



विद्या सर्वार्थ साधिका

ANANDALAYA  
PERIODIC TEST - 1  
Class: XII

Subject: Biology (044)  
Date : 22-07-2024

MM : 40  
Time: 1 Hr. 30 min.

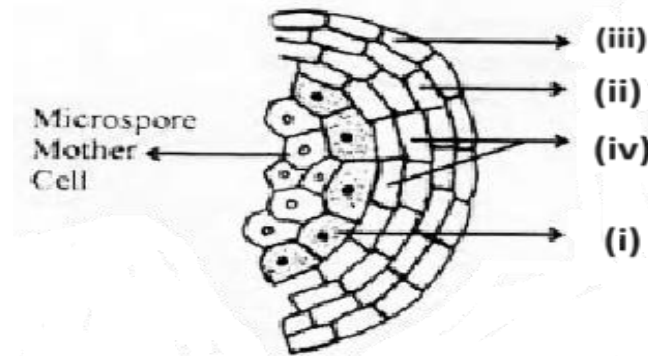
**General Instructions:**

1. There are 20 questions in all. All questions are compulsory.
2. This question paper has five sections: Section A, Section B, Section C, Section D and Section E. All the sections are compulsory.
3. Section A consists of 10 MCQs and 2 Assertion and Reason questions of 1 mark each, Section B consists of two questions of 2 marks each, Section C consists of two questions of 3 marks each, Section D consists of two long questions of 5 marks each and Section E consists of two case study-based questions of 4 marks each.
4. There is no overall choice. However, an internal choice has been provided in sections D and E. You must attempt only one of the choices in such questions.
5. Draw neat diagrams wherever necessary.

**SECTION A**

1. Megasporogenesis occurs \_\_\_\_\_ (1)  
 (A) inside the nucellus (B) outside the nucellus  
 (C) inside the funiculus (D) at the raphe

2. In the figure of a transverse section of a young anther choose the labelling showing the correct placement of the wall layers from the table given below: (1)



|     | (i)           | (ii)          | (iii)         | (iv)          |
|-----|---------------|---------------|---------------|---------------|
| (A) | Epidermis     | Middle layers | Tapetum       | Endothecium   |
| (B) | Tapetum       | Endothecium   | Epidermis     | Middle layers |
| (C) | Endothecium   | Tapetum       | Middle layers | Epidermis     |
| (D) | Middle layers | Epidermis     | Endothecium   | Tapetum       |

3. In humans, the growth, maintenance, and functions of gonads are regulated by \_\_\_\_\_. (1)  
 (A) Growth hormones (B) Thyrotrophic hormones  
 (C) Progesterone (D) FSH and LH

4. Which of the following undergoes cyclic changes during different phases of menstrual cycle? (1)  
 (A) Oviducts (B) Vagina (C) Uterus (D) External genitalia

5. Which of the following is not the function of the placenta? (1)  
 (A) secretes relaxin (B) supplies oxygen and nutrients  
 (C) secretes oxytocin (D) facilitates the removal of nitrogenous waste

6. While planning for an artificial hybridization programme involving dioecious plants, identify the irrelevant step from the given: (1)  
 (A) Emasculation (B) Dusting of pollen on the stigma  
 (C) Bagging of the female flower (D) Collection of pollen
7. Identify the most effective means of birth control from the given options: (1)  
 (A) Intra Uterine Device (B) Chemical method  
 (C) Sterilization method (D) Barrier method
8. The disease that cannot be sexually transmitted is \_\_\_\_\_. (1)  
 (A) Gonorrhoea (B) Syphilis (C) Chlamydiasis (D) Candidiasis
9. A specialised procedure to form an embryo in the laboratory in which sperm is directly injected into the ovum is \_\_\_\_\_. (1)  
 (A) IUI (B) ICSI (C) IUT (D) ZIFT
10. Apple is a false fruit as it grows from the \_\_\_\_\_. (1)  
 (A) ectocarp (B) mesocarp (C) endocarp (D) thalamus

For questions 11 and 12, two statements are given, one labelled Assertion and the other labelled Reason. Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below.

