ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

VI SEMESTER **ZOOLOGY** TIME:3Hrs/Week

Z-E2-6501 (3) **IMMUNOLOGY & CLINICAL APPLICATIONS** Max.Marks:100

w.e.f 2016 -2019 (‘17AE’ batch) **SYLLABUS**

**OBJECTIVES:**

1. To learn basic concepts of immunology.
2. To understand the immune system.
3. To inculcate the importance of vaccines.
4. To recognize the various types of hypersensitivities
5. To understand the role of immunity in various diseases.

**COURSE:**

**UNIT–I:** **Overview of Immune system**

1. Introduction to basic concepts in Immunology
2. Innate and adaptive immunity

**Cells and organs of Immune system**

1. Organs of immune system
2. Cells of immune system

**UNIT–II: Antigens:**

1. Basic properties of antigens
2. B and T cell epitopes, haptens and adjuvants
3. Factors influencing immunogenicity

**Antibodies:**

1. Structure of antibodies
2. Classes and functions of antibodies
3. Monoclonal antibodies.

**UNIT–III: Working of Immune system:**

1. Humoral immune response (antibody/B-cell mediated)
2. Primary and Secondary responses
3. Antigen presentation & processing.
4. Cellular immune response (T-Cell mediated)
5. Basic properties and functions of cytokines.

**UNIT–IV: Immune Response in health and disease**

1. Classification and brief description of various types of hyper sensitivities.
2. Introduction to concepts of autoimmunity and immunodeficiency.

**Vaccines:** 1. General introduction to vaccines

2. Types of vaccines.

**UNIT–V: CLINICAL APPLICATIONS:** 1.Immunological Techniques (diagnostic tests): Agglutination, Precipitation, immunoelectrophoresis, complement fixation, Neutralisation, ELISA,RIA-(radio immunoassay) and HLA typing (human leucocyte antigen system).

2. Auto immune Diseases & Immuno deficiency Diseases.

1. Immunology of organ transplantation.

**TEXT BOOKS:**

1. Text book of Microbiology by K.Ananthanarayanan&C.K.Jayaram Paniker.
2. Essentials of Medical Microbiology by Rajesh Bhatia & Rattan Lallchhpujani
3. Review of Medical Microbiology by Ernest Jawetz bld.

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ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

VI SEMESTER **ZOOLOGY** TIME:2Hrs/Week

Z-E2-6551(2) **IMMUNOLOGY&CLINICAL APPLICATIONS**  Max.Marks:50

w.e.f 2016 -2019 (‘16AD’ batch) **PRACTICAL SYLLABUS – IV**

1. Demonstration of lymphoid organs (as per UGC guidelines)
2. Histological study of spleen, thymus and lymph nodes (through prepared slides)
3. Blood group determination&Rh typing.
4. Demonstration of a. ELISA

b. ImmunoElectrophoresis.

1. Blood cell counting-RBC, WBC, DIFFERENTIAL COUNTING.
2. Estimation of blood sugar and serum proteins.
3. Urine analysis and estimation of urine sugar.

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