



The Islamia University of Bahawalpur
Department of Biochemistry & Biotechnology
BS (Hons) Program
Semester: 8th

Paper: VIROLOGY

Credit Hours: 3

Weekly Division of Syllabus

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| Week-1 | Introduction to Viruses; Size, Shape, Capsid, Symmetry, Viral Proteins, Envelope, Atypical Virus Like agents. |
| Week-2 | Replication; Viral growth curve, The Growth cycle, Viral mRNA Viral Gene expression, Lysogeny. Genetics of Virus and Gene Therapy. |
| Week-3 | Virus Genome and types of virus genomes; mutations in virus genome and types of mutations, Classification of Medically Important Viruses; DNA Viruses, RNA Viruses and their families. |
| Week-4 | The Pathogenesis of Virus; The infected Cell, The infected Patient, Pathogenesis and Immunopathogenesis, Virulence. |
| Week-5 | Host Defenses; Non specific Defenses, Specific Defenses; Active immunity, Passive Immunity. |
| Week-6 | Laboratory Diagnosis of Viruses; Cell Culture, Microscopy, Serology, PCR. |
| Week-7 | Anti Viral Drugs; Inhibition of Viral Nucleic Acid Synthesis, Inhibition of Cleavage of Precursor Polypeptides, Inhibition of Viral protein Synthesis, Inhibition of Release of Viruses. |
| Week-8 | Viral Vaccines; Active Immunity, Passive Immunity. Corona Virus and pathology, Dengue virus and pathology |
| Week-9 | Mid Term Examination |
| Week-10 | Herpes Simplex Viruses; Their Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment. Varicella Zoster Viruses; Their Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment Prevention. |
| Week-11 | Cytomegalovirus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Epstein Barr Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| Week-12 | Adenovirus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| Week-13 | Papillomavirus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Parvovirus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| Week-14 | Influenza Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Measles Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| Week-15 | Mumps Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Rabies Viruses; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| Week-16 | Polio Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Hepatitis A Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| Week-17 | Hepatitis B Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Hepatitis C Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. Hepatitis D Virus; Properties, Transmission and Epidemiology, Clinical findings, Laboratory diagnosis, Treatment, Prevention. |
| | Final Term Examination |

BOOKS

- 1- Insect Virology by Sassan Asgari and Karyn N (2010) Caister Academic Press UK.
- 2- REVIEW OF MEDICAL MICROBIOLOGY AND IMMUNOLOGY 11th Edition By Warren Levinson (2010) MCGRAW HILL Publishers.
- 3- Medical Microbiology & Immunology: Examination & Board Review by Warren E. Levinson, Ernest Jawetz (1994) MCGRAW HILL Publishers USA