**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Even Semester) Session (2019-2020)**

**Class: BSc micro 2nd sem**  **Name of the Teacher: Akashdeep Sandhu**

**Subject: Microbiology Period: 6**

**Paper: 201 &202 Room No:219**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 09-01-2020 to 11-01-2020 | Microscopic examination of micro-organism, bright field microscopy, dark field microscopy, phase contrast microscopy and electron microscopy. |
| Week 2 | 13-01-2020 to 18-01-2020 | Staining of microbes, theory of Gram staining. |
| Week 3 | 20-01-2020 to 25-01-2020 | Animal Viruses: Morphology, cultivation and viral disease cycle. |
| Week 4 | 27-01-2020 to 01-02-2020 | Bacteriophages: Morphology, multiplication, detection and enumeration. |
| Week 5 | 03-02-2020 to 08-02-2020 | Biotransformation of  D-Sorbitol to L-Sorbose.  Antibiotics. Steroids. |
| Week 6 | 10-02-2020 to 15-02-2020 | Genetic engineering for human welfare:  Production of pharmaceuticals. |
| Week 7 | 17-02-2020 to 22-02-2020 | Insect pest control.  Use of Genetically Engineered Microorganisms (GEMs) for control of pollution. |
| Week 8 | 24-02-2020 to 29-02-2020 | Microbial Growth: Growth in population, bacterial growth curve, mathematical nature and expression. |
| Week 9 | 02-03-2020 to 05-03-2020 | Factors affecting growth in microorganisms. Methods for measurement of growth in microorganisms. |
| Mid Semester Exams (06-03-2020 to 13-03-2020) | | |
| Week 11 | 14-03-2020, 16-03-2020 to 21-03-2020 | Mechanisms of enzymes action. Inhibition, control and regulation of enzyme activity. |
| Week 12 | 24-03-2020 to 28-03-2020 | Enzyme kinetics: Michaelis-Menten equation. |
| Week 13 | 30-03-2020 to 04-04-2020 | Microbial Metabolism:  Catabolism of lipids and proteins.  Beta oxidation |
| Week 14 | 07-04-2020 to 11-04-2020 | Electron transport chain.  Biochemical mechanisms of generation of ATP. |
| Week 15 | 15-04-2020 to 18-04-2020 | Microbial Utilization of Energy & Biosynthesis:  Transport of nutrient by bacteria |
| Week 16 | 20-04-2020 to 24-04-2020 | Synthesis of Amino Acids: Glutamate, lysine, glutamine, serine, arginine family. Structures and biosynthesis of cell wall peptidoglycan |
| Week 17 | 27-04-2020 to 02-05-2020 | Biosynthesis of Carbohydrates (gluconeogenesis) & Phospholipids.  Replication of DNA molecules, Transcription & Translation (process of protein synthesis). |
| Week 18 | 04-05-2020 | Biogeochemical Cycling—Carbon cycle, Nitrogen cycle, Phosphorus and Sulphur cycle with role of microorganisms.  Sewage (waste-water) treatment, chemical characteristics, microbiological characteristics, waste water treatment processes. |