Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination – September 2014

Time: Three Hours | Max. Marks: 80 Marks

PHYSIOLOGY – RS-2

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1227

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 steps in the synthesis of Thyroid hormones. Explain the regulation of its synthesis. Name the clinical condition due to its decreased secretion in child hood.
2. Describe both the touch pathways from its origin to its termination with the help of a line diagram. What type of touch information does each conduct?
3. Describe the stages of Erythropoiesis with help of a diagram. Describe the regulation of erythropoiesis.

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

4. Describe neuromuscular junction.
5. Write the functions of saliva.
6. Draw and label a diagram of Juxta Glomerular Apparatus. Describe its role in renal functions.
7. Describe regulation of blood pressure.
8. List and describe the different modes of carbon dioxide transport in the body. Explain Haldane's effect with help of a diagram.
9. What is venous return? What factors influence venous return? Explain in detail any one factor that aids venous return.
10. Explain the consequences of mismatched blood transfusion.
11. What are chylomicrons? Where are they produced? Describe the process of fat absorption in intestine.

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

12. Anticoagulants used in vivo and vitro.
13. List types of cells in the stomach. Mention the secretion and function of each.
14. Tests for ovulation
15. Chvostek's and Trousseau's Signs
16. Functions of testosterone
17. Define polycythemia. What are the types?
18. List the features of acromegaly.
19. List the actions of bile salts.
20. Name the contractile proteins.
21. Timed vital capacity
22. Draw a diagram of the sarcotubular system in the skeletal muscle.
23. Abnormal constituents of urine

Rajiv Gandhi University of Health Sciences, Karnataka

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I Year B.Sc. (Allied Health Sciences) Degree Examination – April 2014

Time: Three Hours | Max. Marks: 80 Marks

PHYSIOLOGY – RS-2

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1227

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. Trace the dorsal column pathway with the help of a diagram. Mention the sensations carried by dorsal column.
2. What is the normal serum calcium level? Describe the Hormonal regulation of serum calcium levels. What are the clinical features of tetany?
3. Classify white blood cells. Describe their morphological features with diagrams and list their functions.

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

4. Explain the physiological actions of Estrogen.
5. Describe the formation of urine.
6. What is Addison's disease? List the clinical features of Addison's disease.
7. Name the plasma proteins. List their functions. Describe the function of any one in detail.
8. Describe the clinical features of hemisection of spinal cord, with the help of a diagram.
9. Define compliance of lungs, giving its normal value. What is the function of surfactant?
10. What are the common errors of refraction and how are they corrected?
11. Explain the term glomerulotubular balance and tubuloglomerular feedback.

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

12. List the functions of hypothalamus.
13. What is Surfactant? Write about the composition and its clinical importance.
14. Name four hormones secreted by the gastro intestinal tract.
15. Give definition and mention the types of dead space.
16. Write the functions of cerebellum.
17. Name three commonly used anti coagulants.
18. List the functions of middle ear.
19. What is referred pain? Explain with an example.
20. List the family planning methods.
21. What is rigor mortis?
22. List the differences between isotonic and isometric contractions.
23. Name the types of immunoglobulins. Mention their functions.

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination – April 2014

Time: Three Hours Max. Marks: 80 Marks

BIOCHEMISTRY (RS-2)

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1228

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 principle and parts of colorimeter with the help of a diagram.
2. List-out various fluid buffers in the body. Explain any one buffer system involved in the regulation of blood pH.
3. Explain the principle of centrifugation and discuss different types of centrifuges. Add a note on the maintenance of centrifuge.

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

4. pH meter and its applications
5. Henderson-Hasselbalch equation
6. Different types of measuring flasks and its uses
7. Analytical balance and its care and maintenance
8. Cleaning agents for glass ware
9. Metabolic acidosis
10. What are indicators? Give two examples and its use.
11. Define valency and molecular weight of compounds. Give two examples each.

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

12. What is normal saline? How do you prepare?
13. What is an acid and a base? Give two examples each.
14. Mention the normal pH of blood, pCO_2, pO_2.
15. Difference between stock and working solutions
16. How do you prepare 2 molar Sodium Hydroxide solution?
17. What are SI units? List three analytes with SI units.
18. Uses of Hot-air oven and Incubator
19. Different types of pipettes
20. Difference between Molarity and Molality
21. What are the precautions you take while handling acids and measuring it?
22. Uses of Dessicator
23. Explain the serial dilution of a body fluid.

