B.Sc. IV Year **Semester – VII**

BIM –E703
DSE-9 MEDICAL MICROBIOLOGY

MM : 100
Time : 3 hrs
L Credit
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Sessional : 30
ESE : 70
Pass Marks : 40

Total Hours: 60

Learning objectives:

- Students will understand the disease caused by the bacteria, fungi, virus and protozoa.
- To know the diagnosis and treatment of bacteria, fungi and viral pathogens.

Learning outcomes:

At the end of course students will be able to

- Understand the development and contribution of different scientist in the field of medical microbiology.
- Describe etiology, pathogenicity, epidemiology and laboratory diagnosis of disease caused by microorganism.
- To isolate and detect the pathogens from the clinical samples.
- Suggest different antimicrobial agent for the treatment of bacterial infections.

UNIT–I

Normal microflora of the human body: importance of normal microflora, normal microflora of skin, throat, gastrointestinal tract, and respiratory tract; Immunology- concept of innate and adaptive immunity, T-cell and B-cell, Antigen- Antibody reactions(Precipitation, Agglutination, and ELISA). **(14 Lectures)**

UNIT -II

Bacterial diseases: symptoms, mode of transmission, prophylaxis, treatment and control of: Respiratory Diseases: *Streptococcus pyogenes*, *Mycobacterium tuberculosis;* Gastrointestinal Diseases: *Escherichia coli*, *Salmonella typhi*, *Vibrio cholerae*, others: *Staphylococcus aureus* **(12 Lectures)**

UNIT –III

Viral diseases: Symptoms, mode of transmission, prophylaxis and control of Polio, Herpes, Hepatitis-B, Rabies, Dengue and AIDS **(12 Lectures)**

UNIT–IV

Fungal diseases: Brief description of each of the following types of mycoses and one representative disease to be studied with respect to transmission, symptoms and prevention of cutaneous mycoses: Tineapedis (Athlete's foot); Systemic mycoses: Histoplasmosis; opportunistic mycoses: candidiasis. **(12 Lectures)**

UNIT–V

Prevention of Microbial Diseases: General preventive measures, Importance of personal hygiene, environmental sanitation and methods to prevent the spread of infectious agents Vaccines:Importance, types of vaccines, vaccination schedule in Indian context. **(10 Lectures)**

Suggested Reading

1. Dubey R.C. and Maheshwari, D.K. *A Textbook of Microbiology*. 3rd ed., S. Chand & Co, Ram Nagar, New Delhi, p. 1034. ISBN 81-219-2620-3
2. Mackie and McCartney. Practical Medical Microbiology, Elsevier
3. CKJ Paniker. Test Book of Microbiology, Orient Longman
4. D.R.Arora. Medical Mycology, CBS Publisher and Distributors

31

DSE 9 SEMESTER VII / BIM-E753 (LAB COURSE CC-09)

The practicals based on BIM E703 will be performed.

1. Determination of susceptibility to dental caries by snyder test.
2. Isolation of microflora from human skin.
3. Isolation of microflora from human throat.
4. Differentiation of Streptococci by bacitracin test.
5. Inulin fermentation.
6. Urine culture and it's microbiological analysis.
7. Isolation of enteric pathogens from stools using direct plating method.
8. Determination of antibiotic sensitivity of UTI pathogens.
9. Differentiation of Streptococci by bile esculin test.
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