- (A) Both A and R are true and R is the correct explanation of A.  
 (B) Both A and R are true but R is not the correct explanation of A.  
 (C) A is true but R is false.  
 (D) A and R are false.

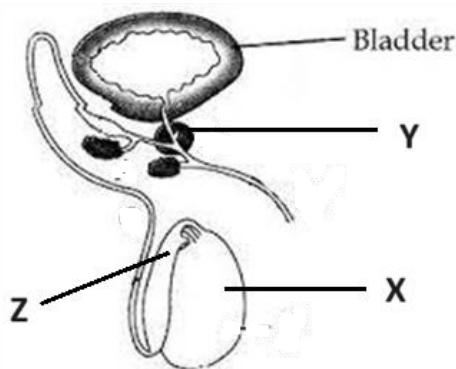
11. Assertion (A): Lactational amenorrhea is the natural method of contraception. (1)  
 Reason (R): It increases the phagocytosis of sperm.
12. Assertion (A): In humans, one functional female gamete is formed from each primary oocyte cell. (1)  
 Reason (R): Meiosis in each primary and secondary oocyte gives rise to only one ovum.

### SECTION B

13. List the parts of the human oviduct in sequence through which the ovum travels till it meets the sperm for fertilisation. (2)
14. How many haploid cells are present in a mature female gametophyte of a flowering plant? Name them. (2)

### SECTION C

15. The diagram given below shows the human male reproductive system (one side only). (3)



- (i) Identify 'X' and write its location in the body of human male.  
 (ii) Name the accessory gland 'Y' and its secretion.  
 (iii) Name and state the function of 'Z'.

16. (a) Mention any four strategies in flowering plants to prevent self-pollination. (3)  
 (b) Why is geitonogamy also referred to as genetic autogamy?

### SECTION D

17. Describe in sequence the processes that lead to the formation of a 3-celled pollen grain from microspore mother cell in angiosperms. (5)

OR

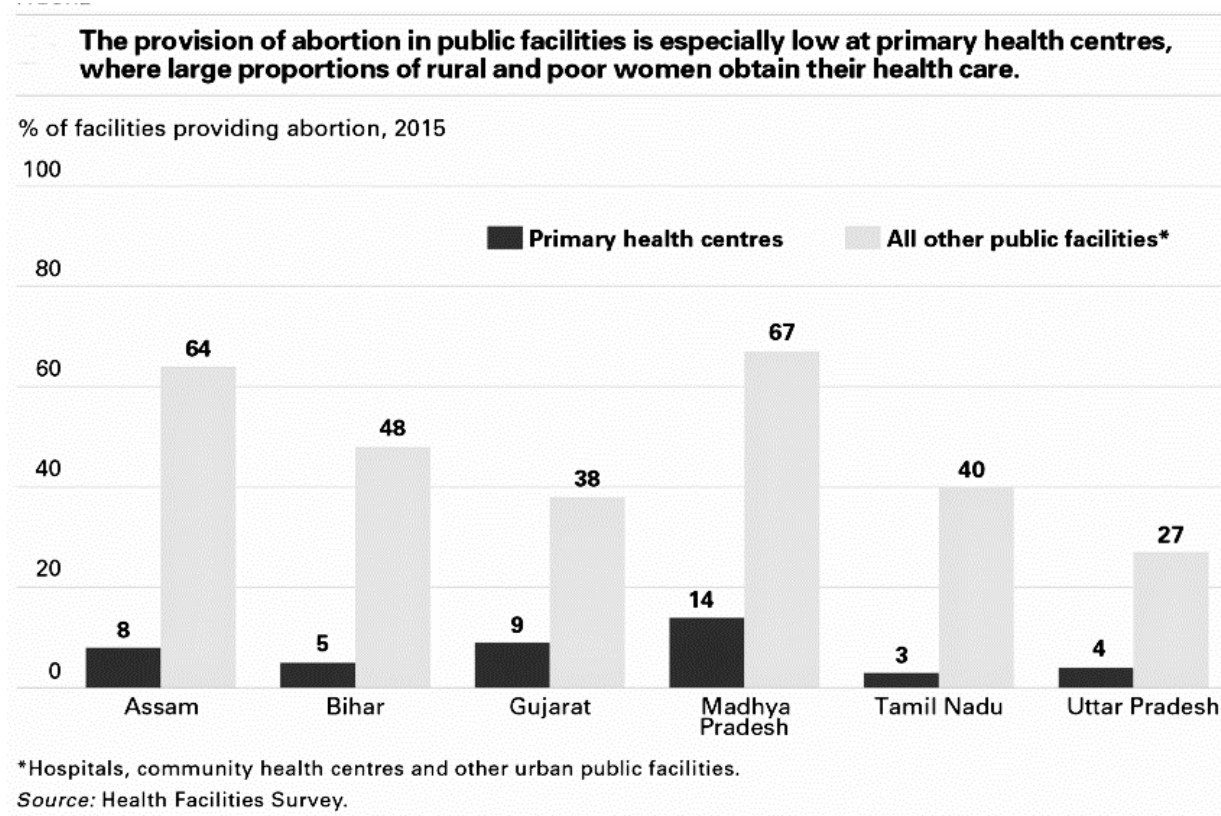
- (i) Explain the process of double fertilisation in angiosperms.  
 (ii) Why does the development of the endosperm precede that of the embryo?
18. What is spermatogenesis? Briefly describe the process of spermatogenesis. (5)