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination - September 2014

Time: Three Hours Max. Marks: 80 Marks

BIOCHEMISTRY (RS-2)

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Anesthesia Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1228

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. Define (a) Gram Atomic Weight, (b) Gram Equivalent Weight, (c) Molarity, (d) Molality and (e) Normality. Explain how to prepare 0.1 N H_2SO_4. (Molecular Weight of H_2SO_4 – 98; Specific Gravity of H_2SO_4 - 1.9; Percentage Purity of H_2SO_4 – 98)
2. What is Beer Lambert's Law? Enumerate any two limitations of Beer Lambert's Law. Explain the instrumentation of Spectrophotometer with the help of a neat labelled diagram. Enumerate any four differences between a Colorimeter and a Spectrophotometer.
3. Write the sources, RDA, functions, chemistry and deficiency manifestations of Vitamin A.

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

4. Explain briefly the use, care and maintenance of Laboratory Glassware.
5. Explain briefly the use, care and maintenance of Laboratory Balance.
6. Explain the Dalton's theory of Atomic Structure. What are the drawbacks of Dalton's theory?
7. What is (a) Stock Standard (b) Working Standard (c) Percent Solution?
8. What are the uses of Reflux Condenser? Explain the care and maintenance of Reflux Condenser.
9. What are the different types of Urine Collection? Enumerate any four Urine Preservatives.
10. Define BMR. Enumerate any four factors affecting BMR. What is the normal value of BMR?
11. Enumerate different types of pipettes and write its uses.

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

12. What is a Dessicator? What are its uses?
13. Enumerate any three parameters measured in Arterial Blood Gas Analyser.
14. Write Henderson Hasselbalch Equation.
15. What are the different types of Flasks used in laboratory
16. Enumerate any three SI Units with examples.
17. Enumerate deficiency manifestations of (a) Thiamine (b) Niacin (c) Vitamin C.
18. What is the Chemical name of (a) Vitamin K (b) Vitamin B12 (c) Vitamin D?
19. Draw a neat labelled diagram of Normal Serum Protein Electrophoresis pattern.
20. What is (a) Metabolic Acidosis (b) Metabolic Alkalosis (c) Respiratory Alkalosis?
21. What is Accuracy? How do you measure Accuracy in a Clinical Lab?
22. What is Precision? How do you measure Precision in a Clinical Lab?
23. Enumerate any three Nutritional importances of Lipids.

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination - September 2014

Time: Three Hours | Max. Marks: 80 Marks

PATHOLOGY (RS-2)

(Clinical Pathology & Heamatology & Blood Banking)

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1229

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. Define fixation and classify fixatives? Add a note on preparation and uses of routine formalin fixative.
2. Explain in detail microscopic examination of feces.
3. Describe CSF analysis.

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

4. Embedding techniques
5. Tests to detect completion of decalcification
6. Physical examination of urine
7. Azoospermia
8. Bence-Jones protein
9. Name the various anticoagulants used in hematology.
10. Describe procedure and interpretation of crossmatching.
11. Normal constituents of blood and their functions

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

12. How do your prepare eosin stain?
13. Name the important parts of microscope.
14. Name the microtome knives.
15. Causes of lymphocytic pleural effusion
16. Blood grouping and Rh typing
17. What is PCV? Name the instrument and anticoagulant used to detect PCV.
18. Casts in urine
19. Indication of semen analysis
20. Name two micro-anatomical fixatives.
21. Anuria.
22. Methods of collection of blood samples in hematology
23. Name the uses of formaldehyde.

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination - April-2014

Time: Three Hours | Max. Marks: 80 Marks

PATHOLOGY (RS-2)

(Clinical Pathology & Heamatology & Blood Banking)

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1229

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 the steps of H & E staining and their interpretation.
2. Explain in detail the chemical examination of urine.
3. Write about various tests done in case of prolonged bleeding time.

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

4. Receiving of specimens in the laboratory
5. Types of fixatives
6. Hand sharpening of microtome knives
7. Semen analysis
8. Specific gravity of urine
9. Hemoglobin estimation
10. Blood grouping & Rh typing
11. Describe in detail the collection of blood samples.

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

12. Activated partial thromboplastin time
13. Crystals in urine
14. Decalcifying fluids
15. Fixatives used for electron microscopy.
16. Honning and sharpening
17. Cobweb coagulum
18. Blueing
19. Types of mountants
20. Oligospermia
21. Fouchet's test
22. Major crossmatching.
23. Tests for glucose in urine

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination - April 2014

Time: Three Hours | Max. Marks: 80 Marks

MICROBIOLOGY (RS-2)

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1230

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. Draw a neat labelled diagram of bacterial cell. Write briefly about bacterial flagella.
2. Describe the morphology, cultural characteristics and laboratory diagnosis of Vibrio cholerae
3. Discuss the life cycle and laboratory diagnosis of malarial parasite

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

4. Widal test
5. Anaerobic media
6. Laboratory diagnosis of opportunistic fungal infections
7. Laboratory diagnosis of HIV infection
8. Autoclave
9. Gram's staining
10. Hydatid cyst
11. VDRL test

