

Name: onoseme stephania
ogheneakpobo

Course: Embryology

Matric number: 18/mhs02/158

1. What is ovulation: ovulation is the release of an egg from the ovary into the fallopian tube. It is part of the menstrual cycle, it occurs when an egg is released from the ovary. After the egg is released, it travels down the fallopian tube, where fertilization by sperm cell may occur. Ovulation typically lasts one day and occurs in the middle of a woman menstrual cycle, about two weeks before she expects to get her period. But the timing of the process varies from each woman, and it may even vary from month to months
2. Differentiate between meiosis 1 and meiosis 2: In meiosis1, homologous chromosomes separate while in meiosis 11, sister chromatids separate. Meiosis 11 produces 4 haploid daughter cells whereas meiosis 1 produces 2 diploid daughter cells.
3. Discuss the stages involved in fertilization:
 1. Passage of a sperm through the corona radiata: for sperms to pass through the corona radiata, they must have been capacitated[removal of the glycoprotein coat and seminal plasma proteins from the plasma membrane that overlies the acrosomal region of the spermatozoa]
 2. Penetration of the zona pellucida: The zona is a glycoprotein shell surrounding the eggs that facilitates and maintains sperm binding and induces the acrosome reaction. The intact acrosome of the sperm binds with the zona glycoprotein on the zona pellucida. Release of the acrosomal enzymes allows sperm to penetrate the zona pellucida thereby coming in contact with the plasma membrane of the oocytes, as soon as the head of the sperm comes in contact with the oocytes surface, the permeability of the zona pellucida changes. Then when a sperm comes in contact with the oocytes surface, lysosomal enzymes are released from cortical granules lining the plasma membrane of the oocyte.
 3. Fusion of the plasma membrane of the oocyte and sperm: the plasma or the cell membranes of the oocyte and sperm fuse and break down at the area of fusion. The head and tail of the sperm enter the cytoplasm of the oocyte but the sperm plasma membrane remains behind
 4. Completion of the second meiotic division of the oocyte into completing the second meiotic division and forming a mature oocyte and the second polar body

4. Differentiate between monozygotic twins and dizygotic twins: Monozygotic twins originates from a single zygote or fertilized egg, they normally share one placenta and amniotic sac while Dizygotic twins originates from two zygotes or fertilized egg. They are normally called fraternal twins