance.
3. Describe the sources, daily requirement and normal levels of phosphate. Enumerate any five functions of phosphate. Explain briefly how phosphate level is regulated.

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

4. Enumerate any three functions each of iron and calcium.
5. Write the procedure and utility of RIA.
6. Enumerate any three causes of metabolic acidosis and respiratory acidosis.
7. Enumerate any three cardiac biomarkers. Explain the chronobiogram and clinical utility of CK-MB.
8. Enumerate any six immuno assay techniques. Explain the principle of Electrochemiluminescence.
9. Explain briefly how to manually analyse renal stones.
10. Write the principle and applications of radio immuno assay.
11. Write the normal level of potassium. Write any two causes of Hypokalemia and Hyperkalemia.

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

12. Enumerate the post transcriptional modifications.
13. Enumerate the post translational modifications.
14. What is standard deviation? Explain with suitable example.
15. Enumerate different forms and location of LDH.
16. Enumerate the diagnostically important enzymes in pancreatic disease.
17. Enumerate any six Westgard rules.
18. Enumerate the biologically important products synthesized from Glycine.
19. Define and write the normal levels of anion gap.
20. What is the enzyme defect seen in Galactosemia and essential fructosuria.
21. Define jaundice. Write the normal value of total, conjugated and unconjugate bilirubin.
22. Write different types of Vanden Bergh reaction and its utility.
23. Principle of ELISA

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# Rajiv Gandhi University of Health Sciences, Karnataka

## III year B.Sc. (M.L.T) Degree Examination – SEP 2016

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. Write in detail about Major histocompatibility Complex. Add a note on HLA typing
2. Enumerate the organisms causing gas gangrene. Give a detailed account of the pathogenic mechanism and laboratory diagnosis of gas gangrene.
3. Enumerate the sexually transmitted bacterial infections. Describe the morphology, pathogenesis and laboratory diagnosis of infection caused by Treponema pallidum

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

4. Natural acquired passive immunity
5. IgA
6. Delayed hypersensitivity
7. B cells
8. Laboratory diagnosis of Meningococcal meningitis
9. Satellitism
10. Laboratory diagnosis of leprosy
11. DNA hybridization

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

12. Define and give examples of heterophile antigens
13. Antibody titre
14. Plasma cells
15. Atopy
16. Name three immune complex diseases
17. Name three air borne disease
18. Wool sorter's disease
19. Anti-tetanus serum
20. Cholera toxin
21. BCG vaccine
22. Q fever
23. Give a brief account of Helicobacter pylori

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# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – SEP-2016

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 are the methods of collection of samples for cytological examination? Describe in detail all the steps in preparation and staining of a vaginal smear.
2. Describe criteria for ideal blood bank. Add note on blood bank organization.
3. What is ideogram? Explain the method of Karyotype analysis of Human chromosomes.

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

4. Describe briefly ABO and Rh typing.
5. Preparation of monoclonal antibody
6. Demonstration of Barr body in buccal smears
7. Describe cytology of effusions in malignant and non-malignant conditions.
8. Cross-matching techniques
9. Cytological screening programme for cervical cancer
10. Discuss various cytological fixatives.
11. Describe the procedure of Fine Needle Aspiration. Mention the uses of Fine Needle Aspiration Cytology.

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

12. Screening for Australia antigen
13. Normal cytology of urine sediment
14. Enumerate blood group systems.
15. Cytology of Cerebrospinal fluid
16. Transfusion transmitted diseases
17. Write briefly about the nomenclature of the human chromosomes.
18. Triploidy
19. Preparation of cell block
20. Fresh frozen plasma
21. Maturation index
22. Preparation and uses of bone marrow imprint smears
23. Chromosomes in neoplasia

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# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – MAY 2016

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. Define isoenzyme. Define any two units of enzyme activity. Explain the diagnostic importance of enzymes in pancreatic and bone disease.
2. Classify plasma proteins. Write the procedure and neatly labelled diagram of electrophoresis separation of serum proteins.
3. Describe the sources, daily requirement and normal levels of calcium. Enumerate any five functions of calcium. Explain briefly how calcium level is regulated.

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

4. Enumerate the functions of liver.
5. Write the procedure and utility of ELISA.
6. Explain the regulation of acid base balance.
7. Enumerate any three cardiac biomarkers. Explain the chronobiogram and clinical utility of cardiac troponin.
8. Classify the liver function test with examples.
9. Explain briefly how to manually analyse renal stones.
10. Write the principle and applications of radio immuno assay.
11. Write the normal level of sodium. Write any two causes of hyponatremia and hypernatremia.

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

12. Enumerate the inhibitors of transcription and translation.
13. Enumerate any one cause each of Hyperkalemia and Hypokalemia.
14. What is coefficient of variation? Explain with suitable example.
15. Enumerate different forms and location of creatinine kinase.
16. Enumerate the diagnostically important enzyme in liver disease.
17. Write LJ chart with a suitable example.
18. Enumerate the enzymes used to diagnose pancreatitis and write their normal values.
19. Define and write the normal levels of anion gap.
20. What is the utility of PCR?
21. What are the causes of congenital jaundice?
22. Enumerate the steps of DNA replication.
23. Enumerate the steps of protein synthesis.

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# Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – MAY 2016

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. Describe the structure of Immunoglobulin in detail. Add a note on the functions of each class of Immunoglobulins.
2. Describe the morphology, cultivation, pathogenicity and laboratory diagnosis of Clostridium tetani. Add a note on its prophylaxis.
3. Describe the morphology, cultivation, pathogenicity and laboratory diagnosis of Vibrio cholerae.

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

4. T cells development and functions
5. Type 2 hypersensitivity
6. Mechanism of Autoimmune disorders
7. Methicillin resistant Staphylococcus aureus
8. Laboratory diagnosis of Pneumococcal infections
9. Food poisoning caused by Clostridium perfringens
10. Clinical manifestation of Gonorrhoea
11. Non serological methods for the diagnosis of enteric fever

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

12. Hapten
13. Immune sera
14. Enumerate the factors affecting immune response.
15. Give any three examples autoimmune disorders.
16. Atopy
17. CAMP test
18. Anti-diphtheritic serum
19. MacFadyean's reaction
20. Hemorrhagic E.coli
21. Weil and Felix test
22. Bubonic plague
23. FTA test

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# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – MAY 2016

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. Describe the normal cytology of female genital tract. Add a note on the Bethesda system.
2. Describe the methods of compatibility testing.
3. What are the different techniques used in cytogenetics? Mention the advantages and limitations of each of them.

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

4. Anticoagulants used in blood bank
5. Criteria for donor selection
6. Fine Needle Aspiration Cytology
7. Anatomy, histology and normal cytology of salivary gland
8. Chromosomal aberrations in cancer
9. Quality control in blood bank
10. Processing of body fluids
11. PAP technique of immunohistochemistry

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

12. Define genetic counselling.
13. Maturation index
14. Changes occurring in stored blood components
15. Safety measures in laboratory
16. Gross examination of CSF
17. How do you demonstrate sex chromatin?
18. Rh blood group
19. Preparation of Giemsa stain
20. Subculturing of cell line
21. Autologous blood transfusion
22. Constituents of Pap stain
23. List the transfusion transmitted diseases.

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