



Blue Print (As per PU Board)

Topic	1 mark questions	2 marks questions	3 marks questions	5 marks questions	Total Marks
Human Reproduction	2	-	-	1	7

One mark questions

- Why breast feeding is recommended during initial stages of infant growth?**
Answer: The first secretions of the mammary gland called colostrum contains several antibodies essential for the development of resistance of the new born.
- Define spermiogenesis**
Answer: The transformation of spermatids in to sperm is called spermiogenesis
- What is mesovarium?**
Answer: It is a fold of peritoneum that holds the ovary close to the lateral wall of the pelvic cavity.

Two marks questions

- What is corpus luteum? Mention its function**
Answer: The remaining parts of the Graafian follicle after ovulation is called corpus luteum
It secretes progesterone for maintenance of pregnancy conditions
- Define the terms: (a) Ovulation (b) parturition**
Answer: **Ovulation** :- The process of release of egg or ovum from the graafian follicle is called ovulation
- Name the two types of cells present on inner lining of seminiferous tubules**
Answer: (a) male germ cells or primordial germ cells becomes sperms.
(b) Sertoli cells/Nurse cells/Sustentacular cells providing nutrition to the surrounding germ cells.

Three marks questions

- Define human placenta, mention its functions**
 - Human placenta acts as temporary endocrine gland. Give reason**

Answer: (a) An organic connection between the mother and foetus for the purpose of physiological exchange of material is called placenta (0.5 mark)

Significance:-

 - It supplies oxygen and nutrients from the mother to the embryo.
 - It helps in the removal of CO₂ and excretory products from the foetus
 - It helps in the transport of antibodies produced in the mother to the embryo (1 mark)

(b) Human placenta acts as a temporary endocrine gland because it secrete several hormones like Estrogen, progesterone, relasim, hpL, hcG etc during pregnancy conditions. (1.5 mark)
- List out the differences between oogenesis and spermatogenesis**
Answer:

	Spermatogenesis		Oogenesis
1	It occur in the tests	1	It occurs in the ovaries
2	Spermatogonia change to primary spermatocyte	2	Oogonia change to primary oocyte
3	A primary spermatocyte divide to form two secondary spermatocyte	3	A primary oocyte divide to form one secondary oocyte and one polar body
4	A secondary spermatocyte divides to form two spermatids	4	A secondary oocyte divide to form one ootid one polar body
5	No polar body formed	5	Polar bodies are formed
6	Spermatids transform themselves into functional sperm	6	Ootid itself is the functional egg

(3 differences, each carries one mark)



9. **What is MTP? Mention an advantage and disadvantage of this technique**

Answer: Intentional or voluntary termination of pregnancy, before foetus reaches maturity is called medical termination of pregnancy.

Advantage:

1. MTPs are essential in cases, where continuation of the pregnancy could be harmful or even, fatal either to the mother or to the foetus or both

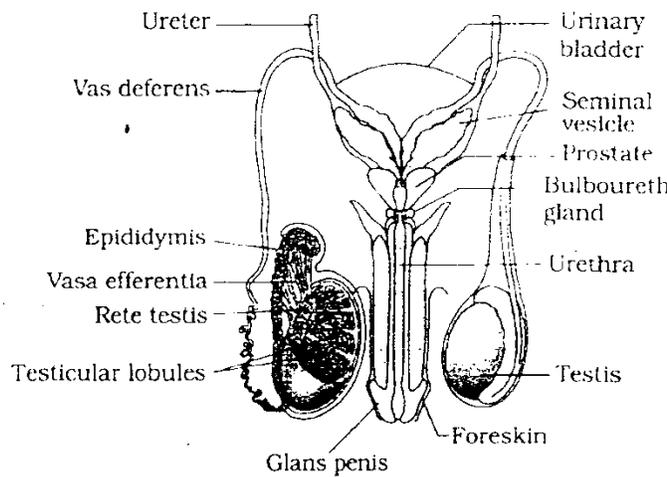
Disadvantage:-

1. It is being misused to eliminate illegal and unwanted pregnancies and indiscriminate killing of female foetus (2 mark)

Five marks questions

10. **Draw a neat diagrammatic view of male reproductive system**

Answer:



Diagrammatic view of male reproduction system

(5 marks)

11. **What is menstruation? What are the specific actions of FSH, LH, estrogen and progesterone in menstrual cycle?**

