**NAME: UBAH CHIGOZIRIM DIVINE FAVOUR**

**MATRIC NO: 18/MHS01/350**

**DEPARTMENT: MBBS**

**LEVEL: 200**

**COLLEGE: MHS**

**COURSE CODE: ICBS**

 **EMBRYOLOGY**

* **DISCUSS OVULATION**

Ovulation is the release of a mature female egg cell from an ovary which typically happens once during each menstrual cycle.This event occurs when the ovarian follicles rupture and release the secondary oocyte ovarian cells.The egg cell lives for up to 24 hours after being released. If it’s not fertilised, the egg cell dies and the menstrual cycle progresses to the next phase.Ovulation takes place at the end of the first phase in the menstrual cycle, typically this happens around 2 weeks after your period.

* **DIFFERENTIATE BETWEEN MEIOSIS 1 AND MEIOSIS 2**

|  |  |
| --- | --- |
|  MEIOSIS I |  MEIOSIS II |
| Synapsis occur | No synapsis |
| Crossing over occurs | no crossing over |
| 2 haploid cells are formed at the end | 4 haploid cells are formed at the end |
| It’s preceded by interphase | No interphase takes place |
| it takes more time | It takes less time |
| Reduces the chromosome number in the daughter cell | Equalises the chromosome number of both daughter and parent cell |

* **DISCUSS THE STAGES INVOLVED IN FERTILIZATION**

Fertilisation is a complete sequence of coordinated molecular events that begins with contact between a sperm and an oocyte and ends with the intermingling of maternal and paternal chromosomes at metaphase. It consists of **6** stages;

1. Passage of a sperm through the corona radiata
2. Penetration of the zone pellucida: the acrosome releases enzymes such as esterases, acrosine and neuraminidase which causes lysis of the zone pellucid thereby forming a path for the sperm to pass through. after the penetration a zone reaction that prevents other sperms from entering occurs.
3. Fusion of the cell membrane of oocyte and sperm: they break down at the point of fusion. The head and tail of the sperm enters the cytoplasm of the oocyte, leaving the plasma membrane and mitochondria behind
4. Completion of the 2nd meiotic division of the oocyte and formation of the female pro nucleus: after the sperm enters , the oocyte completes its 2nd meiotic division to form a mature oocyte and its nucleus becomes the female pro nucleus.
5. Formation of the male pro nucleus: within the cytoplasm of the oocyte, the nucleus of the sperm transforms to male pronucleus and the tail degenerates.
6. Formation of zygote: as the pronuclei fuse into a single diploid aggregation of chromosomes, the ootid becomes a zygote.
* **DIFFERENTIATE BETWEEN MONOZYGOTIC TWINS AND DIZYGOTIC TWINS**

|  |  |
| --- | --- |
|  Monozygotic twins |  dizygotic twins |
| Monozygotic twins are developed by the splitting of a fertilised embryo into two | dizygotic twins are developed by two separate simultaneous fertilization events |
| The blood types are the same | The blood types are different |
| The gender is the same | The gender is different |
| Genetic codes are nearly identical | Genetic codes are same as any other sibling |
| The cause is unknown | Caused either by IVF, certain fertility drugs or hereditary predisposition |
| It can be either di-di, mono-di or mono-mono twins | Only di-di twins |