### SECTION E

Questions 19 and 20 are Case Study-Based questions and are compulsory.

19. **Medical Termination of Pregnancy**

After so many years of development, some regions of our society still believe in having a male child for their family. This intentional or involuntary termination of pregnancy is often termed as abortion. It has been estimated that nearly 45-50 million MTPs or medical termination of pregnancies are performed in a year all around the world. The bar diagram given below shows the facility for MTP at primary health centres of five important states in India)



- (i) The government of India legalised Medical Termination of Pregnancy in the year \_\_\_\_\_. (1)  
 (A) 1971 (B) 1961 (C) 1981 (D) 1951
- (ii) Which Indian state has better PHC and public facilities for MTP? (1)  
 (A) Assam (B) Tamil Nadu (C) Madhya Pradesh (D) Bihar
- (iii) Explain two Assisted Reproductive Technologies (ART) that would help childless couples. (2)

OR

- (iii) At the time of independence, the population of India was 350 million which exploded to over 1 billion by May 2000. List any two steps taken by the government to check this population explosion.

### Menstrual Cycle

20. The first menstruation is called menarche, which usually occurs between 12 and 15 years. In human females, menstruation is repeated at an average interval of about 28 to 29 days and called as menstrual cycle. It is regulated by hormones such as the pituitary gland which is stimulated by releasing factors produced in the hypothalamus. The hormones produced by the pituitary gland influence the ovaries. The hormones secreted by the ovaries affect the walls of the uterus.
- (i) Which days of the menstrual cycle marks the proliferative phase? (1)  
(A) 1-5                      (B) 15-28                      (C) 6-13                      (D) 10-14
- (ii) Which of the following occurs during the secretory phase? (1)  
(A) Graafian follicle transforms into corpus luteum  
(B) Primary follicle changes into Graafian follicle  
(C) Endometrium rebuilds and estrogen secretion increases  
(D) LH surge inducing release of an ovum.
- (iii) Withdrawal of which hormone causes degeneration of corpus luteum? (1)  
(A) FSH                      (B) LH                      (C) Progesterone                      (D) Estrogen
- (iv) The breakdown of endometrium is characteristic of \_\_\_\_\_. (1)  
(A) Proliferative phase                      (B) Luteal phase  
(C) Ovulatory phase                      (D) Menstrual phase