1. **Female Reproductive System**: Ovaries produce eggs in follicles. One egg is released each ovarian cycle. Follicles release female hormones called estrogens.

2. **Oviducts / Fallopian tubes** draw egg by beating cilia. Fertilization takes place in upper oviducts.

3. **Fertilization** is the fusion of one egg and sperm. The first diploid cell is called zygote.

4. **Cleavage** is the series of mitotic divisions that divide the zygote into $2 \rightarrow 4 \rightarrow 8 \rightarrow 16 \rightarrow 32$ and so on cells. At first a solid ball of cells is formed. The embryo continues to roll towards uterus.

5. **Blastocyst** is formed of about 100 cells. It *takes 6-7 days* to form after fertilization / conception. **Implantation**: Blastocyst reaches uterus and gets attached to inner wall of uterus called Endometrium. Endometrium grows each ovarian cycle under the influence of hormones FSH, LH, and estrogens. If there is no fertilization Endometrium is shed off – it is called **Menstruation** and is flow of blood and tissue.

6. **Uterus**: is the womb for development of baby. Both oviducts lead to it. The neck part of uterus protrudes into vagina and is called Cervix. In many women it becomes cancerous and called **Cervical Cancer** – the number 1 cancer in women. Vagina is genital duct used for intercourse and birth.

7. **Male Reproductive System**: Testes produce sperms and male hormone Testosterone. If the embryo secretes testosterone embryo grow into a male otherwise by default the sex of embryo is female. Testosterone is responsible for male characters including appearance.

8. **Epididymis** collects sperms from testes and stores them. Sperms also mature here.

9. **Vas deferens** carries the sperms to urethra where the secretion of Seminal Vesicles and Prostrate Gland is added. Sperms and secretion of glands form semen which is ejaculated through penis during intercourse.

10. **Sperms** enter vagina and swim through uterus to upper parts of oviducts where fertilization may take place.

11. **Impotence**: is the failure of penis to get erect or remain erect during intercourse. Smoking and drug use increase the chance of impotence.

12. **Sterility**: if a male cannot produce sperms or enough sperms to ensure fertilization he is called sterile.

13. **Ovarian Cycle**: Ovaries have large number of follicles. Under the influence of FSH and LH some follicles start developing. Ultimately only one follicle reaches maturity. In most women ovarian
cycle is of about 28 days. **Ovulation** is the release of egg around 14th day of cycle. Each month uterus prepares for development of baby by growing glandular/vascular tissue called Endometrium. If there is no pregnancy Endometrium is shed off as menstruation.

14. **Pregnancy:** If egg is fertilized it grows into Blastocyst (about 150 cells) in 6-7 days after fertilization/ conception. Blastocyst gets implanted to uterus wall and is surrounded by Endometrium. Embryo develops a Placenta to get food and oxygen from mother’s blood and pass out wastes. Advanced embryo with human features is called Fetus and is connected to uterus by Umbilical Cord. Fetus is surrounded by Amnion having amniotic fluid in it. No menstruation or ovarian cycle continues during pregnancy. Birth takes place after about 40 weeks from last menstruation.