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

12. IMViC reactions
13. Prevention of hospital acquired infections
14. Transport media
15. Hepatitis B vaccine
16. Pneumococci
17. MRSA (Methicillin Resistant S. aureus)
18. Fumigation
19. Egg of round worm
20. Bacterial capsule
21. Skin antiseptics
22. Bacterial filters
23. Enumerate antigen-antibody reactions

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Allied Health Sciences) Degree Examination - September 2014

Time: Three Hours Max. Marks: 80 Marks

MICROBIOLOGY (RS-2)

(MLT, O.T. Technology, Cardiac Care Technology, Perfusion Technology, Neuro Sciences Technology, Renal Dialysis Technology, Respiratory Care Technology, Medical Imaging Technology & Radiotherapy Technology)

Q.P. CODE: 1230

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. Define and classify Sterilization. Discuss about autoclave.
2. Describe the Morphology of Vibrio cholerae and Laboratory diagnosis of cholera
3. Discuss the laboratory diagnosis of typhoid fever.

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

4. Enriched media
5. Mantoux test
6. VDRL test
7. Laboratory diagnosis of malaria
8. Nosocomial infection
9. Prophylaxis of rabies
10. Bacterial spore
11. Manifestations caused by Candida albicans

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

12. Name any three bacterial vaccines
13. Name three methods of cultivation of viruses.
14. Name three antigen antibody reactions
15. Classify Dermatophytes.
16. Name three gaseous disinfectants.
17. Name three opportunistic fungal infections.
18. Name two Ova seen in a stool sample
19. Name the different Shigella species
20. Polio vaccine
21. Name three diseases caused by Streptococcus pyogenes.
22. Name two sexually transmitted diseases
23. Draw a labelled diagram of Entamoeba histolytica trophozoite.

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Allied Health Sciences Degree Examination – September 2014

Time: Three Hours Max. Marks: 80 Marks

BASIC ANATOMY (INCLUDING HISTOLOGY)

(RS3 – Medical Laboratory Technology, Medical Imaging Technology and Radiotherapy Technology RS2 – Operation Theatre Technology, Cardiac Care Technology, Perfusion Technology, Renal Dialysis Technology, Respiratory Care Technology, Anaesthesia Technology and Neurosciences Technology)

Q.P. CODE: 3151

(QP contains two pages)

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

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

1. Name the parts of respiratory system and explain the medial surface of right lung.
2. Name the parts of digestive system and explain second part of duodenum.
3. Classify joints with examples.
4. Name the parts of male reproductive system. Add a note on gross anatomy of testis
5. Describe the position, external features, and arterial supply of Heart.
6. Describe boundaries and contents of Cubital fossa
7. Describe Uterus under the following headings – parts, position and ligaments
8. Name the parts of excretory system and draw the structure of nephron
9. Describe the stages and effects of fertilization.
10. Describe the sulci and gyri on the supero-medial surface of the cerebrum.

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

11. Distinguish between right and left kidney.
12. Spermatogenesis
13. Draw a neat, labeled diagram of histology of hyaline cartilage.
14. Draw a neat, labeled diagram of histology of thymus.
15. Intercostal space – boundaries and contents
16. Great saphenous vein – formation, termination and tributaries
17. Stomach – blood supply and lymphatic drainage
18. Ureter – parts and constrictions
19. Pancreas – parts and hormones secreted
20. Position of appendix
21. Deltoid muscle
22. Constrictions of Oesophagus

Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Allied Health Sciences Degree Examination – September 2014

Time: Three Hours Max. Marks: 80 Marks

PHYSIOLOGY

(RS3 – Medical Laboratory Technology, Medical Imaging Technology and Radiotherapy Technology RS2 – Operation Theatre Technology, Cardiac Care Technology, Perfusion Technology, Renal Dialysis Technology, Respiratory Care Technology, Anaesthesia Technology and Neurosciences Technology)

Q.P. CODE: 3152

(QP contains two pages)

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

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

1. Describe the course of pyramidal tract.
2. Conducting system of the heart
3. Functions of hypothalamus
4. Draw the structure of retina and lable it
5. Describe the molecular basis of skeletal muscle contraction.
6. Describe the chemical regulation of respiration.
7. Referred pain
8. Actions of thyroid hormone
9. Describe the mechanism of hearing
10. Explain the stages of Erythropoiesis.

