2 Marks Questions

9. Give reasons for the following.

(i) Why can a woman generally not conceive a child after 50 years of age?

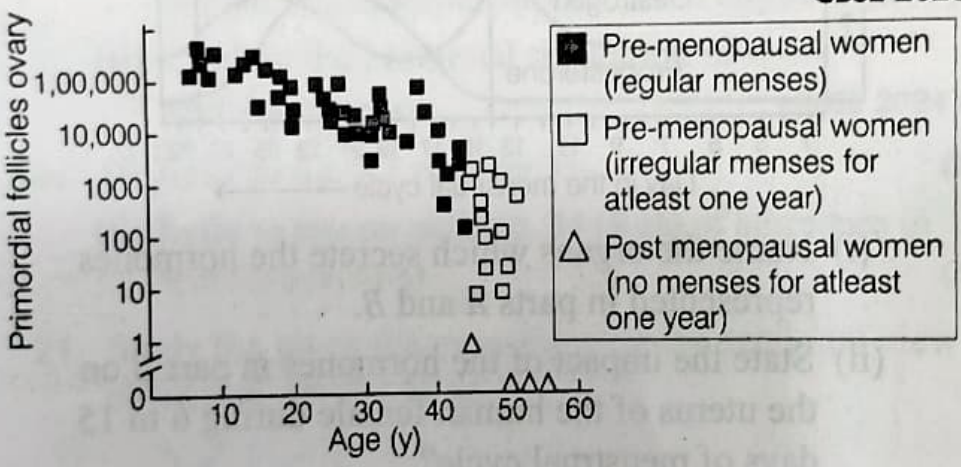
(ii) Polar bodies are formed during oogenesis and not during spermatogenesis. **CBSE 2025**

Ans. (i) A woman generally cannot conceive after 50 years of age because she undergoes menopause, a natural biological process where ovulation stops and the ovaries stop releasing eggs and producing reproductive hormones like oestrogen and progesterone. **(1)**

(ii) Polar bodies are formed during oogenesis to ensure that the mature ovum receives most of the cytoplasm, which is essential for early development after fertilisation. In spermatogenesis, all four cells formed during meiosis develop into functional sperms, so polar bodies are not formed. **(1)**

10. The graph given below shows the number of primordial follicles per ovary in women at different ages. Study the graph and answer the questions that follow.

CBSE 2023



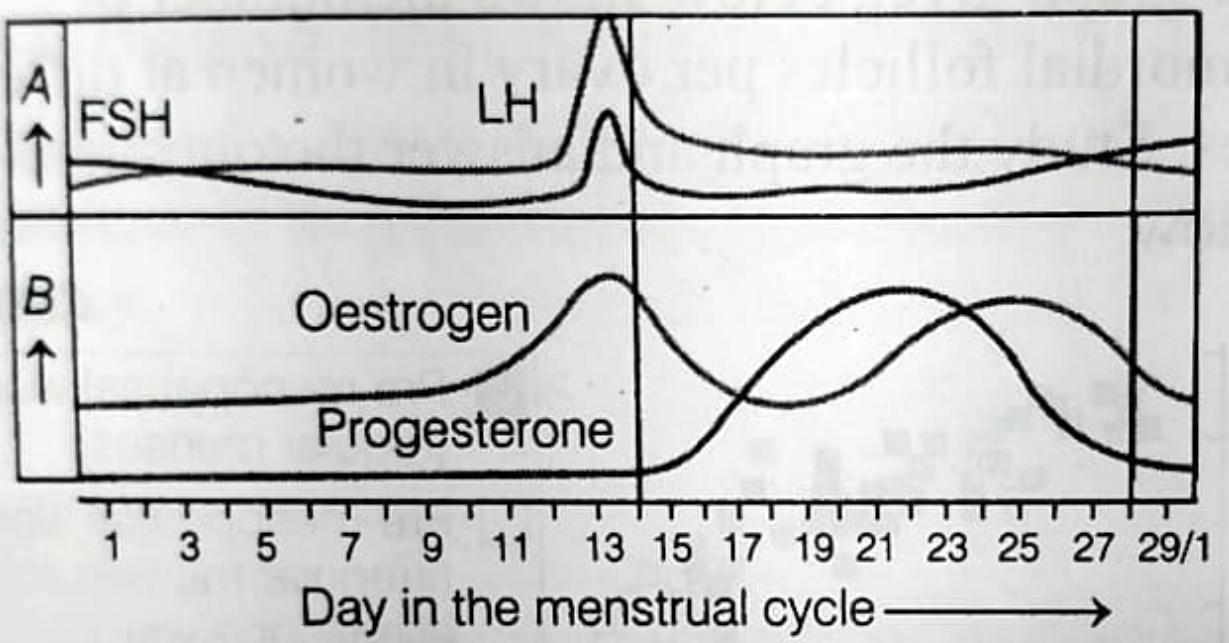
(i) What is the average age of the women at the onset of menopause?

