

Reg. No. :.....

Name :.....

SECOND YEAR HIGHER SECONDARY EXAMINATION, SAMPLE QUESTION

Part III
BIOLOGY
(Botany & Zoology)

Time: 2 Hours

Cool-off time: 20 Minutes

Preparatory time: 5 Minutes

Cool off time: 10 Minutes

PART A
BOTANY

(Maximum : 30 Scores)

Time : 1 Hour

I. Answer any three questions from 1-5. Each carries 1 score

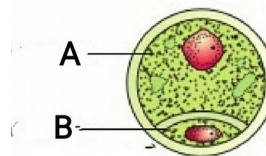
(3 x 1 =3)

1. The outer layer of pollen grain is made of _____
2. Name the first restriction enzyme.
3. Expand Bt
4. α -1 antitrypsin is used to treat the disease.
a) Cancer b) Phenyl ketonuria c) Cystic fibrosis d) Emphysema
5. Observe the first pair and fill in the blanks.
Orchid growing in a tree: Commensalism
Cuscutta on hedge plant: _____

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

(9 x 2 =18)

6. Observe the figure given below.



- a) Identify the cells A and B
- b) Write any 2 peculiarities of A

7. Pollination is an important mechanism found in flowering plants. Write short notes on

- a) Geitonogamy
- b) Xenogamy

8. DNA fragment can be separated using gel electrophoresis.

- a) Name the gel used in this technique.
- b) Write the name of technique used to remove DNA from the gel.

9. Write notes on.

- a) Microinjection
- b) Biolistics

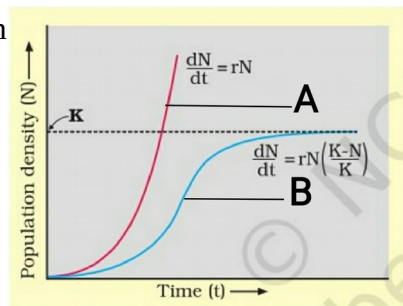
10. In 1983, an American company Eli Lilly produced human insulin artificially. Write down the methods used in this technique.

11. Write any 4 benefits of transgenic animals to human beings.

12. Meloidogyne incognita is a nematode parasite infect the roots of Tobacco plants. Its infection can be prevented by biotechnological methods.

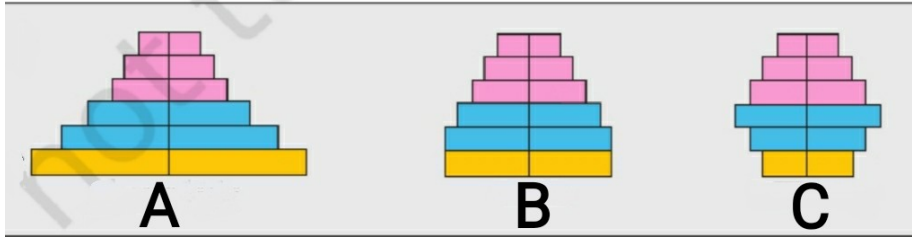
- a) Name the strategy.
- b) Explain the principle behind this strategy.

13. The following graph shows two types of population growth curve.



- a) Name the growth curve A
- b) What does K stands for?

14. Observe the diagrams given below.



- a) Select the stable population
- b) Compare the nature of population growth in A, B & C

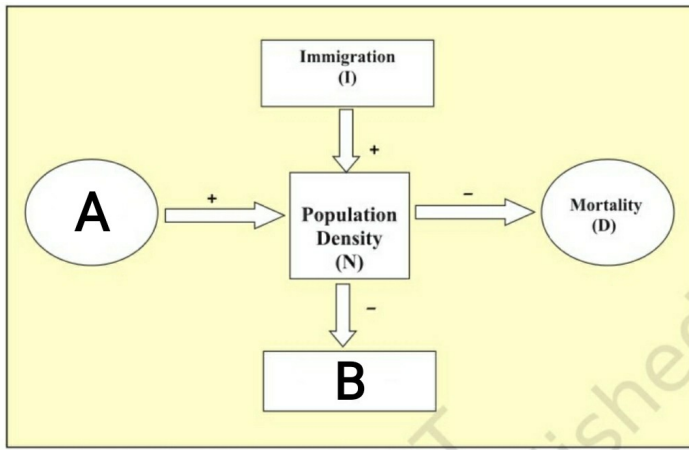
15. What are the limitations of ecological pyramid?

16. What are the factors affecting decomposition.

III. Answer any 3 questions from 17 – 20. Each carries 3 scores

(3 x 3 = 9)

17. Study the diagram given below and answer the questions.

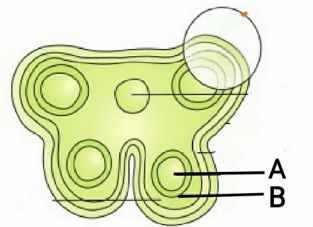


- a) Fill A and B
- b) Explain A and B.

18. Expand and Explain DFC and GFC.

19. In the T.S of mature anther given below, identify

A and B and write the functions of B.



20. Figure representing the reactions associated with PCR.

- a) Name the steps A, B and C in this process.
- b) Why is the taq polymerase from *Thermus aquaticus* used in PCR ?

