

**Sample Paper- 2013**  
**Subject: Biology**  
**Class 12<sup>th</sup>**

**M.M 70**

**TIME: 3 Hours**

**General Instructions:**

1. All questions are compulsory.
2. The question paper consists of four sections A, B, C and D. Section-A contains 8 questions of 1 mark each, Section-B contains 10 questions of 2 marks each, Section-C has 9 questions of 3 marks each and Section-D contains 3 questions of 5 marks each.
3. There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks, and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.
4. Wherever necessary, the diagrams drawn should be neat and properly labeled.

**SECTION-A**

1. What is the life span of a parrot?
2. Explain central dogma.
3. Name the type of cells the AIDS virus enters into after getting in human body?
4. What does sigmoid growth curve of a population indicate?
5. Differentiate between gene therapy and gene cloning.
6. What is microsporogenesis?
7. Are the thorns of bougainvillea and tendrils of cucurbita homologous or analogous? What type of evolution has brought such a similarity in them?
8. Differentiate between standing state and standing crop in an ecosystem.

**SECTION-B**

9. Write two major functions each of testis and ovary.
10. (a) What is adaptive radiation?  
(b) explain with help of suitable example where adaptive radiation has occurred to represent convergent evolution.

OR

State Hardy-Weinberg principle of genetic equilibrium. Knowing that genetic drift disturbs this equilibrium, mention what does this disturbance in genetic equilibrium lead to.

11. Is sex education necessary in schools. Why?
12. List the specific symptoms of typhoid. Name its causative organism.
13. What are induced mutations? Give one example each of physical and chemical mutagen.
14. Explain the permanent methods of birth control.
15. Explain the advantages of animal inbreeding programme. Mention when would inbreeding depression occur.

16. Why is the length of a food chain in an ecosystem generally limited to 3-4 trophic levels? Explain with examples.
17. Banana is a parthenocarpic fruit whereas oranges show polyembryony. How are they different from each other with respect to seeds.
18. What is cryopreservation ? give its one use.

### SECTION-C

19. (a) Baculoviruses are excellent candidates for integrated pest management in an economically sensitive area. Explain giving two reasons.  
(b) What is organic farming? Why is it suggested to switch over to organic farming?

**OR**

How are somaclones cultured? From explants in vitro conditions? Why are somaclones so called?

20. What happens when a red-coloured homozygous 4'O'clock plant is crossed with a heterozygous 4'O'clock plant? Work out all the genotypes and phenotypes.
21. What is genetic engineering? List the steps involved in rDNA technology.
22. Explain the efforts for the conservation of biodiversity at international level.
23. (a) What are the three types of RNA?  
(b) Which one of these has the shape of a clover leaf in two dimensional structure?  
(c) How is each RNA related in the information flow during protein synthesis?
24. Draw a sectional view of mammary gland.
25. Explain adaptive radiation and convergent evolution by taking example of some of Australian marsupials and Australian placental mammals.
26. Explain any four advantages of GMO's.
27. Differentiate between between PCR and gene cloning.

### SECTION-D

28. (a) A couple did not have baby till 15 years of the marriage. Which technique would you guide them to get a baby and why? How much percentage will be the success rate of that technique? Is this technique already in use.  
(b) Kareena was using a contraceptive for last one year due to which she gained weight, her BP increased and got headache. Which contraceptive was she using suggest her another ideal contraceptive and let her know about its features also.

**OR**

Expand the following :  
ART, GIFT, ICSI, IUI, RTI.

29. Where do transcription and translation occur in bacteria and eukaryotes respectively? Explain the complexities in transcription and translation in eukaryotes that are not seen in bacteria.

**OR**

What does the lac operon consists of? How is the operator switch on and off in the expression of gene in this operon? Explain.

30. What is meant by ozone shield? Name two ozone depleting substances. How do the ozone depleting substances affect the ozone shield? Write one damaging effect of ozone depletion on humans and plants respectively.

**OR**

**Discuss the following**

**(a) Chipko Movement**

**(b) Scrubber**

**(c) Radioactive wastes.**

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