

**INSTRUCTIONS :**

- i. There are total 27 questions and four sections in the question paper. All the questions are compulsory.
- ii. Section A contains question number 1 to 5, very short answer type questions of 1 mark each.
- iii. Section B contains question number 6 to 12, short answer type I questions of 2 marks each.
- iv. Section C contains question number 13 to 24; short answer type II questions of 3 mark each.
- v. Section D contains question number 25, 26 and 27 questions of 5 marks each.

Q.No	Question	Marks
1	What is perisperm ?	1
2	What do you mean by test cross ?	1
3	What causes swelling of the lower limbs in patients suffering from filariasis?	1
4	Write the role of GEAC.	1
5	Name a microbe used for statin production. ?	1
6	Where are the Leydig cells present? What is their role in reproduction?	2
7	Mention the importance of LH surge during menstrual cycle.	2
8	What is frame shift mutation?	2
9	Give one example of analogy and homology in plants?	2
10	Differentiate between benign tumor and malignant tumor. <b>Or</b> What is cancer? How is a cancer cell different from the normal cell?	2
11	Why are some molecules called bioactive molecules? Give two examples of such molecules.	2
12	The evolutionary story of moths in England during industrialization reveals, that 'evolution is apparently reversible'. Clarify this statement	2
13	What are chasmogamous flowers ? Can cross pollination occurs in cleistogamous flower ? Give reason for your answer.	3
14	Draw a labeled diagram of the sectional view of anatropus ovule(labeled any six parts) <b>OR</b> Draw a diagram of a male gametophyte of angiosperms. Label any four parts.	3
15	<b>a.</b> How many spermatozoa are formed from one secondary spermatocyte? <b>b.</b> Where does the first cleavage division of zygote take place?	3
16	How do pills acts as contraceptive in human female?	3
17	What is Co-dominance? How does it differ from incomplete dominance?	3
18	Explain Convergent evolution in detail with example.	3
19	Differentiate between benign tumor and malignant tumor.	3
20	Explain the concept of the Blue Revolution.	3
21	<b>a)</b> Draw a diagram of the E.coli vector pBR322 and label the following Ori, Rop, BamHI and EcoRI <b>b)</b> Describe the naming of restriction endonucleases with an example.	3
22	The generative cell of a two-celled pollen divides in the pollen tube but not in a three-celled pollen. Give reasons.	3
23	List three biological ways to control pest and diseases in agricultural management.	3

24	What is micro propagation and what is its importance.	3
25	Explain the process of transcription in eukaryotes. <b>OR</b> Explain the complete translation process .	5
26	Explain the different uses of biotechnology in medical field <b>OR</b> Explain PCR with diagram .	5
27	Explain the Parturation and lactation in humans ? <b>Or</b> Draw and label the diagram of female reproductive system of humans.	5