(ii) At what age are maximum primordial follicles present in the ovary, according to the given graph?

Ans. (i) It is clear from the graph that the primordial follicles per ovary starts decreasing rapidly after the age of 35-40 years, and reaches almost zero by the age of 50 years. Therefore, the average age of women at the onset of menopause can be estimated to be around 50 years. **(1)**

(ii) According to the graph, the maximum number of primordial follicles are present in the ovary at the time of birth, where each ovary contains approximately 1 lakh follicles. **(1)**

12. In the figure given below, parts *A* and *B* show the level of hormones which influence the menstrual cycle. Study the figure and answer the questions that follow. **CBSE SQP 2021-22 Term-I**



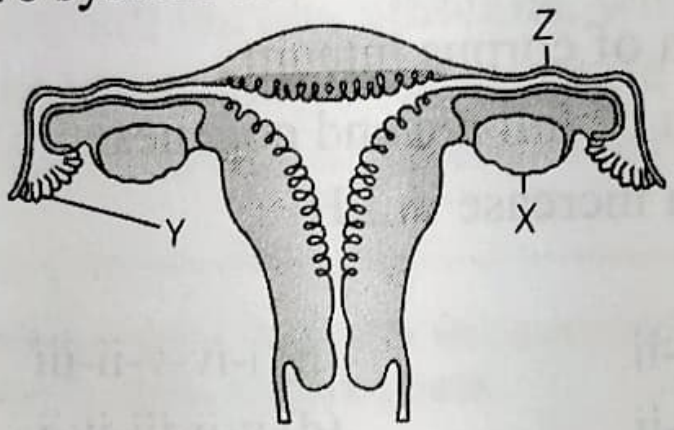
(i) Name the organs which secrete the hormones represented in parts *A* and *B*.

(ii) State the impact of the hormones in part *B* on the uterus of the human female during 6 to 15 days of menstrual cycle?

Ans. (i) Hormones represented in part *A* is secreted by pituitary gland and in part *B* is secreted by ovary. **(1)**

(ii) During 6-15 days of menstrual cycle, oestrogen stimulates the regeneration and thickening of the uterine endometrium, preparing it for implantation, while progesterone remains low and has minimal effects during the period. **(1)**

14. Given below is the diagram showing a part of the reproductive system of a human female.



(i) Identify *Y* and write its function.

(ii) Identify *Z* and write the events that may occur here.

(iii) Mention the stage at which the process of oogenesis temporarily gets arrested and name the cells thus formed in the *X* of a baby girl at the time of her birth.

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Ans. (i) *Y* is fimbriae. It helps in collection of ovum after ovulation.

