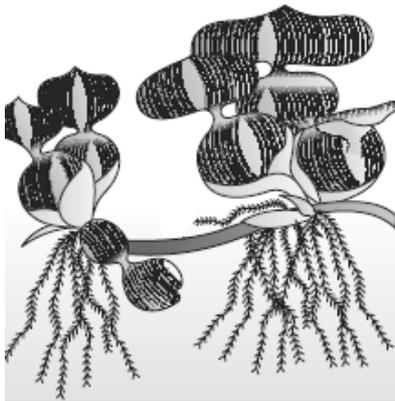


UNIT-VI
REPRODUCTION

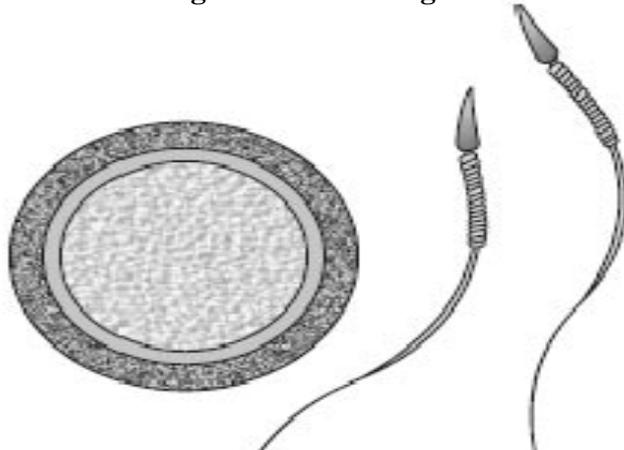
Chapter-1 REPRODUCTION IN ORGANISMS

ONE MARK QUESTIONS:

1. Some organisms reproduce to produce genetically similar individuals.
What is the type of reproduction do they follow? Why are the individuals genetically similar?
2. How is gemma cup and gemmules differ from each other?
3. How is a nodal segment in sugarcane helpful as a reproductive unit?
4. How is vegetative propagation related to the following plants?



5. Why are the following called as heterogametes? Give an example.



6. Do haploid organisms have meiosis in their lifecycle? If yes, state when does it occur?
7. What is common among earthworm, leech and sponge?
Hint: with regard to reproductive organs.
8. Why do plants like bryophytes and pteridophytes produce a large number of male gametes?
9. Flowering varies from plant to plant. Give 2 examples in support of this statement.
10. Fertilization results in the production of zygote. Zygote is called as a vital link. Why is it called so?
11. If a branch “dasher mango” is grafted on a tree producing “desi mangoes” what type of mangoes will be borne on grafted branch & other branches of the plant?
12. Most sugarcane varieties cultivated today are aneuploids and are sterile. But they grow and perform extremely well. Sterility in sugarcane is not of any disadvantage. Why?
13. Why do organisms like algae and fungi which normally adopt asexual reproduction switch over to sexual method of reproduction just before the onset of adverse conditions?
14. In a culture there is a mixture of haploid and diploid cells. It must be because of-
a) Generative cells b) Vegetative cells c) another wall d) pollen cells.

TWO MARKS QUESTIONS:

