SRI VENKATESWARA UNIVERSITY

CBCS PATTERN FOR MICROBIOLOGY

B.Sc MICROBIOLOGY (CBCS) REVISED SYLLABUS – 2020

MBT – III: MEDICAL MICROBIOLOGY AND IMMUNOLOGY

TOTAL HOURS: 48 **CREDITS: 4**

UNIT- I: **No. of hours: 8**

Normal flora of human body. Host pathogen interactions: infection, invasion, pathogen, pathogen city, virulence and opportunistic infection. General account on no monomial infection. General principles of diagnostic microbiology- collection, transport and processing of clinical samples. General methods of laboratory diagnosis - cultural, biochemical, serological and molecular methods.

UNIT- II: **No. of hours: 8**

General account on microbial diseases - causal organism, pathogenesis, epidemiology, diagnosis, prevention and control**.** Bacterial diseases - Tuberculosis and Typhoid Fungal diseases – Candidacies, As per gallowses, Yeast Protozoa diseases – Malaria, Filarial & Diseases spread by House Fly. Viral Diseases - Hepatitis- A & C and AIDS. Dengue, Chicken Gunya, SARS

UNIT- III: **No. of hours: 10**

Description and pathology of diseases caused by As perilous, Penicillium. Description and pathology of diseases caused by hem flagellates; *Leis mania Donavan, L.tropica, Trypanosome ambience.* Principles of chemotherapy, Antibacterial drugs – Penicillin, Antifungal drugs – Nystatin, Antiviral agents – Robovirin, Drug resistance in bacteria.

Interferon – Nomenclature, types & classification, Induction of interferon, types of Inducers.

UNIT- IV: **No. of hours: 10**

Types of immunity - innate and acquired; active and passive; humeral and cell-mediated immunity.

Primary and secondary organs of immune system - Thymus, Bursa fabrics, bone marrow, spleen and lymph nodes. **Cells of immune system-**Identification and function of B and T lymphocytes, null cells, monocots, macrophages, neutrophils, basophiles and eosinophils.

UNIT – V: **No. of hours: 12**

Antigens - types, chemical nature, antigenic determinants, happens. Factors affecting anti gentility.

Antibodies - basic structure, types, properties and functions of immunoglobulin's.

Types of antigen-antibody reactions - Agglutinations, Precipitation, Neutralization, complement fixation, blood groups. Concept of Hypersensitivity and Autoimmunity

Labeled antibody based techniques - ELISA, RIA and Immune fluorescence.

Polyclonal and monoclonal antibodies - production and applications polyclonal antibodies, Hybridism technology.

MBP – III: MEDICAL MICROBIOLOGY AND IMMUNOLOGY

TOTAL HOURS:30 **CREDITS: 2**

1. Identification of human blood groups.
2. Separate serum from the blood sample (demonstration).
3. Estimation of blood hemoglobin.
4. Total Leukocyte Count of the given blood sample.
5. Differential Leukocyte Count of the given blood sample.
6. Immune diffusion by Ouster loony method.
7. Identify bacteria - *E. coli, Pseudomonas, Staphylococcus*, *Bacillus*, using laboratory strains on the basis of cultural, morphological and biochemical characteristics: Iambic, unease production and catalyse tests
8. Isolation of bacterial flora of skin by swab method.
9. Antibacterial sensitivity by Kirby-Bauer method
10. Study symptoms of the diseases with the help of photographs: Anthrax, Polio, Herpes, chicken pox, HPV warts, Dermatomycoses (ring worms)
11. Study of various stages of malarial parasite in RBCs using permanent mounts.

SUGGESTED READING:

- Ananthanarayan R. and Pannier C.K.J. (2009) Textbook of Microbiology. 8th edition, University Press Publication.

- Brooks G.F., Carroll K.C., Betel J.S., Morse S.A. and Meitner, T.A. (2013) Jawed, Mel nick and Adel berg's Medical Microbiology. 26th edition. McGraw Hill Publication.

- Delves P, Martin S, Burton D, Riot's IM. (2006). Riot's Essential Immunology.11th edition Wiley-Blackwell Scientific Publication, Oxford.

- Gold by RA, Kindt TJ, Osborne BA. (2007). Cubby's Immunology. 6th edition W.H. Freeman and Company, New York.

- Cubby's Immunology. 6th edition W.H. Freeman and Company, New York.

- Jawed, Mel nick and Adel berg's Medical Microbiology. 26th edition. McGraw Hill Microbiology. 4th edition. Elsevier Publication.

- Willey JM, Sherwood LM, and Wool overtone CJ. (2013) Prescott, Harley and Klein's Microbiology. 9th edition. McGraw Hill Higher Education.

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SRI VENKATESWARA UNIVERSITY

B.Sc. DEGREE COURSE IN MICROBIOLOGY

III SEMESTER - W.E.F. 2021-22

MODEL QUESTION PAPER

Time: 3 hours Marks: 75 marks

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer any five of the following questions in Part A.
Part B consists of 5 Units. Answer one full question (A or B) from each unit (i.e., Q.No 9 from Unit – I, Q.No 10 from Unit – II, Q.No 11 from Unit – III, Q.No 12 from Unit – IV, Q.No 13 from Unit – V). Each question carries 10 marks.

PART – A

Answer any *Five* of the following question. (5X5=25M)

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

(P.T.O)

PART – B

Answer All The Questions. Each question carries 10 marks (5X10= 50M)

9.	(A) OR (B)
10.	(A) OR (B)
11.	(A) OR (B)
12.	(A) OR (B)
13.	(A) OR (B)