

**Syllabus of Embryology . Second year students**

**30 Hrs.**

**GENERAL EMBRYOLOGY**

**1.Introduction –Definition of medical embryology 1**  
**Introducton to molecular regulation and signaling**

**2. Gametogenesis :Conversion of germ cells into male& female gametes.**

**Chromosomes during mitosis &meiosis 1**

**Non disjunction**

**3.Morphological changes during gamete maturation . 1**

**-prenatal oogenesis**

**-postnatal oogenesis**

**4.Spermatogenesis -Spermiogenesis –Abnormal gamete – Ovulation 1**

**5.Fertilization 1<sup>st</sup> week of development :-ovarian cycle 1**  
**corpus luteum ,phase of fertillzatoin 1,2,3, cleavage , blastocyst formatiron ,**  
**preparation of uterine endometerium to recieve the blastocyst.**

**6. 2<sup>nd</sup> week development**

**Day 8 ,9 ,11-12 & 13 . clinical correlates ,abnormal implantation**

**7. 3<sup>rd</sup> week development**

**Gastrulation ,primitive streak ,notochord .**

**Further development in trophoblast. Secondary & tertiary villi 1**

**8.Differentiation of germ layers ,ectoderm ,Formation of neural tube and neural crest 1**

**Formation of auditory & lens placodes .**

**9. Differentiation of mesoderm, paraxial mesoderm and their derivatives, intermediate mesoderm & derivatives. Lateral plate mesoderm Somites differentiation. Blood & blood vessels 1**

**10. Endoderm 1**

Head fold, tail fold, vitelline duct, primitive gut.

External appearance during The 2nd month

Fetal period 3<sup>rd</sup> month –birth

**11. Formation of deciduas, fetal membrane & development of placenta.**

Amnion & chorion.

Umbilical cord.

Function of placenta.

2

Twins.

**12. Congenital malformation.**

1

Incidence & etiology

### **SYSTEMIC EMBRYOLOGY**

**13. Skeletal system**

1

Skull, skull abnormalities

Limbs, limbs abnormalities

Vertebral column, vertebral column abnormalities.

**14. Muscular system**

Smooth, striated, & cardiac muscles.

1

**15. Body cavities & serous membranes.**

**16. Cardiovascular system**

Formation and position and heart tube.

4

Formation heart loop

**Development of sinuse venosus .**

**Formation cardiac septa**

**Abnormalities of atrioventricular canal**

**Abnormalities of interventricular septum .**

**17.Respiratory system** **1** **-**  
**larynx**

**-Trachea ,bronchi ,& lung**

**18.digestive**

**Forgut: -esophagous** **2**

**-stomach**

**-Duodenum**

**-Liver ,gall bladder**

**-pancreas**

**Mid gut & hind gut**

**Physiological hernation**

**Abnormalities in development of digestive system**

**19 .Urogenital system**

**Urinary system** **1**

**Formation of excretory unit**

**Kidney systems –pronephros**

**-Mesonephros**

**-Metanephros**

**Abnormalities in development .**

**20 .Genital system**

**Gonad , indifferent gonad** **1**

**Testis & ovary**

**Genital duct**

**External genitalia**

**Abnormalities**

**21. Head & neck 1**

**Pharyngeal arches**

**Pharyngeal pouches**

**Tongue**

**Thyroid gland**

**Cleft lip & palate**

**22. Eye & ear**

**Optic cup , lens vesicle 1**

**Retina ,iris ,culinary body &lens**

**Internal ear ,middle &external ear .**

**23. Central nervous System 1**  
**spinal cord**

**Brain**

**Clinical Correlates**

**24 - Epidermis & dermis**

**Hair Mammary gland**