

# Second PUC Biology March, 2015 Question Paper

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(English Version)

**Instructions :** i) This question paper consists of **four** Parts – **A, B, C** and **D**.

Part – **D** consists of **two** Sections – Section – **I** and Section – **II**.

ii) **All** the Parts are **compulsory**

iii) Draw diagrams **wherever** necessary. Unlabelled diagrams or illustrations **do not** attract **any** marks.

## PART – A

Answer the following questions in **one** word or in **one** sentence **each** : 10×1=10)

1. What is Biomagnification ?
2. Name a causative organism of pneumonia.
3. Give an example for adaptive radiation.
4. Define parthenogenesis.
5. Papaya plants exhibit xenogamy only. Why ?
6. What is detritus ?
7. Mention the use of Cyclosporin A.
8. Name the plant from which cocaine is obtained.
9. Mention the technique used to separate DNA fragments in rDNA technology.
10. Why is oxytocin necessary for parturition ?



### PART – B

Answer **any five** of the following questions in **3 to 5** sentences **each, wherever** applicable :

(5×2=10)

11. Differentiate between menstrual cycle and oestrus cycle.
12. Mention any four sexually transmitted diseases.
13. tRNA is an adaptor molecule. Comment.
14. Distinguish between Benign tumour and Malignant tumour.
15. List any four hormones secreted by placenta.
16. What are the conclusions drawn by T. H. Morgan from the crossing experiment in *Drosophila* with respect to linkage ?
17. Discuss the role of fungi as biofertilizers.
18. Write a note on single cell protein.

### PART – C

Answer **any five** of the following questions in about **40 to 80** words **each, wherever** applicable :

(5×3=15)

19. What is aneuploidy ? Write any four symptoms of Down's syndrome.
20. RNA polymerases in eukaryotes show division of labour. Substantiate.
21. Suggest any three assisted reproductive technologies to overcome infertility.
22. Name asexual reproductive structures in
  - i) Hydra
  - ii) *Chlamydomonas*
  - iii) *Penicillium*.

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23. Mention three types of Innate barriers of defence with an example each.

24. Draw a neat labelled diagram of a typical Biogas plant.

25. a) What is endemism ?

1

b) Mention 'The Evil Quartet' of biodiversity loss.

2

26. How does pollination is achieved in vallisneria and sea grasses ?

### PART – D

### SECTION – I

Answer **any four** of the following questions in about **200 to 250** words **each**, wherever applicable :

(4×5=20)

27. Draw a neat labelled diagram of sectional view of human female reproductive system.

28. a) Write the steps involved in multiple ovulation and embryo transfer.

3

b) Differentiate between out crossing and cross breeding.

2

29. Describe the process of DNA replication with the help of a diagram.

30. Explain the transverse section of young anther with a labelled diagram.

31. Explain Brood parasitism and 'sexual deceit' as an interaction of species with an example each.

32. With reference to flower colour in snapdragon, explain incomplete dominance.



**SECTION – II**

Answer **any three** of the following questions in about **200 to 250** words **each, wherever** applicable :

(3×5=15)

- 1
- 2
33. Give the diagrammatic representation of Miller's experiment.
34. a) Development of Bt cotton has reduced the use of insecticides. Justify. 3
- b) Write a note on gene therapy. 2
35. Explain the features of cloning vectors.
36. a) What are the effects of ozone depletion ? 3
- b) BOD is an index of water pollution. Comment. 2
- 20) 37. a) What is ecological succession ? 1
- b) Represent an ideal pyramid of number in a grassland ecosystem. 2
- c) Name the two types of nutrient cycles with an example each. 2

3

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