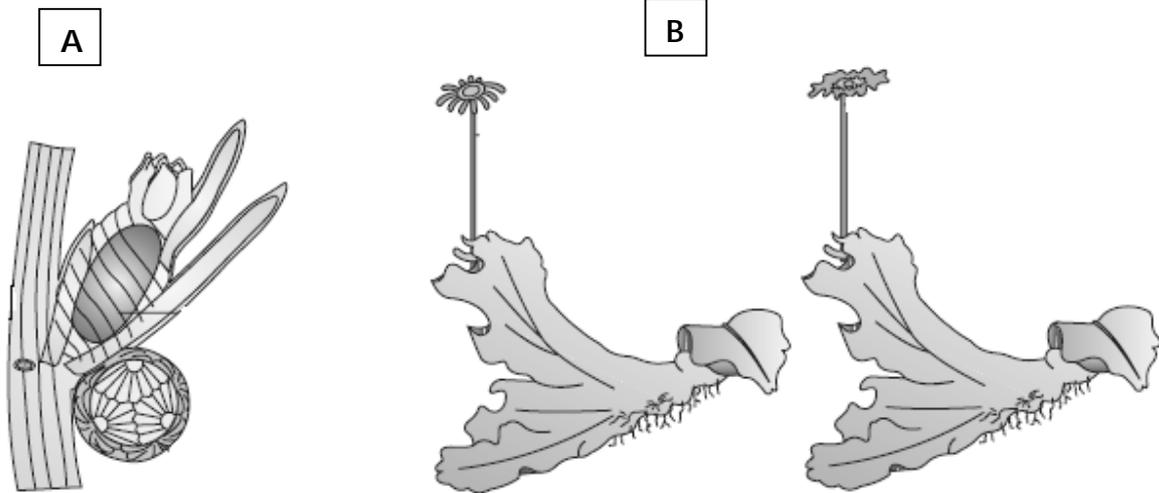
1. Fill in the missing columns:

COLUMN A	COLUMN B
Penicillium	A
Hydra	B
C	Gemmules
D	Bulbils

2. Give the chromosome number in the gametes of the following, if the number of chromosomes in their meiocytes is as follows:

- i.) Dog-78 ii) Rice – 24 iii) Housefly – 12 iv) Butterfly -380

3.



- i) Identify the given plants.
- ii) How are they different from each other with regard to reproductive organs they possess.

4. Reptiles and frogs are oviparous animals; yet they differ in certain aspects of reproduction. Bring out the differences and mention which of the two animals has more advantage. Give one reason.

5. Name a plant where vegetative propagation occurs from reproductive organ. What is the special name of the reproductive part of the plant?

6. In non-primate mammals like cows, sheep, rats, deer etc, the cyclical changes that occur during reproduction are called oestrus cycle whereas in primates it is called as menstrual cycle. How can we distinguish between them?

Ans:

Oestrus cycle	Menstrual cycle
The interval between two successive cycles varies between a few months to over a year.	The interval between two successive cycles is about 4 weeks
Strong irresistible urge during oestrus	No such resistable sex urge
No blood loss	Blood loss occurs
The sloughed off lining of reproductive tract is reabsorbed	The sloughed off lining of reproductive tract is expelled during menstruation

7. Do you agree with the statement only asexual reproduction can give rise to individuals resembling their parent? Support your answer with an example.

Ans: Parthenogenesis/ Rotifers, honeybees-unfertilized eggs-develop into adults.

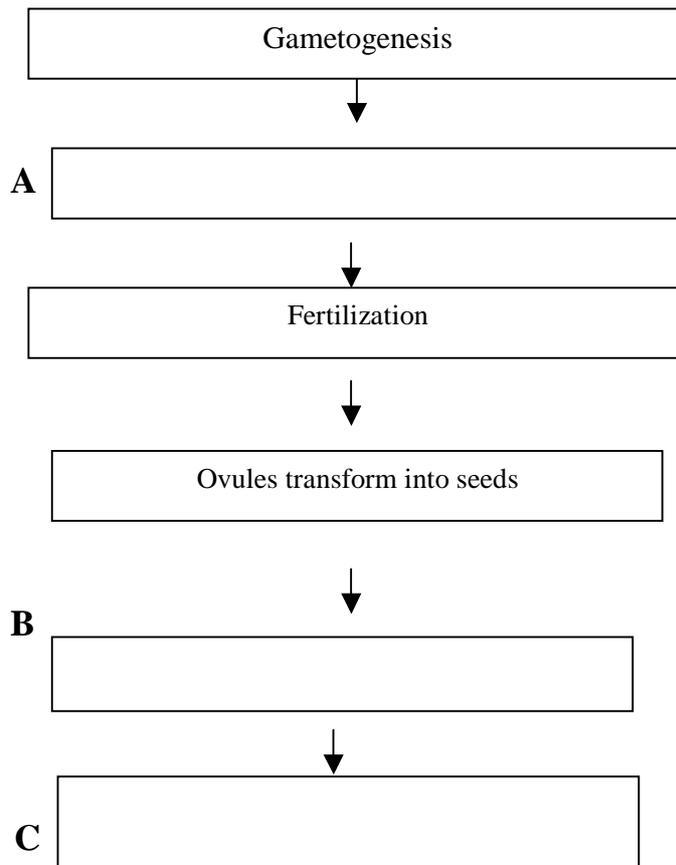
8. Categorise the following plants based on the floral characteristics:

Hibiscus, Cucumber, Papaya, Guava.

