

**MODEL QUESTION PAPER –MARCH-2016**  
**II PUC BIOLOGY (36)**

**Time: 3 Hours and 15 minutes**

**Max Marks: 70**

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**GENERAL INSTRUCTIONS:**

- i) This question paper consists of four parts A, B, C and D. Part D consists of two parts, 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.
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**PART-A**

**Answer the following questions in One Word or One Sentence each:-**

**10x1=10**

1. Name the type of pollination that brings genetically different types of pollen to the stigma.
2. Mention the role of LH during spermatogenesis.
3. What is foetal ejection reflex?
4. With reference to the Mendelian laws of inheritance define the term "dominance".
5. Which genetic disease is characterized by the reduced synthesis of mutant hemoglobin?
6. 'Evolution can also occur by anthropogenic action. Give an example for this.
7. Mention the role of *Azospirillum* as biofertilizer.
8. "Gel electrophoresis is considered as a very important technique in recombinant DNA technology". Why?
9. Define 'Standing State'.
10. How cryopreservation helps in the conservation of biodiversity?

**PART-B**

**Answer any FIVE of the following questions in 3-5 sentences each, Wherever applicable:**

**5x2=10**

11. Give reasons for the following:
  - a) Compared to internal fertilization, the external fertilization is disadvantageous to the animal.
  - b) Chances of survival of young ones are more in viviparous animals than in oviparous animals.
12. Write a note on double fertilization.
13. Sketch and label a nucleosome.
14. Mention any two physiological barriers that provide non-specific type of defense to our body.
15. List any two bioactive molecules of fungal origin and explain how those molecules help in restoring good health in humans.
16. Explain the method of introduction of alien DNA into bacterial cells.

17. "Alien species are highly invasive and are a threat to local species". Substantiate this with any two examples.
18. Mention any two effects of Ozone depletion on humans.

#### PART-C

**Answer any FIVE of the following Questions in 40-80 words each, Wherever applicable.**

**5x3=15**

19. Name the following:
- The organism in which cell division itself is a mode of reproduction.
  - The type of reproductive cycle in non-primate mammals
  - The plant that flowers only once in its life time.
20. List any six features of genetic code.
21. Explain sex determination in birds.
22. Mention the important points needed for successful beekeeping.
23. Sketch and label a typical biogas plant.
24. What is gene therapy? Explain the steps involved in curing ADA deficiency by gene therapy.
25. Describe rivet popper hypothesis.
26. "Ecosystems should carry a hefty price tag for its various services". Enlist any three of them.

#### PART-D

##### Section-I

**Answer any FOUR of the following questions on 200-250 words each, Wherever applicable:**

**4x5=20**

27. Answer the following:
- Write a note on Pollination in *Vallisneria* (2marks).
  - List the differences between microsporogenesis and megasporogenesis. (2marks).
  - What is the number of chromosomes in each of the endosperm cells of a plant that has 36 chromosomes in its meiocytes? (1mark).
28. Draw a neat labeled diagrammatic view of human male reproductive system.
29. a) Comment on the essential features required for an ideal contraceptive. (2marks).  
 b) Write a note on the steps involved in the creation of "test tube baby". (2marks).  
 c) Name a hormone releasing IUD. (1mark).
30. State the law of Independent assortment. Explain it with an example.
31. With the help of suitable diagrams, explain the process of transcription in bacteria.
32. What were the views of Charles Darwin about the evolution of life forms?

##### Section-II

**Answer any THREE of the following questions in 200-250 words each, wherever applicable:**

**3x5=15**

- Explain how different techniques helps in cancer detection and diagnosis. (4marks).
  - How does smoking cause oxygen deficiency in the body? (1mark).
34. Describe briefly the steps involved in the breeding of new genetic variety of crops.

35. a) Explain how DNA is isolated from cells. (3marks).  
b) Differentiate between exonuclease and endonuclease. (1mark).  
c) What is the uniqueness of *Taq polymerase*? (1mark).
36. Name the type of interactions seen in each of the following examples:  
a) *Ascaris* worms living in the intestine of humans.  
b) Wasp pollinating an inflorescence.  
c) Clown fish living among the tentacles of sea anemone.  
d) Disappearance of smaller barnacles when *Balanus* dominated the coast of Scotland.  
e) Five closely related species of warblers living on the same tree.
37. Draw a neat labeled diagram of electrostatic precipitator and explain. Mention the importance of electrostatic precipitator.

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**NOTE:** It is only a pattern of Question Paper