Embryology assignment

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1. Ovulation is the release of an egg from one of the woman’s ovaries. After the egg is released, it travels down the Fallopian tube where fertilization by the sperm cell may occur. Ovulation lasts for one day and occurs in the middle of a woman’s menstrual cycle about 2 weeks before she expects to get her period, it happens when hormone changes trigger an ovary to release an egg. You can only become pregnant if a sperm fertilizes the egg. The signs of ovulating may include light spotting, slight cramping in one side of the pelvis, breasts tenderness, increased sex drive, abdominal bloating.
2. In meiosis 1, homologous chromosomes separate while in meiosis 2, sister chromatids separate. Meiosis 2 produces 4 haploid daughter cells whereas meiosis 1 produces 2 diploid daughter cells. Crossing over only occurs in meiosis 1.
3. Stages of fertilization are

Passage of sperm through corona radiata : only capacitated sperm can pass freely through corona radiata.

Penetration of Zona pellucida: The Zona pellucida releases acrosomal enzymes which allows sperm to penetrate it, thereby coming in contact sigh the plasma membrane of the Oocyte. As soon as the head of sperm comes in contact with the Oocyte surface, the permeability of the Zona pellucida changes. Only one sperm seems to be able to penetrate the Oocyte.

Fusion of plasma membranes of Oocyte and sperm: plasma membrane of Oocyte and sperm fuse and break down at area of fusion. The head and tail of sperm enter cytoplasm of Oocyte but the plasma membrane remains behind.

Completion of second meiotic division of Oocyte and formation of female pro nucleus : penetration of Oocyte by sperm activates the Oocyte into completing the second meiotic division and forming a mature Oocyte and second polar body.

Formation of male pronucleus: within the cytoplasm of the Oocyte, the nucleus of the Soren enlarges to form the male pronucleus and the tail of the sperm degenerates.

1. Monozygotic twins are formed from a single zygote.

They are genetically identical.

Resemblance is similar while

Dizygotic twins are formed from 2 zygotes.

They are genetically not identical.

Resemblance is just like any other two siblings.