9. Sexual reproduction involves fertilization and the formation of embryo. What are the critical events needed for the successful reproduction process.

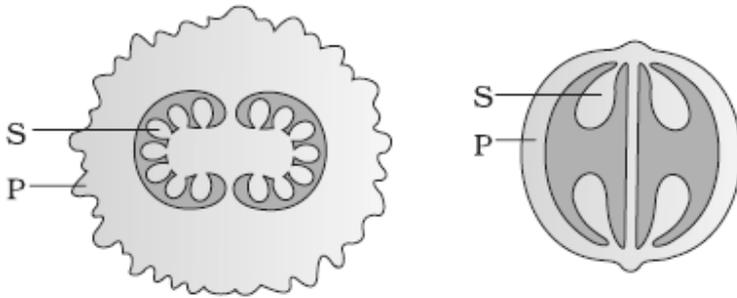
THREE MARKS QUESTIONS:

1. In a pond ecosystem you may find the plant with purple flowers that spread very fast to cover the entire pond within a short span of time. How does it spread? How does it harm the aquatic body?
2. Can we consider simple cell division as a method of reproduction? What will you call this kind of reproduction? Give two examples in support of your answer.
3. Complete the flowchart with reference to the reproduction of flower.



FIVE MARKS QUESTIONS:

1. Study the following diagram and answer the questions given below:

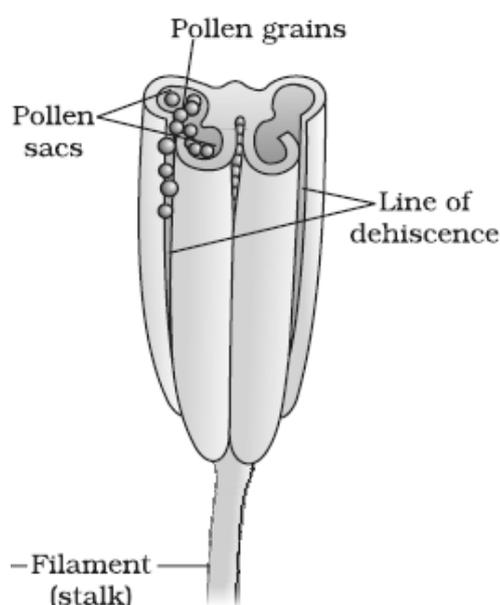


- i. What does S and P denote?
 - ii. Where do they develop from?
 - iii. What is the term given to the point of attachment of the ovules in the fruit?
 - iv. What is the ploidy of embryo and the tissues in the ovary?
 - v. What is the function of fruit apart from storage of materials?
2. Fertilization leads to the formation of embryo.
- i. Give the technical term for the development of embryo.
 - ii. What are the events that occur during embryo development?
 - iii. The development of zygote depends on two factors. What are they?
 - iv. How will you categorise animals based on the development of zygote inside or outside the female body?
 - v. How does zygote in fungi and algae overcome desiccation?

Chapter-2 SEXUAL REPRODUCTION IN PLANTS

ONE MARK QUESTIONS:

1. An embryo sac formed directly from a nucellar cell. What is it called?
2. Can snails pollinate the flowers? What do you call such a pollination
Ans: Yes, Malacophily
3. Brightly coloured, scented flowers are pollinated by insects. How is it known as technically?
4. Study the following diagram and answer the question given at the end.



The anther dehisces in the line of dehiscence. State any two methods of dehiscence of anther.

Ans: By longitudinal introse, longitudinal extrose, by apical pores, by transverse splitting (any two)

5. The most biologically resistant material is seen in plants. Where do you see it in plants? What is it called?
6. What is the technique employed to preserve pollen grain for germplasm collection?
7. What are pollen baskets?