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

11. Briefly describe stages of deglutition
12. Neuro-endocrine reflex
13. Ionic basis of action potential of a neuron
14. What is normal ESR? What is its clinical importance?
15. Explain the term “Wallerian Degeneration”.
16. What is humoral immunity?
17. List the signs of Lower Motor Neuron lesion.
18. Two contraceptive methods in females
19. Movements of small intestine
20. Write a short note on ABO blood group system.
21. Describe any two types of hypoxia.
22. Functions of Juxta-glomerular apparatus

Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Allied Health Sciences Degree Examination – September 2014

Time: Three Hours Max. Marks: 80 Marks

BIOCHEMISTRY

(RS3 – Medical Laboratory Technology, Medical Imaging Technology and Radiotherapy Technology RS2 – Operation Theatre Technology, Cardiac Care Technology, Perfusion Technology, Renal Dialysis Technology, Respiratory Care Technology, Anaesthesia Technology and Neurosciences Technology)

Q.P. CODE: 3153

(QP contains two pages)

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

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

1. Water distillation apparatus – components, working and use
2. Different types of pipettes and their uses
3. Safety regulations and measures to be followed in a laboratory
4. Write the principle, components and types of Centrifuges.
5. Write the principle and components of pH meter.
6. Care, cleaning and maintenance of different glass wares used in a laboratory
7. Define SI units and classify them.
8. Define buffers with examples. How do you determine the pH of a buffer using Henderson-Hasselbalch equation?
9. Write the principle, parts and draw the diagram of Colorimeter.
10. Define and classify salts with example.

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

11. Define indicators. Write two commonly used indicators with their pH range.
12. Electronic balance – diagram, and procedure for weighing
13. Significance of Borosilicate glass
14. Burettes - types and uses
15. Define (a) Normality, (b) Molarity, (c) Molality with one example for each.
16. Define (a) Test tube (b) Dessicator (c) Bunsen burner
17. Use and care of Water bath
18. Hot air oven
19. How do you prepare stock standard solution of glucose?
20. Limitations of Beer Lambert's law
21. Preparation of working standard from stock standard solution
22. Explain Bicarbonate buffer system.

Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Allied Health Sciences Degree Examination – September 2014

Time: Three Hours Max. Marks: 80 Marks

PATHOLOGY

(RS3 – Medical Laboratory Technology, Medical Imaging Technology and Radiotherapy Technology RS2 – Operation Theatre Technology, Cardiac Care Technology, Perfusion Technology, Renal Dialysis Technology, Respiratory Care Technology, Anaesthesia Technology and Neurosciences Technology)

Q.P. CODE: 3154

(QP contains two pages)

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

SHORT ESSAYS (ATTEMPT ANY EIGHT) 8 x 5 = 40 Marks

1. Mention different kinds of microscopes used in lab. Describe about light microscope.
2. Packed cell volume
3. Alcoholic fixatives
4. Blood transfusion reactions
5. Sahli's method of hemoglobin estimation
6. Safety in the laboratory
7. Sputum examination
8. Compatibility testing
9. Discuss various methods of urine collection.
10. H & E staining

SHORT ANSWERS (ATTEMPT ANY TEN) 10 x 3 = 30 Marks

11. APTT
12. Mounting medias
13. Rhesus blood group system
14. Physical examination of urine
15. Impregnation
16. Benedict's test
17. Urinary casts
18. Describe the method of collection of CSF.
19. Describe in brief about slide filing and tissue filing.
20. Complications of Venepuncture
21. Rotatory microtome
22. Describe the structure and function of RBC.

Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Allied Health Sciences Degree Examination – September 2014

Time: Three Hours Max. Marks: 80 Marks

MICROBIOLOGY

(RS3 – Medical Laboratory Technology, Medical Imaging Technology and Radiotherapy Technology RS2 – Operation Theatre Technology, Cardiac Care Technology, Perfusion Technology, Renal Dialysis Technology, Respiratory Care Technology, Anaesthesia Technology and Neurosciences Technology)

Q.P. CODE: 3155

(QP contains two pages)

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

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

1. Briefly explain acquired immunity.
2. Explain the principle and procedure of hot air oven.
3. Briefly explain the laboratory diagnosis of Salmonella typhi infection.
4. Morphological features of Entamoeba histolytica (Trophozoite & cyst)
5. Explain the laboratory diagnosis of fungal infections.
6. Give any five properties of viruses.
7. Bacterial cell wall
8. Bacterial growth curve
9. Briefly explain the parts of compound microscope with a neat diagram.
10. Name any three fungi causing opportunistic infections. Give a brief account of Candidiasis.

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

11. Killed vaccines
12. Flagella
13. Name the three genera of Dermatophytes.
14. Inspissation
15. Laboratory diagnosis of Mucormycosis
16. Write a note on prevention of hospital acquired infections.
17. VDRL
18. Pathogenic lesions caused by Staphylococcus aureus
19. Poliomyelitis
20. Hepatitis 'B' Surface antigen
21. Extra intestinal Amoebiasis
22. Agents used for fumigation