Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – April 2014

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. Classify fixatives and write on cytological fixatives
2. Name different components in blood transfusion with clinical application
3. Describe cytology of various types of bronchogenic carcinoma

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

4. Anatomy and histology of salivary glands
5. Describe the functions of normal cell organells
6. May Grunwald Giemsa staining method
7. Plating of cells in tissue culture media
8. Describe collection and preparation of samples from urinary tract
9. Complications of blood transfusion
10. Chromosomal observations in cancer
11. Characteristics of dysplastic cells

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

12. Indications for indirect coomb's test
13. Maturation index
14. Ether Alcohol preparation
15. Instruments for tissue culture
16. Preparation of EA65
17. Karyopyknotic index
18. Preparation of Toluidin blue
19. 'O' blood group
20. Regressive staining
21. Morphology of intermediate vaginal cells

Rajiv Gandhi University of Health Sciences, Karnataka

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III Year B.Sc. (M.L.T) Degree Examination – April 2014

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. Classify dermatophytes. Describe laboratory diagnosis in detail.
2. Define and classify immunity. Describe in detail innate immunity.
3. Classify herpes viruses. Describe herpes simplex viruses – types, infections and laboratory diagnosis.

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

4. Hypersensitivity type – I
5. Viral replication
6. Measles virus
7. Dengue virus
8. Immunoglobulin M
9. Laboratory diagnosis of Cryptococcal Meningitis
10. Actinomycetes
11. Precipitation reactions – definition and types
12. Sporotrichosis
13. Monoclonal antibody

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

14. Germ tube test
15 KOH examination
16. SDA
17. Immunofluorescence
18. Conidia
19. Bacteriophage
20. Define antigen.
21. Allograft
22. Phagocytosis
23. Latex agglutination test

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – April 2014

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. Enumerate the physiological functions of calcium. Describe its absorption and add a note on factors influencing the absorption of calcium.
2. Explain in detail the metabolism of phenyl alanine. Add a note on tyrosinemia
3. Classify Jaundice and explain the biochemical changes for the differential diagnosis of each class. Add a note on van den Bergh reaction.

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

4. Collection and transport of specimen for arterial blood gas analysis.
5. Laboratory analysis of Renal Calculi.
6. Explain the Creatinine clearance test.
7. Discuss the working of semi automated analyzer and fully automated analyzer.
8. Lipoproteins-classification and clinical significance.
9. Explain the principle of Radio-Immuno-Assay. Add a note on advantages of RIA.
10. Mechanism of gastric HCI secretion.
11. Clinical utility of Creatine Kinase-Total and MB fraction.
12. Renal mechanism in regulating blood pH.
13. Explain Levey Jennings Control Chart.

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

14. Principle of ELISA test.
15. Define the term "Reference Interval". Give the biological reference interval of
    a) FBS b) Glycated HbAlc
16. Define transcription and translation of protein
17. Principle of AST and ALT estimation.
18. Hyperkalemia
19. Clinical utility of pancreatic amylase and lipase
20. Iron storage disorder
21. Wilson's disease
22. Antidiuretic hormone (ADH)
23. Gaussian distribution.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – April 2014

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. Discuss alpha, and gamma type of radiation with suitable examples. Give a detailed account of applications of radioactivity in the diagnostic field.
2. Give a detailed account of two main reactions by which ammonia is produced in the body. Give the normal levels for ammonia in blood. Why is ammonia toxic?
3. Describe the sources and daily requirement of iron. Explain the factors influencing absorption of iron. Give a detailed account of iron toxicity.

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

4. Describe the functions of renal tubules. What is renal threshold and tubular maximum? Give the threshold value for glucose and calcium.
5. Explain the mechanism of HCL secretion by gastric cells. How is it regulated?
6. Explain the rennin-angiotensin system of water balance.
7. What is a cardiac biomarker? Explain the Clinical utility of Creatine Kinase- Total and MB fraction.
8. What is PCR? Give its clinical applications.
9. What are the chemical constituents of renal stone. Explain the preanalytical steps employed in the laboratory. Give the procedure for any two constituents by manual method..
10. Discuss the principle of Radio-Immuno-Assay. Explain the procedure with a suitable example.
11. What is the normal serum potassium level in the body? Explain the causes of hyperkalemia.

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

12. Inhibitors of protein synthesis
13. Tubeless gastric analysis
14. What is correlation coefficient? Explain positive and negative correlation coefficients with a suitable example.
15. What are Cardiac troponins?
16. Discuss the important hepatic enzyme.
17. Gaussian distribution
18. Explain the role of glycine as a conjugating agent.
19. Anion gap
20. FIGLU excretion test
21. Explain the biochemical defect and manifestations of 1. Criggler Najjar syndrome and Dubin Johnson syndrome.
22. Discuss the metabolic defect and manifestations of Wilson's disease.
23. Important compounds derived from Tyrosine.