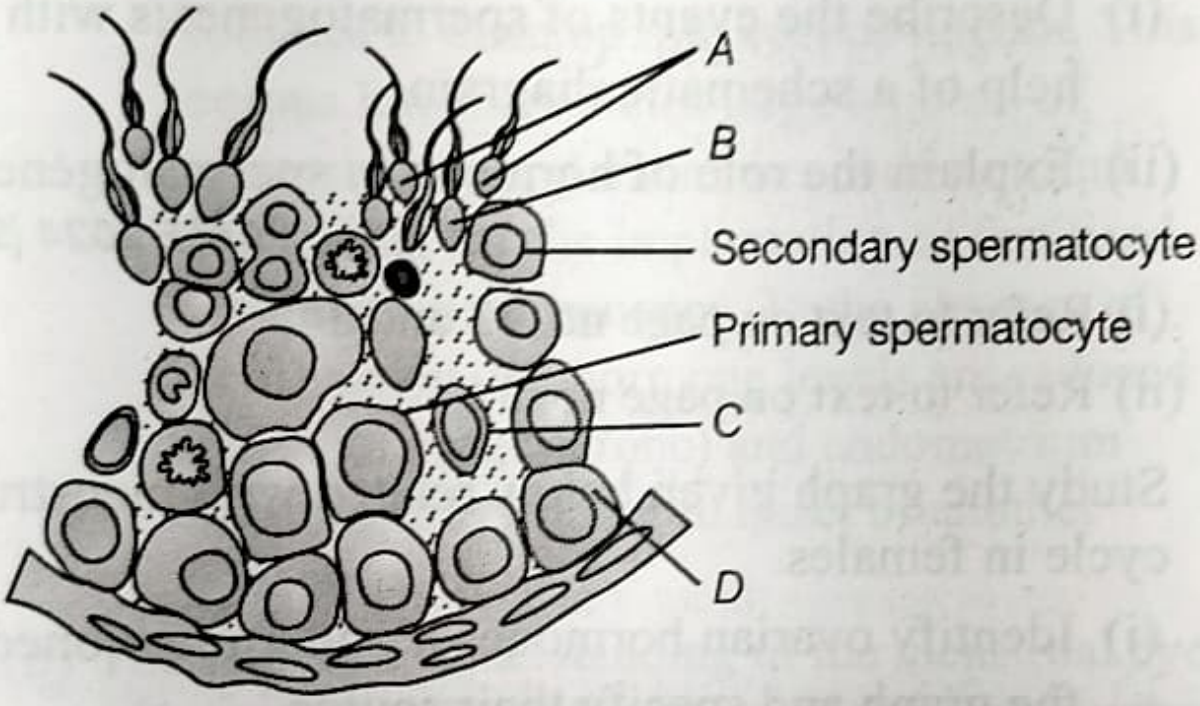
(ii) *Z* is ampulla.

This is the part of Fallopian tube, where the sperm fuses with the ovum to form a zygote.

(iii) The process of oogenesis temporarily gets arrested at the prophase-I of meiosis-I.

Primary oocytes are formed in the ovary (*X*) of a baby girl at the time of her birth.

21. Study the given diagram showing the sectional view of a seminiferous tubule.



Answer the following questions.

(i) Label *A*, *B*, *C* and *D* in the figure.

(ii) What will be the number of chromosomes in secondary spermatocyte and spermatid, respectively?

(iii) Explain the terms – Spermiogenesis and Spermiation.

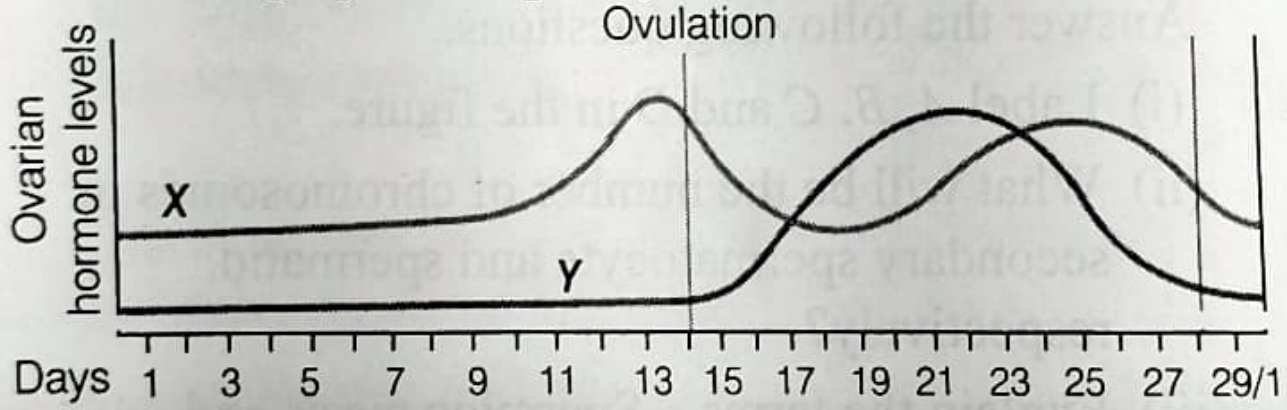
Ans. (i) Label *A*, *B*, *C*, and *D* in the figure

