**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Session (2016-17)**

**Class: M.Sc Sem IV and B.Sc Sem VI (Section A&B) Name of the Teacher: Dr. Rewa Sharma**

**Subject: Zoology Period :**

**Paper : B.Sc- A :Genetics Room No :**

**M.Sc -PAPER XVI : DEVELOPMENTAL BIOLOGY - II**

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| **S. No** | **Date From** | **Date Upto** | | **Topics to be covered** |
| Week 1 | Jan 11,2017 | Jan 14, 2017 | | Introduction to organogenesis and induction |
| Week 2 | Jan 16, 2017 | Jan 21, 2017 | | Non-allelic gene interaction, Modified F2 ratios. (9:7, 9:3:4, 9:3:3:1, 12:3:1, 13:3, 15:1, 9:6:1) |
| Week 3 | Jan 23, 2017 | Jan 28, 2017 | | Organogenesis: Vulva formation in C. elegans, Eye lens induction. Epithelio-mesenchymal interactions, Differentiation of neuron. |
| Week 4 | Jan 30, 2017 | Feb 4, 2017 | | Gene modifications due to incomplete dominance, lethal factors (2:1), Pleiotropic genes. |
| Week 5 | Feb 6, 2017 | Feb 11, 2017 | | Primary and secondary embryonic induction, chemical nature of evocators. |
| Week 6 | Feb 13, 2017 | Feb 18, 2017 | | Multiple Alleles: Blood group inheritance, eye colour in Drosophila, pseudo-allelism. Multiple factors: Qualitative and quantitative characters, inheritance of quantitative traits (skin colour in man). |
| Week 7 | Feb 20, 2017 | Feb 25, 2017 | | Introduction to stem cells, stem cell related disorders, gene therapy.  Metamorphosis. |
| Week 8 | Feb 27, 2017 | Feb 28, 2017 | | Gene and Genetic Code: Structure of nucleic acids (DNA & RNA). Replication of DNA and transcription. Expression of gene (protein synthesis in Prokaryotes and Eukaryotes). |
| **First Week March (Mid Semester Exam)** | | | | |
| Week 9 | March 9,2017 | | March 11,2017 | Teratogenesis: Critical period dose, classes of cytotoxic teratogens, human teratogenesis. |
| Week 10 | March 13 ,2017 | | March 18, 2017 | Properties of genetic code, codon assignment, wobble hypothesis.  Extranuclear inheritance: Kappa particles in Paramecium. |
| Week 11 | March 20,2017 | | March 25, 2017 | Totipotency & nuclear transfer experiment. |
| Week 12 | March 27,2017 | | April 1 , 2017 |  |
| Week 13 | April 3 ,2017 | | April 8 , 2017 | Cell surface adhesion, inter cellular adhesion, adhesive molecules - cadherins. |
| Week 14 | April 10 ,2017 | | April 15 , 2017 | Environmental evolution and animal development: Environmental cues and effects, malformations and disruptions, changing evolution through development modularity, developmental constraints. |
| Week 15 | April 17 ,2017 | | April 22 , 2017 | Regulation of gene expression in prokaryotes (Operon model) and in eukaryotes. Applied Genetics: Recombinant DNA |
| Week 16 | April 24 ,2017 | | April 29 , 2017 | Sex determination. Revision |
| Week 17 | April 30, 2017 | | May 6, 2017 | Applied Genetics: genetic cloning and its applications in medicine and agriculture, DNA finger printing. |