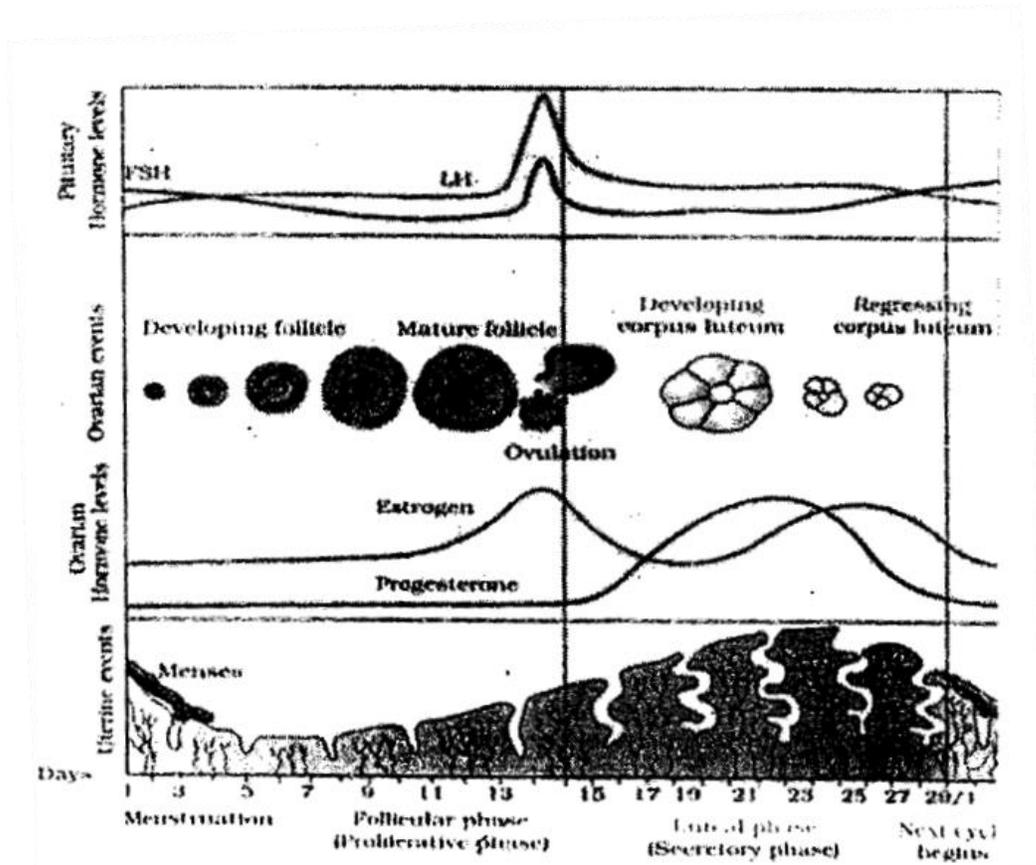
Answer: During menstrual phase of menstrual cycle which starts on 28th day, the endometrial lining of female genital tract break down due to lack of progesterone. As a result bleeding occurs. This monthly flow of blood is called menstruation. During menstrual cycle, the various change occurs in the ovary under the influences of various hormones.

1. Menstrual phase: The levels of hormone LH, FSH and progesterone is very less which results in breakdown of endometrial lining of uterus

2. Follicular phase: In this phase, the levels of pituitary hormone FSH and LH increases which causes ovarian hormone estrogen to release, FSH controls the follicular phase, it stimulates the growth of follicles. Both FSH and LH reach their peak level in middle of the cycle (14th day)

3. ovulatory phase: The level of LH hormone reaches its peak (called LH surge) induces the ruptures of mature graafian follicle and there by release of ovum

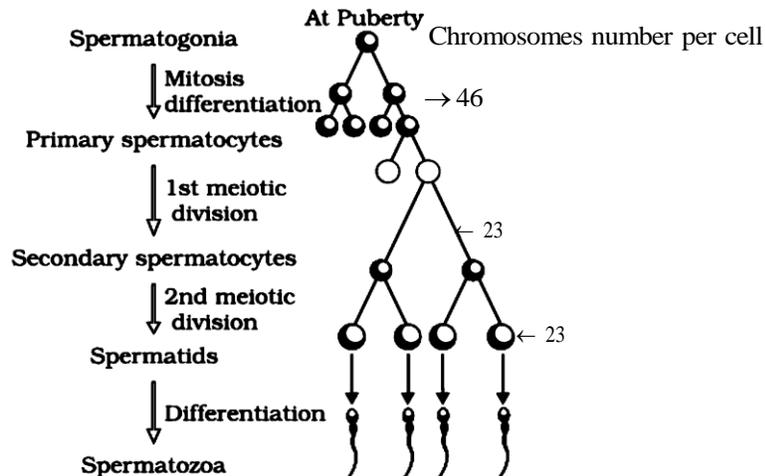
4. Luteal phase: The LH and FSH hormones begins to decline. After ovulation the follicle becomes rupture and is transformed into corpus Luteum which secrete large quantities of progesterone which maintains the endometrium. (4 marks)



(1 mark)

12. What is spermatogenesis? Explain with a schematic representation

Answer: The process of formation of sperms in the testis is called spermatogenesis. Chromosomes number per cell The process of spermatogenesis takes place in three successive steps.





(2 marks)

(1) Multiplication phase (mitosis)

(3 marks)

The primordial germ cells in the testis undergoes repeated mitotic division to form sperm mother cell or spermatogonial cell, which are diploid in nature.

(2) Growth phase:-

Some of the spermatogonial cells ($2n$) stop dividing and enter into the seminiferous tubule where they grow in size by accumulating cytoplasm and duplication of DNA. The differentiated sperm mother cells are termed as primary spermatocyte.

(3) Maturation phase (meiosis)

Each primary spermatocyte ($2n$) enter into first meiotic divisions and forms two cells with haploid number of chromosomes called secondary spermatocyte. The secondary spermatocyte undergo second meiotic division to give rise to four haploid spermatids. The spermatids are unspecialized cells and are transformed into functional sperms by a process called spermiogenesis