- *A* – Spermatid
- *B* – Secondary spermatocyte
- *C* – Primary spermatocyte
- *D* – Spermatogonium

(ii)
- **Secondary Spermatocyte** 23 chromosomes (haploid, *n*)
- **Spermatid** 23 chromosomes (haploid, *n*)

24. Study the graph given below related with menstrual cycle in females.

(i) Identify ovarian hormones *X* and *Y* mentioned in the graph and specify their source.



(ii) Correlate and describe the uterine events that take place according to the ovarian hormone levels *X* and *Y* mentioned in the graph on

(a) 6–15 days

(b) 16–25 days

(c) 26–28 days (when ovum is not fertilised)

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Ans. (i) *X* is oestrogen secreted by growing follicles and *Y* is progesterone secreted by corpus luteum. **(2)**

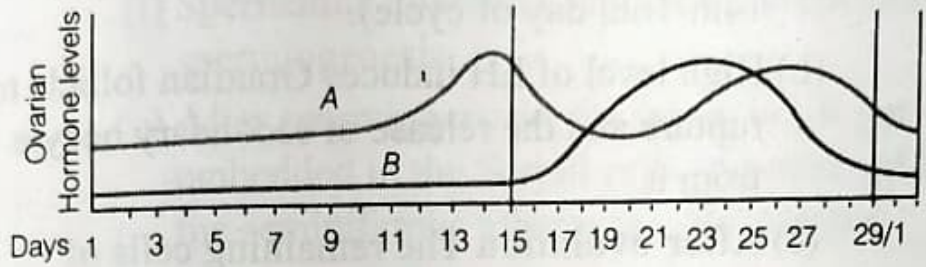
(ii) Uterine events that take place according to the ovarian hormone levels *X* and *Y* on.

(a) **6-15 days** endometrium of the uterus regenerates by proliferation under the influence of oestrogen.

(b) **16-25 days** under the influence of progesterone the endometrium of the uterus is maintained for implantation of fertilised ovum and other events of pregnancy.

(c) **26-28 days** (when ovum is not fertilised) In the absence of fertilisation, corpus luteum degenerates which causes disintegration of endometrium leading to menstruation, marking a new cycle. **(3)**

27. The graph given below shows the variations in the levels of ovarian hormones during various phases of menstrual cycle.



(i) Identify *A* and *B*.

(ii) Specify the source of the hormones marked in the diagram.

(iii) Reason out why *A* peaks before *B*.

(iv) Compare the roles of *A* and *B*.

(v) Under which condition will level of *B* be continue to remain high on the 28th day?

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Ans. (i) *A* is hormone oestrogen.

B is hormone progesterone.

(ii) Oestrogen is secreted by the granulosa cells of growing ovarian follicles. Progesterone is secreted by corpus luteum.

(iii) Oestrogen peaks before progesteron because it is secreted during follicular growth, while progesterons is secreted after ovulation by the corpus luteum.

(iv) **Oestrogen** hormone brings about changes in the lining of endometrium through its proliferation.

Progesterone hormone maintains endometrium for implantation of the fertilised ovum.

(v) The level of progesterone will continue to remain high on the 28th day of menstrual cycle if fertilisation and implantation have occurred. This is because the corpus luteum is maintained by hCG (human Chorionic Gonadotropin) secreted by the developing embryo and it continues to secrete progesterone to maintain the uterine lining of pregnancy.

