Curriculum plan (Odd Semester 2022-23)

Teacher Name: Dr. K. Vandana Rani

Paper name: ZH DSE Course-VIII: Immunology

Class type: Theory

Paper shared with: Dr. Rani

Unit to be taken	Allocated lectures	Month wise schedule to be followed	Tests/ Assignments/ Revision/ Presentations etc
Unit 1: Overview of the Immune system i) Historical perspective, ii) early theories of immunology, clonal selection theory. Iii) Cardinal features of vertebrate immune system,. iv) Hematopoiesis v) Cells and organs of the Immune system.	10	20/07/2022 to 26/08/2022	
Unit 3: Antigen i)Antigenicity and Immunogenicity, ii) Immunogens, iii) Adjuvants and haptens iv) Factors affecting immunogenicity, v) B and T cell epitopes, .	08	30/08/2022 to 23/09/2022	Assignments/ Presentation
Unit 4:Antibody i) Structure and function of different classes of immunoglobulins, ii) Antigenic determinants on immunoglobulins, iii) Antigen-antibody interactions (precipitation reaction, agglutination, immunofluorescence and ELISA), iv) Polyclonal sera, v) Hybridoma technology: Monoclonal antibodies in therapeutics and diagnosis	10	27/09/2022 to 04/11/2022	Test
Unit 7: Complement System i)Components and pathways of complement activation, ii) Biological consequences of complement activation	4	08/11/2022 to 18/11/2022	Revision

Name of Teacher : Dr. K. Vandana Rani

Signature

Curriculum plan (Odd Semester 2022-23)

Teacher Name: Dr. K. Vandana Rani

Paper name: ZH DSE Course-VIII: Immunology

Class type: Practicals (Group: G1+G2)

Paper shared with: Dr. Rani

Unit to be taken	Allocated lectures	Month wise schedule to be followed (G1+G2)	Tests/Assignments/ Revision/ Presentations etc
1. Demonstration of Lymphoid Organ	4	20.07.22/27.07.22	
2. Histological Study of Spleen, Thymus and Lymph Nodes through Slides/ Photographs	4	03.08.22/10.08.22	
3. Preparation of stained blood film to study various types of blood Cells	4	17.08.22/24.08.22	Presentation
4. Basic patterns of precipitation by Ouchterlony's double immuno-diffusion method.	4	31.08.22/07.09.22	
5. ABO Blood group antigen determination by heamagglutination	4	14.09.22/21.09.22	
6. Cell counting and viability test from splenocytes of farm bred animals/cell lines.	4	28.09.22/12.10.22	
7. i)Demonstration of ELISA	4	19-10.22	
7. ii)Demonstration of Immunoelectrophoresis	4	26.10.22	
8. Detection of complement activity using haemolysis of antibody coated SRBC and standard serum	4	02.11.22/09.11.22	
Repeat		16-11-22-23.11.22	Revision/ File Evaluation

Name of Teacher : Dr. K. Vandana Rani

Signature

Curriculum plan (Odd Semester 2022-23)

Teacher Name: Dr. K. Vandana Rani

Paper name: ZH Core-VII: Fundamentals of Biochemistry

Class type: Theory

Paper shared with: Dr. Rani

Unit to be taken	Allocated lectures	Month wise schedule to be followed	Tests/ Assignments/ Revision/ Presentations etc
Unit 4: Nucleic Acids i) Structure: Purines and pyrimidines, Nucleosides, Nucleotides, Nucleic acids ii)Cot Curves:Base pairing, Denaturation and Renaturation of DNA; iii)Types of DNA and RNA, iv)Complementarity of DNA, v)Hypo-Hyperchromicity of DNA	12	26/08/2022 to 012/09/2022	
Unit 5: Enzymes i)Nomenclature and classification; ii)Cofactors; Specificity of enzyme action; iii)Isozymes; iv)Mechanism of enzyme action; v)Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; vi)Derivation of Michaelis-Menten equation,Concept of Km and Vmax, Lineweaver-Burk plot; vii)Multi-substrate reactions; viii)Enzyme inhibition; Allosteric enzymes and their kinetics; ix)Regulation of enzyme reaction.	18	16/09/2022 to 02/12/2022	Assignments/ Presentation

Name of Teacher : Dr. K. Vandana Rani

Signature

Curriculum plan (Odd Semester 2022-23)

Teacher Name: Dr. K. Vandana Rani

Paper name: ZH Core-VII: Fundamentals of Biochemistry

Class type: Practicals (Group: G1+G2+G3)

Paper shared with: Dr. Rani+Dr. P.P. Saini

Unit to be taken	Allocated lectures	Month wise schedule to be followed (G1+G2+G3)	Tests/Assignments/ Revision/ Presentations etc
1. To understand the preparation and roles of two important biological buffer systems: phosphate and bicarbonate; Preparation of buffers and determination of pH	4	30.08.22	
2. Qualitative tests of functional groups in carbohydrates	4	06.09.22/13.09.22	
3. Qualitative tests of functional groups in proteins	4	20.09.22	Presentation
4. Qualitative tests of functional groups in lipids.	4	27.09.22	
5. Quantitative Tests: Determination of Ascorbic acid – DCPIP method OR Estimation of Calcium–Titrimetric method.	4	11.10.22/18.10.22	
6. Paper chromatography of amino acids.	4	01.11.22/08.11.22	
7. Effect of pH, temperature and inhibitors on the action of salivary amylase.	4	15.11.22/22.11.22	
7. Demonstration of proteins separation by SDS-PAGE.	4	29.11.22	
Repeat		6.12.22/13.12.22	Revision/ File Evaluation

Name of Teacher : Dr. K. Vandana Rani

Signature