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – April 2014

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 Acquired immunity.
2. Enumerate the organisms causing Sexually Transmitted Diseases. Discuss the pathogenicity and laboratory diagnosis of Syphilis
3. Classify Vibrios. Describe the Pathogenicity and laboratory diagnosis of Cholera

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

4. Auto immunity
5. Monoclonal Antibodies
6. Type IV Hyper sensitivity
7. Pathogenicity and laboratory diagnosis of Gas gangrene
8. Widal test
9. Urinary Tract Infection
10. MRSA
11. Pathogenicity and laboratory diagnosis of Diphtheria

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

12. Define complement. List 2 differences between classical and alternate pathway of 'C'
13. Define Toxoid with 2 examples
14. RA factor
15. Co-agglutination test
16. Structure of IgE
17. Satellitism
18. Define Zoonoses with 2 examples
19. Nagler's reaction
20. RNTCP and DOTS
21. Urease test and 2 positive examples
22. Presumptive Coliform Count
23. Gardenerella Vaginalis

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – April 2014

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. Name the transfusion transmitted diseases. Explain the screening of blood for infective materials.
2. What is Idiogram? Explain the method of Karyotype analysis of Human Chromosome.
3. Describe the anatomy and histology of female genital tract. Explain the techniques of collection of specimen of cervical cytology study. Discuss the papaniculoua staining method.

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

4. HLA antigens and their significance
5. Autologus blood transfusion
6. Flow cytometry and its applications
7. Write the cytology of CSF in inflammatory, non malignant and malignant conditions
8. Write the uses of Fine needle aspiration cytology
9. Discuss different cytological fixatives
10. May Grunwald Geimsa Stain
11. Quality Control in Blood Bank

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

12. G-Banding
13. Bombay blood group
14. Use and care of Microscope
15. Laminar flow equipment
16. Barr body
17. Preparation of cell block and its uses
18. Hybridoma technology
19. Fresh frozen plasma
20. What are the immunological properties of a cell?
21. What are the responsibilities of cytotechnologists?
22. Normal cytology of respiratory tract
23. Principle of Immunocytochemistry

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – September 2014

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. Write in detail about blood bank administration
2. Write about characterization of human chromosomes by various banding techniques
3. Describe method of collection of material from respiratory tract and urinary tract

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

4. Anatomy and histology of thyroid gland
5. Cervical displasias
6. Laminar air flow
7. Autoclaving
8. Chromosomal DNA content of the cell
9. Selection criteria of blood donors
10. FFP
11. Coomb's test

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

12. Rh system
13. HLA antigen
14. Platelet separation
15. Write two materials taken for culture in karyotype analysis
16. FNAC findings of malignancy of breast
17. Preparation of fluid for cytological examination
18. Name phases of cell cycle
19. Normal histology of gastrointestinal tract
20. Cytology of bronchogenic carcinoma
21. Preservation of blood in blood bank

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – September 2014

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. Define dimorphic fungi. Name them. Add a note on Histoplasmosis.
2. Define and classify hypersensitivity. Describe type I in detail.
3. Write in detail morphology, pathogenesis, clinical features and diagnosis of influenza virus.

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

4. Polio vaccines
5. Chick embryo and its use
6. Classify fungi based on morphology and sporulation with examples.
7. Chikungunya virus
8. Eumycotic Mycetoma
9. Rabies – post exposure prophylaxis
10. Clinical manifestations of Herpes viruses
11. Tube agglutination tests
12. Complement
13. Standard precautions

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

14. Paul Bunnel test
15 LPCB mount
16. Reynold Braude phenomenon
17. Define adjuvant. Give two examples.
18. Interferons
19. Natural passive immunity
20. Graft versus Host disease
21. India Ink stain
22. Hair penetration test
23. Slide culture

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – September 2014

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. Define automation. Describe continuous flow analysis and discrete analysis. Explain in brief the working of automated analyzer citing an example.
2. What are ketone bodies? Describe their synthesis and utilization. Add a note on regulation of ketogenesis.
3. Classify Jaundice and explain the biochemical changes for the differential diagnosis of each class. Add a note on van den Bergh reaction.

