

Mock Test -1

Secondary Examination, 2023

Zoology

Time : 2¾ Hours

Max. Marks : 80

General Instructions to the Examinees:

- (1) Candidate must write first her/his Roll No. on the question paper compulsorily.
- (2) All the questions are compulsory.
- (3) Write the answer to each question in the given answer book only.
- (4) For question having more than one part the answers to those parts are to be in continuity.
- (5) If there is any error/difference/contradiction in Hindi & English version of the questions paper, the question of the Hindi version should be treated valid.

Section – A

1. Cleistogamous flowers are self-pollinate because [1 mark]
(1) they are bisexual flowers which do not open at all
(2) they are bisexual and open flowers.
(3) they are unisexual
(4) their stigma matures before the anthers dehisce
2. Asexual reproduction by zoospores is observed in [1 mark]
(1) Penicillium (2) Hydra
(3) Sponge (4) Chlamydomonas
3. The diagnostic test that confirms typhoid in human is– [1 mark]
(1) ELISA (2) Widal
(3) MRI (4) Amniocentesis
4. The bioactive molecule used as an immunosuppressive agent during organ transplant is [1 mark]
(1) Tetra cycline (2) Cyclosporin-A
(3) Stasis (4) Streptomycin
5. Blue revolution refers to [1 mark]
(1) Construction of water dams for conservation of water.
(2) Production of fish in large quantities
(3) Sewage treatment
(4) Controlling algal bloom
6. The theory of evolution supported by the experiment conducted by Louis Pasteur is – [1 mark]
(1) Spontaneous generation theory
(2) Life comes only from pre-existing life
(3) Abiogenesis of life
(4) Big bang theory
7. Which one of the following is not the product of transgenic experiments? [1 mark]
(1) Pest-resistant crop variety
(2) High nutritional value on grains
(3) Production of insulin by rDNA technique
(4) Drought resistant crops

Section – B

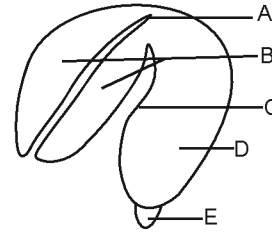
8. Write the ploidy and no. of chromosomes in human
(a) meiocytes and (b) gametes. **[2 mark]**
9. What is aneuploidy? Name a chromosomal disorder in humans caused due to
(a) gain of an autosome and
(b) loss of a sex chromosome in females. **[2 mark]**
10. State a functional difference between the following codon?
(A) AUG & UAA
(B) Specific and Degenerate
11. (A) Identify any two marsupials from the list given below? **[2 mark]**
(1) Lemu
(2) Spotted Cuscus
(3) Flying phalanger
(4) Bobcat
(5) Tasmanian wolf
(6) Note
(B) Australian marsupials exhibit adaptive radiation. Justify the statement.
12. Name the type of immunity the mother provides the newborn baby. How does it happen? **[2 mark]**

Section – C

13. Draw a longitudinal section of the pistil from a flowering plant, where pollination has occurred. Label the following:
(1) Stigma Showing germinating pollen grains
(2) Style
(3) Pollen tube reaching the micropyle of the ovule
(4) Embryo Sac
(5) Components of the egg apparatus
14. Study the given diagram?
(A) is an embryonic stage that gets transformed into B, which in turn gets implanted in the endometrium in human females.
(a) Identify A, B and its parts C and D.
(b) State the fate of C and D in the course of embryonic development in humans. **[3 mark]**

Or

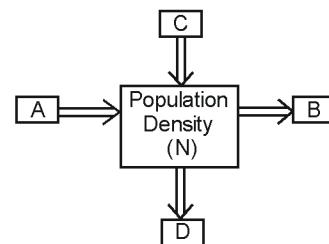
- (a) Identify the figure given below and also identify the parts B, C, D & E.



- (b) State the function of E. **[3 mark]**
15. A normal couple has their first child who is haemophilic. Work out a cross to show. How it is possible. State the possibility of the normal and the hemophilic children along with their sexes, they can be born to them.
16. Starting from the pioneer species, trace the sequence that follows is an ecological succession on a bare rock, until the climax community is reached in an ecosystem. Name this type of succession. **[3 mark]**
17. The release of municipal waste water and industrial waste into our natural water bodies is causing a disastrous effect on aquatic life. Explain the biological treatment that should be given to it before releasing it into the natural water bodies.
18. Mention any two advantages of the micro propagation technique. Write how its process is carried out in the laboratory. Name any two important food plants grown commercially by this method.
19. When *Bacillus thuringiensis* enters a certain insect's body. The insect gets killed, but itself remains unaffected. Explain how it is possible.

Section – D

20. Study the schematic representation given above and answer the following question –



- (a) Identify A in it.
(b) Identify D in it.
(c) When the population density at time t is N as shown above, write the population density at time $t+1$ on the form of an eq. using appropriate symbols.

21. (a) Identify step A & B in a cycle of PCR given below. (4 marks)
(b) State the specific characteristic feature of the enzyme in carrying step B. (4 marks)

OR

22. Study the diagrammatic representation of S.L. Miller's experiment given below and answer the questions that follow :

- (a) How did S.L. Miller create the conditions which existed before the origin of any life on earth?
(b) Name the organic compound formed and collected at the end of this experiment.
(c) Mention the kind of evolution his experiment supports.

Section – E

23. (a) Draw the sectional view of a seminiferous tubule of humans. Label its six parts.
(b) Name the pituitary hormones involved in the process of spermatogenesis. State their functions?

(5 mark)

OR

- (a) IUDs are said to be effective contraceptives. Name any two commonly used IUDs and write the mode of their actions.
(b) When is sterilization advised to married couples? How is it carried out in a human male and a female respectively?

24. Explain the expression of lac operon genes in *E. coli* growing in a lactose containing culture medium. [5 marks]

OR

Name the type of cells and the process by which hnRNA is formed. Describe the processing mechanism it undergoes before it becomes functional.

25. There is a great concern all over the world to conserve biodiversity for maintaining the ecological balance in nature. Explain giving three reasons. Write different ways that have helped in increasing the tiger population in our country.

Or

26. What is integrated organic farming? How did Ramesh Chandra Dagar, a farmer from Sonapat, Haryana effectively use this procedure and succeed with zero waste?