

2019

BIOLOGY
(Theory)

Full Marks : 70

Pass Marks : 21

Time : Three hours

All the questions are compulsory.

The figures in the right margin indicate full marks for the questions.

For Question Nos. 1 to 4 select most appropriate one from the given alternatives A, B, C and D and rewrite the same.

1. Acetic acid is produced by the use of a micro organism called 1
 - A. *Aspergillus niger*
 - B. *Acetobacter aceti*
 - C. *Clostridium butylicum*
 - D. *Lactobacillus bulgaricus*

2. The first step of genetic engineering is 1
 - A. isolation of protein
 - B. isolation of RNA
 - C. isolation of genetic material
 - D. isolation and purification of protein

P.T.O.

3. A normal woman, whose father was colourblind is married to a normal man. The son would be 1
- A. all colourblind
 - B. 75% colourblind
 - C. 50% colourblind
 - D. all normal
4. Which of the following condition inhabit decomposition? 1
- A. Anaerobiosis
 - B. High temperature
 - C. Sunlight
 - D. Moisture

Question Nos. 5 to 14 are very short answer type questions carrying 1 mark each.

5. What is colostrum ? 1
6. Describe the symptom of Downs syndrom. 1
7. What is meant by biomagnification? 1
8. Define bioreactor. 1
9. State the definition of gross primary productivity. 1
10. Give the full form of IUCN. 1
11. Write one point of difference between apomixis and polyembryony. 1
12. Why are gametes said to be pure for a character? 1
13. In what way Genomic DNA Library differ from C DNA Library ? 1
14. What is the difference between parasitism and mutualism? 1

Question Nos. 15 to 24 are short answer type -II questions carrying 2 marks each.

15. Describe two surgical methods of birth control. 2
16. How many X chromosome (s) and how many autosome (s) are present in human ovum? 2
17. What is the characteristic feature of human insulin? 2
18. How the vestigial organs help in the course of evolution? Explain with one example. 2
19. How does amoebiasis occurs in human beings? 2
20. Why transgenic animals are to be produced? 2
21. "The Indian Government took up many serious measures to check the continuous population growth". Summarise the statement in two points. 2
22. There are many reasons for conserving biodiversity. Mention two possible reasons. 2
23. Draw a diagram of a mature male gametophyte and label Pollen tube and Tube nucleus. 2
24. Draw a labelled diagram of Anabaena filament showing Akinete and Heterocyst? 2

Question Nos. 25 to 31 are short answer type-I questions carrying 3 marks each.

25. Describe the three parts of male reproductive system in human. 3
26. What are the three types of age pyramids for human population. 3

27. Write three points of difference between Oviparous and Viviparous animals. 3
28. Explain three salient features of the Mutation theory. 3
29. Identify the functions of three kinds of cleaving enzymes. 3
30. A child has blood group O. If the father has blood group A and the mother has blood group B. Work out the genotypes of the parents and the possible genotypes of the other offsprings. 3
31. "The term health does not mean absence of disease and physical fitness." Analyse the statement by giving three points. 3
- Question Nos. 32 to 34 are **essay type** questions carrying 5 marks each.
32. Define conventional method of plant breeding in five steps. 5
33. State *five* points of difference between DNA and RNA. 5
34. Why is air pollution considered as a serious problem to human population? 5