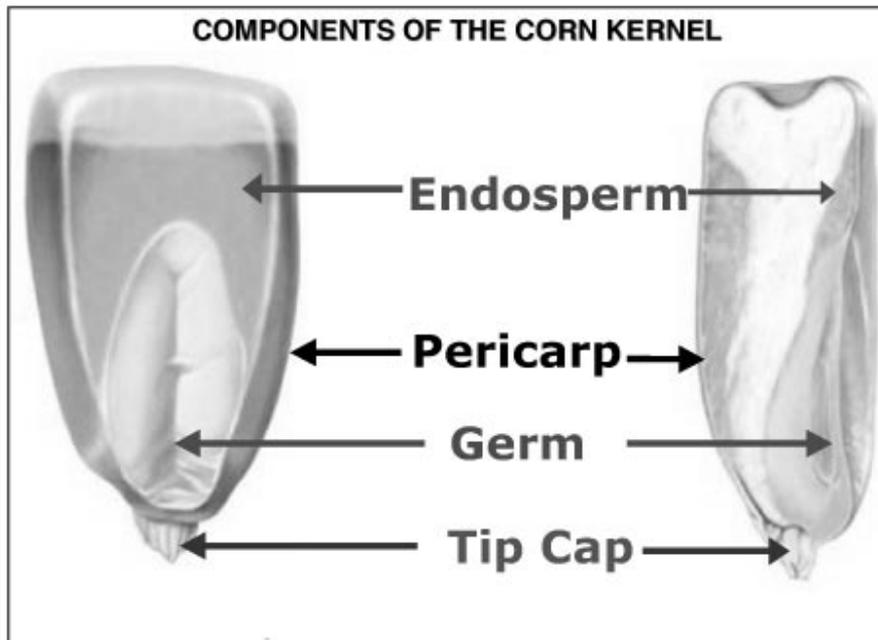
Bees- special structures- gather pollen

8. All the aquatic plants cannot use water for pollination - do you agree with this statement? Why?

9. Some plants have a mechanism of shedding of pollen before the maturation of stigma. Why?

Hint: Refer Outbreeding devices.

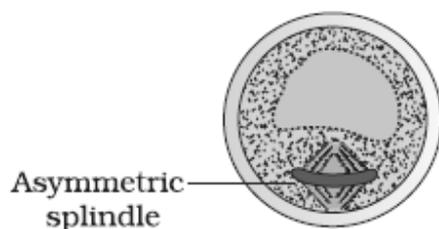
10. How does the production of unisexual flowers prevent self-pollination?



11. From the above diagram , find out which regions form the bran.

Ans: Pericarp + Tip cap

12. The following diagram depicts a stage in the development of a pollen grain. The asymmetric spindle produces two cells. Name the cells.



TWO MARKS QUESTIONS:

1. “Incompatibility is a natural barrier in the fusion of gametes” .Justify the statement.

2. Note the relationship between the first two words and suggest a suitable word for the fourth place

a) Euphorbia : Cyathium : Ocimum : _____

b) Mango : Eucarp : apple: _____

3. Give reason :

a. Angiosperms show the process of double fertilization.

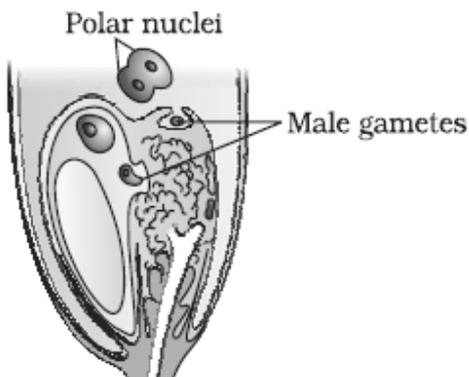
b. Flowers in Salvia plants show stamens with lever mechanisms.

