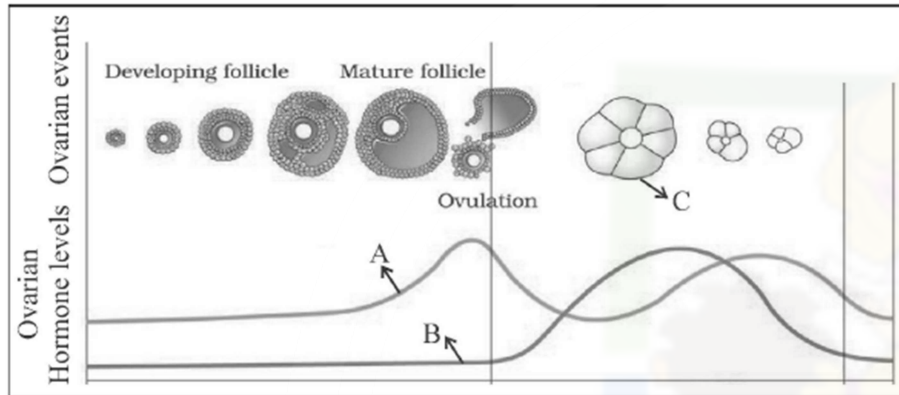


III. Answer any 3 questions from 16 to 19. Each carries 3 scores. (3 x 3 = 9)

16. Observe the diagrammatic presentation of various events during a menstrual cycle



- Identify 'A' and 'B' in graph
 - Identify the structure 'C' and write its function.
 - Which pituitary hormone is secreted in its maximum level during the time of ovulation ?
17. Cross between Red flower (RR) and white flower (rr) bearing plants of Snapdragon produced all plants with pink flowers in F₁ generation.
- Name the genetic phenomenon of this cross.
 - Illustrate F₂ generation of this cross using Punnet square
18. There are several method of in vitro fertilisation to assist couples who lack the ability of fertilisation.
- Give the popular name of the programme
 - Suggest two techniques of in vitro fertilisation and explain the procedure adopted in that programme
19. Mendel conducted so many genetic crosses in pea plant
- Diagrammatically represent a monohybrid cross between Tall and dwarf pea plant
 - Name and state the law proposed by Mendel based on dihybrid cross

Name of School.....

First Term Examination Aug.2025

Biology-Botany

Time: 2hrs

Plus Two

Score: 60

Answer any 3 questions from 1 to 5. Each carries 1 score.

- First restriction endonuclease enzyme is.....
- In rDNA technology the DNA fragments can be separated by technique called.....
- Fruit developed without fertilisation are called.....
- Name the female gametophyte in angiosperm.
- Name the enzyme used to join DNA fragments in rDNA technology.

Answer any 9 questions from 6 to 16. Each carries 2 scores.

- Isolation of DNA from plant cell involves many steps. Explain the different steps.
- Water pollinated flowers have many peculiarities. Write down any four such peculiarity.
- Multiple copies of gene of interest can be synthesised through PCR. Expand PCR and write its steps.
- What are palindromic DNA nucleotide sequences? Write one example for palindromic sequence.
- In angiosperms during fertilization two types of fusion occur in the embryo sac. a) Name the types of fusion b) Which are the nuclei involved in each fusion
- Define microsporogenesis. Write the ploidy of microspore
- Write any four devices to discourage self pollination and to encourage cross pollination in flowering plants.
- The DNA fragments can be separated using gel electrophoresis. Name the gel used in this technique and write the name of technique used to

remove the DNA from the gel.

14. In certain seeds more than one embryo can be seen. Name this condition and give an example.

15. Origin of replication and selectable markers are the two important features required for a cloning vector. Explain their role in facilitating cloning.

16. Different stages of development in dicot embryo are there. Arrange them in the correct sequential order.

Answer any 3 questions from 17 to 20. Each carries 3 scores.

17. Microsporangium is surrounded by four wall layers

a) Name the four wall layers. b) Write the function of these layers.

18. EcoRI is an example of restriction endonuclease enzyme.

a) Name the bacteria from which EcoRI is isolated. b) Explain the naming procedure of EcoRI.

19. Define the following terms

a) Autogamy b) Geitonogamy c) Xenogamy

20. Recombinant DNA technology is a complex process which involves several steps. Write down the major steps in recombinant DNA technology.

Biology-Zoology

I. Answer any 3 questions from 1 – 4. Each carries 1 score. (3 x 1 = 3)

1. The milk produced during the initial few days of lactation is called _____

2. Different contraceptive methods are given below. Pick out the odd one.

(a) Cu T (c) Multiload 375 (b) Saheli (d) Lippes loop

3. ZZ-ZW Mechanism of sex determination is seen in

4. During luteal phase of menstrual cycle, Graafian follicle transforms into _____.

II. Answer any 9 questions from 5 – 15. Each carries 2 scores. (9 x 2 = 18)

5. Different contraceptive methods are used to control population explosion. Summarise the natural method and barrier method of contraception.

6. What are IUDs? Name one copper releasing and one hormone releasing IUDs

7. Infections or diseases which are transmitted through sexual intercourse are collectively called sexually transmitted infections

(a) Name any two STIs. (b) Suggest any two methods to prevent STIs.

8. Find the odd one out. Justify your answer.

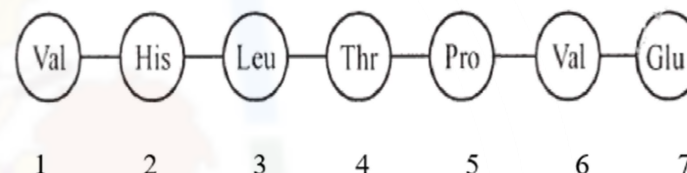
Down's syndrome, Turner's syndrome, phenylketonuria, Klinefelter's syndrome.

9. Presence of an additional copy of chromosome 21 was observed in a person during diagnosis.

(a) Identify the genetic disorder

(b) Write the characteristic features of this disorder.

10. Examine the following fragment of beta globin chain in human haemoglobin and identify the hereditary disease with reason



11. If a father is with 'O' blood group and mother is with 'B' blood group, Write the possible blood groups of their children.

12. Placenta also acts as an endocrine tissue and produces several hormones. (a) Name any two placental hormones.

(b) Write two functions of Placenta.

13. Write the functions of the following structures in human reproduction

a) Leydig cells b) Corpus luteum

14. Write any four differences between Spermatogenesis and Oogenesis.

15. Observe the diagram of female reproductive system and name the parts labelled 'A', 'B', 'C', & 'D'