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

4. Composition of gastric juice. Add a note on Pentagastrin stimulation test.
5. Laboratory analysis of Renal Calculi.
6. Explain the ammonium chloride loading test employed to assess renal tubular function.
7. Define a) Standard Deviation. b) Coefficient of variation. Give the formula for calculating the same.
8. Biochemical functions of Copper.
9. Role of blood buffers in maintaining blood pH.
10. Explain the principle of Radio-Immuno-Assay. Add a note on the diagnostic use of the technique.
11. What are essential fatty acids? Discuss the functions and deficiency of essential fatty acids.
12. What are the biochemical functions of Iron? Add a note on iron transport in the plasma.
13. Clinical utility of LDH and its isoenzymes.

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

14. Principle of ELISA test.
15 Significance of Creatinine clearance test.
16. Levey Jennings control chart.
17. Clinical utility of pancreatic amylase and lipase.
18. Hyponatremia
19. Microalbuminuria
20. Define the term "Reference Interval". Give the biological reference interval of
    a) Serum Potassium b) FBS
21. Usefulness of Nomograms in clinical laboratory.
22. Define accuracy and precision.
23. Gaussian distribution.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – September 2014

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. Discuss the metabolic fate of Tyrosine. Discuss in detail the biochemical abnormality with clinical manifestations, spot urine test and treatment of Phenyl ketonuria.
2. Discuss alpha, and gamma type of radiation with suitable examples. Give a detailed account of applications of radioactivity in the diagnostic field.
3. Give the RDA and sources of iron. Explain its absorption and transport. Add a note on the factors affecting the absorption of iron.

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

4. Define Osmolality. List out the osmotically active compounds in plasma. Give the formula for calculation of Plasma osmolality.
5. Discuss a) Augmented histamine test b) Tubeless gastric analysis.
6. Explain the principle of ELISA. Explain the procedure with a suitable example.
7. List out the important compounds formed from Glycine. Explain the formation and functions of any two of them.
8. What are the chemical constituents of gallstone? Explain the preanalytical steps employed in the laboratory. Give the procedure for any two constituents by manual method.
9. Respiratory acidosis and compensation
10. What is recombinant technology? Discuss its applications.
11. What is the normal serum sodium level in the body? Explain the causes of hyponatremia.

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

12. Salient features of genetic code.
13. What are Cardiac troponins. Clinical utility of its serial estimation
14. Formula for calculating 1. Mean 2. Standard deviation. 3. CV%
15. Explain the biochemical defect and manifestations of 1. Criggler Najjar syndrome and Dubin Johnson syndrome.
16. Clinical utility of Creatine Kinase- Total and MB fraction
17. Preanalytical steps in estimation and biological reference intervals for
    1. Urine creatinine 2. Urine proteins
18. Gaussian distribution
19. Explain the role of ALT and GGT as liver function test
20. Anion gap
21. FIGLU excretion test
22. Principle and procedure of analysis of three abnormal constituents in urine
23. Functions of calcium

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2014

Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. (M.L.T) Degree Examination – September 2014

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. What is innate immunity? Discuss its mechanism. Briefly describe the cells involved in innate immunity.
2. Define autoimmunity. Describe the mechanism of autoimmunity and classify autoimmune diseases.
3. Enumerate the bacteria causing sore throat. Describe the morphology, cultural characteristics and pathogenicity of Corynebacterium diphtheria. Add a note on laboratory diagnosis of diphtheria.

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

4. Artificial acquired passive immunity
5. Properties of an antigen
6. Type I hypersensitivity
7. Non-suppurative complications of Streptococcus pyogenes
8. Laboratory diagnosis of tetanus
9. Enteropathogenic Escherichia coli
10. Atypical Mycobacteria
11. Bacteriological examination of water.

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

12. Diagrammatic representation of IgG
13. Opsonisation
14. Antibody titre
15. Serum sickness
16. Interleukin-II
17. Gut associated lymphoid tissue
18. Bile solubility test
19. Clinical manifestations and laboratory diagnosis of Bacillus cereus
20. Enumerate the antigens of Salmonella typhi
21. Name any three bacterial zoonotic diseases
22. Biological false positive reactions.
23. Relapsing fever

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2014

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (M.L.T) Degree Examination – September 2014

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?
2. Characterization of human chromosome by various banding techniques
3. Blood bank organization

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

4. Fixatives for cytology
5. Anatomy and histology of respiratory tract
6. Difference between normal and malignant cell
7. Maturation index
8. May Grunwald Giemsa (MGG) stain
9. Oncogenes
10. F F P
11. Methods of bleeding in blood bank

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

12. Radiation changes in cell
13. Normal cell structure
14. What is cell block?
15. Name cytological indices
16. What is FNAC?
17. Name blood components
18. Autologous transfusion
19. Specimens received from respiratory tract.
20. Crossmatching
21. Infections transmitted by blood transfusion
22. Inverted microscope
23. What are biochemical markers in cells?

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