Ans: a) syngamy, triple fusion – formation of endosperm, nurture the growing embryo

b) The anther lobes are separated by a long connective. One of the anthers is sterile

4. How would you explain seed set in papaya in the absence of male plant in close vicinity of a female plant?

5. Observe the following diagram and answer the questions given at the end



a. Why should the polar nuclei fuse?

b. What facilitates the entry of male gamete into the ovule?

6. If a certain plant when introduced into a new environment neither produces seeds nor it responds to vegetative propagation. How can more plants be produced?

Hint: Tissue culture, meristem can be used.

7. In what ways does the study of pollination enrich our understanding of Biology and enable us to apply it for increasing crop productivity?

THREE MARKS QUESTIONS:

1. What is the fate of the following in the development of fruit and seed ?
 - a. Ovary wall –
 - b. Funicle –
 - c. Integuments –
2. Pollination and seed formation are very crucial for fruit formation. How will you explain this statement?

Hint: Pollination –prevents abscission of ovary, Auxins from pollengrain –initial development of ovary, seed- all phytohormones- fruit development.

3. “Apomictic genes are trying to be inserted in hybrid varieties” –Explain

Refer page 39 of NCERT text book.

4. List any three mechanisms plants follow to overcome inbreeding depression.

FIVE MARKS QUESTIONS:

1. a) “Dehydration of seed increases their shelf life” – Explain (2)
 - b) Cleistogamous flowers are strictly self pollinating,” Explain. What is the disadvantage of this phenomenon? (2)
 - c) Even after killing the generative cell with a laser beam, the pollen grain of a flowering plant germinates and produces normal pollen tube. How does it happen?

HUMAN REPRODUCTION

ONE MARK QUESTIONS:

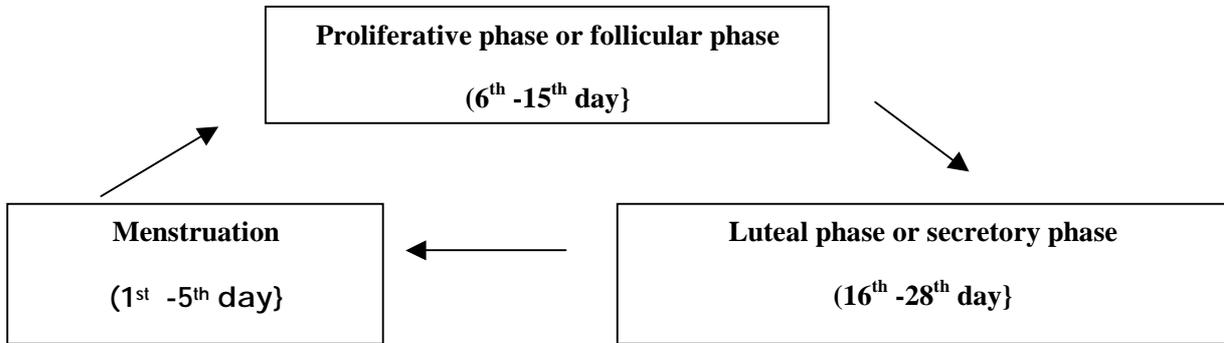
1. Production of sperms requires low temperature. How is it accomplished in human body?
2. How many sperms are approximately present in an ejaculate of human male? What proportion of them should have normal size and shape?
3. What is the number of chromosomes in the following cells of human male?
a) Spermatids b) Sertoli cells
4. A spermatogonial cell has 30 chromosomes. How many chromosomes will be formed in
a) The primary spermatocyte b) a spermatid derived from the cell?
5. Why is cleavage in a mammalian zygote referred to as holoblastic?
6. How many autosomes and allosomes are found in a single matured human sperm?
7. Name the developmental stage in humans which gets implanted in uterine wall?
8. Why is colostrum essential for an infant?
9. Sometimes the doctor injects some medicine into the body of a woman to induce uterine contractions and delivery. What do you think that the doctor has injected?
10. Not all copulations result in pregnancy. Give a reason.

TWO MARKS QUESTIONS:

1. Suppose the acrosome of mammalian spermatozoa does not function normally, how would it affect fertilization? Give reasons.
2. An ovum allows the entry of only one sperm at a time. Why?
3. Blood of mother never mixes up with that of foetus. Yet it nourishes the foetus. How?
4. What is gynaecomastia? What is its cause during neonatal period?
(Hint: Klinefelters syndrome)
5. Explain why there is no menstrual cycle before puberty, after menopause and during pregnancy.

