

16. INVESTIGATIVE BIO-TECHNOLOGY - 2021

Scheme :	Min. Pass Marks	Max. Marks
Paper-I	40	
Paper-II	40	
Paper-III	40	
Practical	120	


Paper-I: Bio Chemistry and Systemic Bacteriology

Max. Marks-40

Section - A

Bio-Chemistry II

1. Blood sugar and its regulation
2. Chemical examination of urine
3. Glucose tolerance test
4. Diabetes mellitus, Ketosis, Diabetic coma
5. Non-protein nitrogenous compounds
6. The Plasma Proteins and A.G. Ratio
7. Lipids
8. Enzymes
9. Tests of Gastric Function. Occult Blood
10. Test in Liver and Biliary Tract Disease
11. Tests in Pancreatic Disease, Steatorrhoea
12. Acid Base Regulation
13. Basal Metabolism, Blood Oxygen
14. Regulation of pH in blood and body fluids
15. Vitamins and their tests
16. Chemical Examination of Cerebrospinal fluid
17. Milk Analysis


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18. Stones (Urinary and Gallbladder)
19. Faecal Pigments
20. Drugs and Poisons, alcohol
21. Water management and its analysis.

Section - B

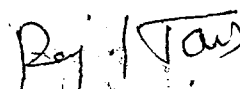
Systemic Bacteriology and other microbes

1. Classification of bacteria
2. Normal bacterial flora and its importance
3. Introduction and Laboratory methods of identification of:
 - (i) Staphylococci
 - (ii) Streptococci
 - (iii) Pneumococci
 - (iv) Neisseria
 - (v) Diphtheria
 - (vi) Anthrax
 - (vii) Clostridia
 - (viii) Enteric Gram Negative Rod
 - (ix) Cholera
 - (x) Pseudomonas
 - (xi) Haemophilus and Bordetella
 - (xii) Spirochetes
 - (xiii) Spirillum and Leptospira
 - (xiv) Rickettsial and Chlamydia
4. Mycology : General characters of Fungi : Yeast like fungi and their diseases; Dermatophytoses
5. Virology : general characters and classification, Diagnostic methods, materials collected for virus isolation and preservation of material.
6. Bacteriology of water, milk and food.

Paper-II : Serology and General Pathology Max. Marks : 40

Serology :

1. Antigens and antibodies
2. Complement and fixation test
3. Agglutination
4. Precipitation
5. Flocculation
6. Neutralization
7. Immunofluorescence


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- Immune electrophoresis
9. Serology of Syphilis
10. Haem Agglutination and Haem Agglutination Inhibition
11. Skin Tests

Section - B

General Pathology

1. Introduction to pathology (Morbid Anatomy and Histology)
2. Degeneration, Necrosis and gangrene and how to recognise them
3. Infection, Thrombosis and Embolism
4. Inflammation
5. Neoplasia, Benign and Malignant tumors

Practical

(75×3 periods)

Max. Marks 120

Unit-I

Bio-Chemistry

1. Cholesterol, Triglycerides, H.D.L., L.D.L.
2. Enzymes, S.G.O.T., S.G.P.T., L.D.H.
3. Alkaline and Acid phosphatase
4. F.T.M. Gastric analysis
5. Serum Electrolytes
6. Principle and application of Spectrophotometer, Turbidimeter and chromatography.

Unit-II

A. Haematology :

1. Erythrocyte Sedimentation Rate (E.S.R.) and Packed Cell Volume (P.C.V.) and Total R.B.C. count
2. Red cell indices and their calculation
3. Staining of Reticulocyte and their counting
4. Total Eosinophil Count
5. Cytochemical stains used in bone Marrow and P.B.F. for diagnosis.
6. Blood Grouping and Rh typing and cross matching.
7. Anti "D" Titres in Maternal blood.
8. Coomb's Test.
9. Demonstrations of collection of Blood for transfusion.

B. Serology and Bacteriology:

1. Cleaning and sterilisation
2. Widal Test

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