

2016

BIOLOGY

(Theory)

Full Marks - 70

Pass Marks - 21

Time : Three Hours and *Fifteen Minutes

*(*Fifteen minutes are given as extra time for reading questions)*

All the questions are compulsory.

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

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

1. The cranial capacity of man is estimated as 1
 - A) 1400 cc
 - B) 1300 cc
 - C) 1600 cc
 - D) 1200 cc

2. Biogas predominantly contain 1
 - A) Methane
 - B) Ethane
 - C) Nitrate
 - D) CO₂

11. Name the steps involve in primary sewage treatment. 1
12. How the local rice variety (taothabi) can be improved by genetic engineering technique ? 1
13. When a man is suffering from diabetes; what is your suggestion for treatment in view of genetic engineering ? 1
14. Give *one* point of difference between warm blooded and cold blooded animals. 1

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

15. Draw a transverse sectional view of seminal tubule and labell sertoli cells and spermatozoa. 1+1=2
16. Draw a diagrammatic representation of a typical anatropous ovule and labell Antipodal cells and synergids. 1+1=2
17. Write *any two* characteristic features of ornithophilous flower. 1+1=2
18. Write in brief about the *two* types of crossing over. 1+1=2
19. Define incomplete dominance with an example. 1+1=2
20. Why biofortification is essential to the modern agricultural technology ? 2
21. Who discovered Monoclonal Antibodies ? Write *any one* uses of MAB. 1+1=2
22. Define biopiracy. Give an example. 1+1=2
23. Why Keibul Lamjao is declared as national park ? 2

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24. Explain brood parasite with a suitable example. 1+1=2

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

25. Illustrate *any three* disadvantages of self pollination. 1+1+1=3

26. Explain *any three* traditional methods of birth control. 1+1+1=3

27. Write in brief about *three* components of protein synthesis. 1+1+1=3

28. Who discovered Down's syndrome ? Write *any two* symptoms of this chromosomal disorder. 1+2=3

29. How Lac is cultivated in artificial inoculation procedure ? 3

30. Illustrate *any three* types of enzymes which used in the process of DNA recombinant technology. 1+1+1=3

31. "Deforestation is one of the main causes of ecological imbalance" Justify the above statement elaborately by giving *three* suitable possibilities. 1+1+1=3

Question Nos. 32 to 34 are essay type questions carrying 5 marks each.

32. Explain in detail about the salient features of Darwin's theory of Natural Selection. 5

33. " Nowadays most of the school going children in secondary and higher secondary level are abuse to unexpected drugs" How can you detect psychologically a child is abuse to drugs? Analyse your detection techniques. 3+2=5

34. Why decomposition is necessary to an ecosystem ? Explain *any four* factors which inhibit the process of decomposition. 1+1×4=5