THREE MARKS QUESTIONS

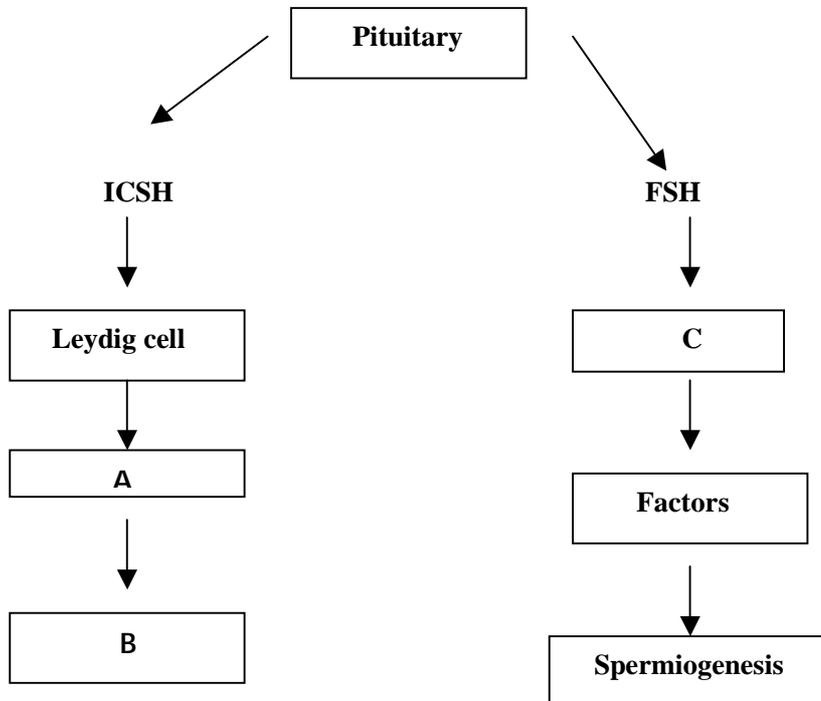
1. The events of the menstrual cycle are represented below. Answer the questions following the diagram



a. State the levels of FSH, LH and progesterone simply by mentioning high or low around 13th, 14th day and 21st to 23rd day.

b. In which of the above mentioned phases does the egg travel to the fallopian tube?

2. Given below is an incomplete flow chart showing influence of hormones on gametogenesis in males. Observe the flow chart carefully and fill in the blanks A, B and C.



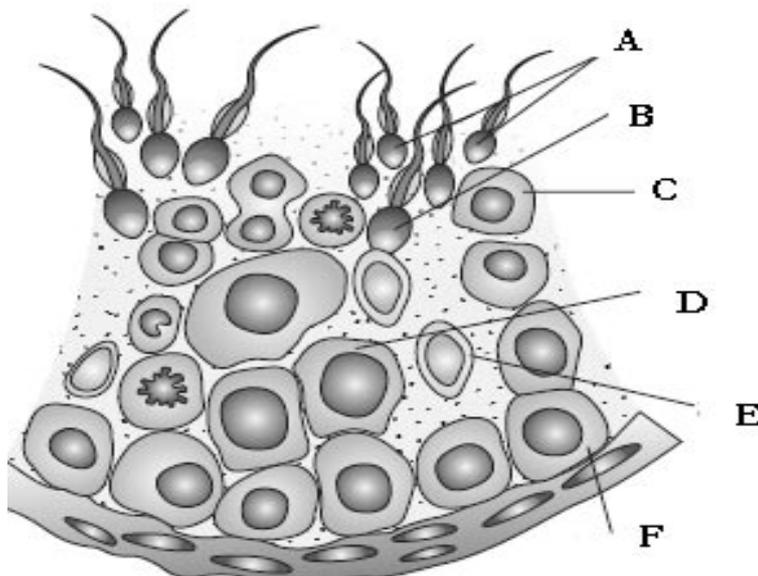
3. a) In which part of human female reproductive system do the following events take place?

