

ST. JOSEPH'S COLLEGE FOR WOMEN (A), VISAKHAPATNAM

Four Year – B.Sc. (Hons), Semester – VII

ZOOLOGY

HUMAN HEALTH AND INFECTIOUS DISEASES

TIME:4HRS/WEEK

Max Marks:100

Code: Z 7501(3)

- **Learning Objectives:** Enable the students to
 1. Develop an understanding of the pathogenesis, transmission, and life cycle of various infectious agents, including bacteria, viruses, fungi, and protozoa.
 2. Gain insights into the epidemiology of major infectious diseases.
 3. Acquire Knowledge about the Sexually transmitted diseases.
 4. Understand the transmission mechanism and the immune response.
 5. Learn the importance of prevention, control, and surveillance measures to minimize disease burden.

Learning Outcomes:

Students will be able to:

1. Develop an overview of the pathophysiology of infectious diseases.
2. Apply the knowledge of pathogenesis, transmission, and epidemiology to identify and differentiate between various infectious agents, their life cycles, and modes of spread.
3. Understand the broader public health implications of infectious diseases, recognizing their significance in shaping healthcare policies and strategies.
4. Critically analyze the interaction between infectious agents, their hosts, and the environment, considering factors that contribute to disease emergence, transmission, and potential outbreaks.
5. Summarize the anti-retroviral therapy of viral diseases.

- **Syllabus**

Unit-1

1.1 Introduction to Infectious Diseases:

1.2 Basic concepts in pathophysiology of infectious diseases

1.3 Outline of physiological mechanisms leading to diseased state, Infectious disease transmission, Infection and immunity, Acute and Chronic Infections
Major infectious and non-infectious diseases in Humans with two examples.

Unit-2: Bacterial Infections

2.1 Pathogenesis, mechanisms of pathogenesis; transmission, epidemiology, public health implications, diagnosis, prophylaxis and treatment of major human infections -**Tuberculosis**

2.2 Pathogenesis, mechanisms of pathogenesis; transmission, epidemiology, public health implications, diagnosis, prophylaxis and treatment of major human infections- **Cholera**

2.3 Pathogenesis, mechanisms of pathogenesis; transmission, epidemiology, public health implications, diagnosis, prophylaxis and treatment of major human infections - **Typhoid.**

Unit-3: Viral Diseases

3.1 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and anti-retroviral therapy of Human immunodeficiency virus (HIV/AIDS)

3.2 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and anti-retroviral therapy of Sexually transmitted diseases Gonorrhoea and Herpes.

Unit-4: Fungal Diseases

4.1 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and treatment of major Fungal human pathogens- Dermatophytes

4.2 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and treatment of major Fungal human pathogens: -Candida

4.3 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and treatment of major Fungal human pathogens: -*Aspergillus*

Unit-5: Protozoan Diseases

5.1 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and treatment of Protozoan human pathogen- *Trypanosoma*.

5.2 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and treatment of Protozoan human pathogen- *Giardia intestinalis*.

5.3 Pathogenesis, mechanisms of pathogenesis; transmission, life cycle, epidemiology, public health implications, diagnosis, prophylaxis and treatment of Protozoan human pathogen- *Leishmania donovani*.

Reference Books

1. Environmental Microbiology, Pepper, I. L., Gerba, C. P. and Gentry, T. J. (2015), 3rd edition, Academia Press, Elsevier
2. Textbook of Environmental Microbiology, Mohapatra, P. K. (2008), I.K. International(P)Ltd.
 - a. Basic Biotechnology, Ratledge, C. and Kristiansen, B. (2003), 2nd edition, Cambridge University Press
3. Pocket Guide to Bacterial Infections – K. Balamurugan and Prithika Udayakumar (2019).CRC Press.

Recommended activities

- Report preparation on community health
 - Awareness on Viral diseases in the Student Community
 - Collect paper clippings related to human health and discuss in the class
 - Visit to PHC and know about TB treatment and HIV treatment and collect pamphlets and charts
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