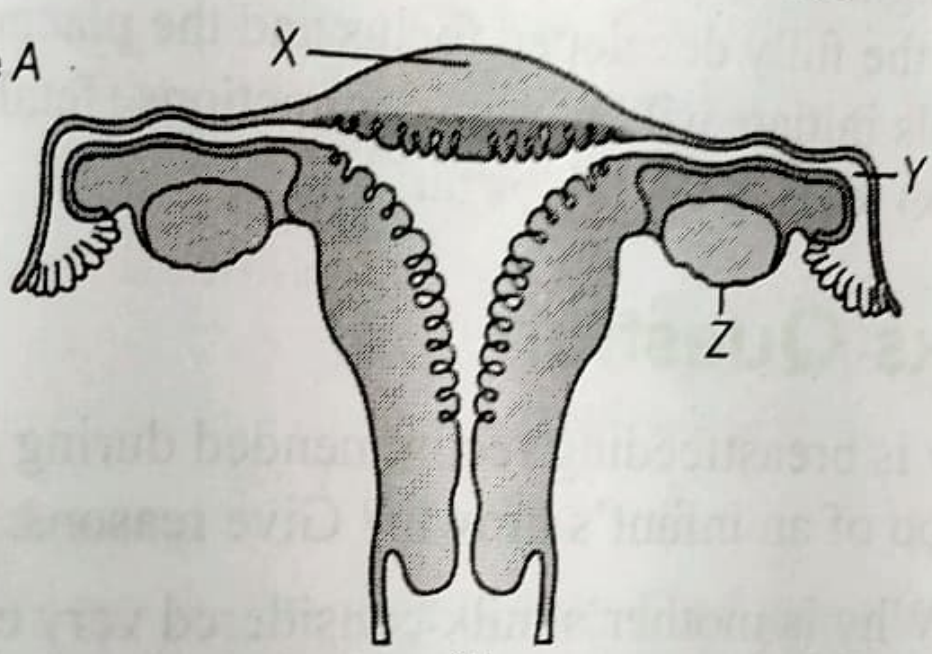
(1 × 5)

1 Mark Questions

Multiple Choice Questions

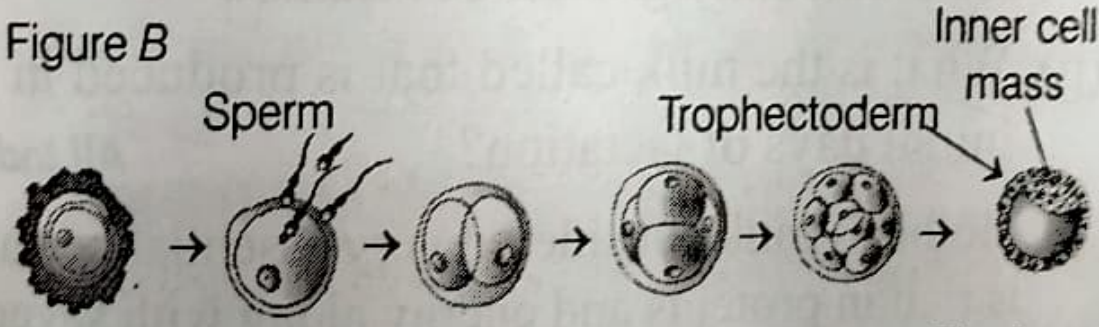
1. Figure *A* shows the front view of the human female reproductive system and figure *B* shows the development of a fertilised human egg cell.

Figure *A*



(*A*)

Figure *B*



(*B*)

Identify the correct stage of development of human embryo (Figure B) that takes place at the site *X*, *Y* and *Z*, respectively in the human female reproductive system (Figure *A*).

Choose the correct option from the table below.

	X	Y	Z
(a)	Morula	Fertilised egg	Blastocyst
(b)	Unfertilised egg	Fertilised egg	Morula
(c)	Blastocyst	Fertilised egg	Unfertilised egg
(d)	Fertilised egg	Morula	Blastocyst

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Ans. (c) Blastocyst, fertilised egg, unfertilised egg.

2. Which of the following statements are correct with respect to hormones secreted by placenta?

(i) Placenta secretes relaxin during later stage of pregnancy.

(ii) Placenta secretes high amount of FSH during pregnancy.

(iii) Placenta secretes relaxin during initial stage of pregnancy.

(iv) Placenta secretes hCG and hPL during pregnancy.

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(a) (i) and (iv)
(b) (i), (ii) and (iv)
(c) (iii) and (iv)
(d) (ii), (iii) and (iv)

Ans. (a) (i) and (iv)