- i. Release of 1st polar body
- ii. Release of 2nd polar body
- iii. Fertilization
- iv. Implantation

b) From where do the signals for parturition originate and what does maternal pituitary release for simulating uterine contraction for child birth?

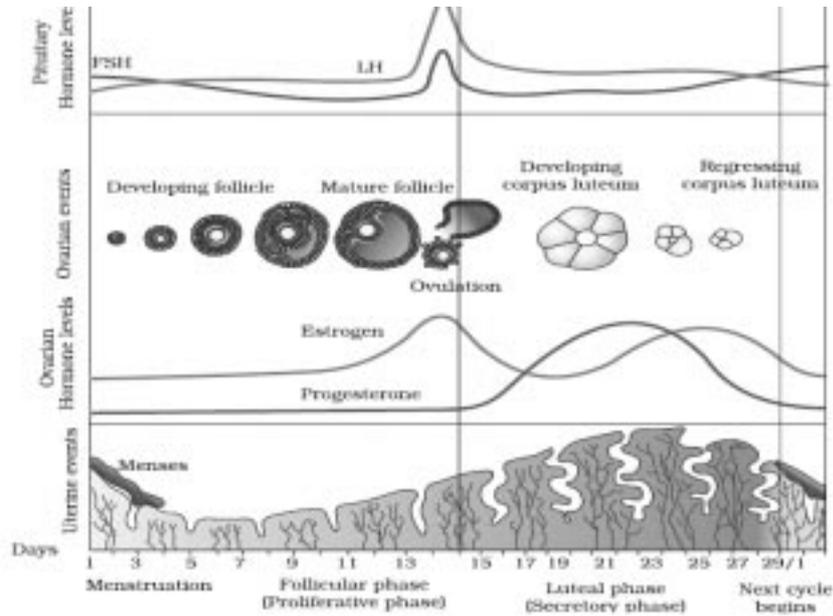
FIVE MARKS QUESTIONS

1. Study the following diagram and answer the following questions:



- a) Label the parts A,B,C,D,E and F
- b) How does D differ from F?
- c) What is the function of E?

2. Study the diagram and answer questions that follows:



- What is the role of corpus luteum in menstrual cycle?
- Why is luteal phase otherwise called as secretory phase?
- How is estrogen related to menstrual cycle?
- How does FSH and LH regulate the menstrual cycle?

CHAPTER-4 REPRODUCTIVE HEALTH

ONE MARK QUESTIONS:

- What was the old name given for the programme RCH of today? When was it initiated in India?
- As long as the mother lactates fully, chances of conception are almost nil-Why?
- Removal of gonads cannot be considered as contraceptive options, why?
- Is it necessary to ban amniocentesis? Why?
- LNG-20 is a type of IUD. In what additional way does it function as a contraceptive?
- As a student of biology what would you suggest for the couple who does not have any children?

TWO MARKS QUESTIONS:

1. Is sex education necessary in schools? If so why?
2. Give reasons
 - a.) Surgical methods of contraception cannot prevent gamete formation
 - b.) Oral pills are popular contraceptives among rural women.
3. Is the use of contraceptives justified? Give reasons.
4. What are GIFT and ZIFT in relation to ART?
5. Can MTP be permitted? If not why?
6. A couple who was unable to bear a child, on clinical examination revealed that the wife was unable to produce a normal egg. How would you advise the infertile couple to have children?
7. If a woman is using a copper T, will it protect her from sexually transmitted diseases? Why?

THREE MARKS QUESTIONS:

1. Why is it essential to have clean sexual habits?
2. Embryo transfer is one of the methods of ART. What are the different types of embryo transfer?
3. Which is the best method of birth control? Explain giving reasons.
4. A woman who was pregnant (8 weeks), on clinical examination was found to have conceived a defective foetus with a serious genetic defect.
 - 1) With what test would the doctor have confirmed the genetic defect.
 - 2) What suggestive measure would you recommend?
 - 3) Name any one complication associated with this technique.