NAME: IKE TIMOTHY GREGORY

MATRIC NO: 18/MHS01/179

EMBRYOLOGY ASSIGNMENT

1. This is the release of egg or ovum from one of a women's ovaries. After the egg is released, it travels down the fallopian tube, where fertilization by sperm cell may occur. Ovulation typically last one day and occurs in the middle of the menstral cycle about two weeks before she get her period.

2. i. In meiosis 1 homologous chromosomes separate while in meiosis 2 sister chromatids separate.
   ii. Meiosis 1 produces 2 diploid daughter cells while Meiosis 2 produce 4 hapliod daughter cells.
   iii. Genetic recombination (crossing over) occurs in meiosis 1 but it doesn't occur in meiosis 2.

3. i. Serm capacitation: Freshly ejaculated sperm go through certain processes collectively known as capacitation. This involves removal of adherent seminal plasma proteins, reorganization of plasma membrane lipids and proteins. This occurs when sperm reside in the female reproductive tract during gamete transfer after undergoing capacitation sperm become hyperactivated and prepares it for acrosomal reaction.
   ii. Sperm-zona pellucid binding: Binding of sperm to the zona pelucida , the carbohydrate group on the zona pellucida glycoproteins function as sperm receptors,
   iii. The acrosome Reaction: The acrosomal reaction provides the sperm with an enzymatic drill to get through the zona pellucida. Plasma membrane and acrosomal membrane fuse lead to the exposure of the acrosomal content from the sperm head.
   iv. Penetration of zona pellucida: The constant propulsive force from the sperm's flagellating tail, in combination with acrosomal enzymes , allow the sperm to create a tract through the zona pelllucida.
   v. Sperm- Oocyte binding :Once a sperm penetrates the zona pellucid , it binds to and fuses with the plasma membrane of the oocyte. Binding occurs at the posterior region ofbthe sperm head. The molecular nature of sperm to oocyte binding is not completely resolved.
   vi. Egg activation and the Corticai reaction :Upon binding with the sperm the egg undergoes a series of changes that are collectively csalled egg activation. The cortical reaction refers to a massive exocytosis of cortical granules seen shortly aftrer sperm-oocyte fusion.

4. i. Monozygotic twins result from the fertilization of one egg and one sperm while Dizygotic twins result from the fertilization of 2 different eggs with 2 different sperms.
   ii. Monozygotic twins have very similar or identical traits because they share chromosomes while Dizygotic twins are non-identical in the sense that they don't share traits.