BOARD OF INTERMEDIATE EDUCATION:: ANDHRA PRRADESH
MODEL QUESTION PAPER (w.e.f IPE 2027)
BIOLOGY – II

TIME: 3 Hrs **Max Marks: 85**

PART – A : BOTANY **Marks : 42**

SECTION – A

Note: Answer all the questions. **4x1=4**

1. The male gametophyte in flowering plant is represented by
   1. Anther 2. Microspore mother cell 3. Stamen 4. Pollen grain
2. The condition of dissimilar allelic pair of a gene is known as
   1. Homozygous 2. Heterozygous
   3. Linkage 4. Polyallelic
3. The puffed up appearance of dough is due to the production of …… gas.
4. Which enzyme is commonly used to join the DNA fragments.

SECTION – B

Note: Answer all the questions. **7x2=14**

5. Differentiate between cleistogamy and chasmogamy.
6. Define true breeding and mention its significance.
7. Who proved DNA is genetic material? On which organism they worked?
8. What is meant by point mutation? Give an example.
9. What are fermenters?
10. What is the full form of PCR? How it is useful in biotechnology?
11. What is an ecological pyramid?

SECTION – C

Note: Answer any four questions. **4x4=16**

12. Explain the law of dominance using a monohybrid cross.
13. Why did T.H Morgan selected fruit flies for his genetical experiments?
14. Define transformation. Give a brief account of Grifith's experiment.
15. Draw the schematic representation of Lac operon.
16. What is BOD? Why is it an important parameter in sewage treatment?
17. Describe the types and importance of ecological pyramids.

SECTION – D

Note: Answer any one question. **1x8=8**

18. Describe the structure of anther with the help of neat diagram.
19. Explain briefly the various processes of Recombinant DNA technology.

PART – B : ZOOLOGY Marks : 43

Note : Read the following instructions carefully,

(i) Answer ALL the questions of Section-A and Section-B. Answer any FOUR questions in Section-C and answer any ONE question in Section-D.

(ii) In Section-A, questions from Sl. Nos. 1 to 5 are "Multiple choice type, fill in the blanks and one-word answer type". Each question carries one mark.

(iii) In section-B questions from Sl. Nos. 6 to 12 are of "Very short answer type". Each question carries two marks. Every answer may be limited to 4 lines. Answer all the questions at one place in the same order.

(iv) In Section-C, questions from Sl. Nos. 13 to 18 are "Short answer type". Each question carries 4 marks. Every answer may be limited to 10 lines.

(v) In Section-D, question from Sl. Nos. 19 to 20 are of "Long answer type". Each question carries eight marks. Every answer may be limited to 20 lines.

(vi) Draw labelled diagrams, wherever necessary for questions in Section C and D.

SECTION – A

Note : (i) Answer all the questions. **5 × 1 = 5 Marks**

(ii) Each question carries 1 mark.

1. The milk produced in the initial few days of lactation which is rich in antibodies called?
2. Match List-I with List-II.

List-I	List-II
a. Cocaine	i. Effective sedative in surgery
b. Heroin	ii. Cannabis sativa
c. Morphine	iii. Erythroxylum coca
d. Marijuana	iv. Papaver somniferum

1. a-iv, b-iii, c-i, d-ii
2. a-i, b-iii, c-ii, d-iv
3. a-ii, b-i, c-iii, d-iv
4. a-iii, b-iv, c-i, d-ii

3. Smoking increases _____ content in blood and reduces the concentration of haem bound oxygen.
4. Assertion (A) : PCR is used for the early diagnosis of diseases like HIV and cancer.
   Reason (R) : PCR amplifies nucleic acids to detect very low concentrations of pathogens before symptoms appear.
   1. If both assertion and reason are true and reason is the correct explanation of assertion.
   2. If both assertion and reason are true but reason is not the correct explanation of assertion.
   3. If assertion is true but reason is false.
   4. If both assertion and reason are false.

5. The logistic growth equation is:

1. $dN/dt = Rn$
2. $dN/dt = rN(K - N)/K$
3. $dN/dt = K - N$
4. $dN/dt = rN^2$

SECTION – B

Note :(i) Answer all the questions. 7 × 2 = 14 Marks

(ii) Each question carries 2 marks.

6. What is the founder effect?
7. What are the common symptoms of disease typhoid?
8. Draw a well-labelled diagram of an antibody molecule.
9. Define Gene Therapy?
10. What are the advantages of Molecular Diagnostics?
11. What is Commensalism? Give an example.
12. List out any four sacred groves in India and their locations.

SECTION – C

Note :(i) Answer any four of the following questions. 4 × 4 = 16 Marks

(ii) Each question carries 4 marks.

13. Describe the following contraceptive methods.
    a. Natural Methods b. Surgical Methods
14. Write the salient features of Human Genome Project (HGP).
15. Explain the Hardy Weinberg Principle.
16. What is innate immunity? What are its barriers?
17. Write a short notes on the concept of Biopiracy?
18. Explain the 'evil quartet'.

SECTION – D

Note :(i) Answer any one of the following questions. 1× 8 = 8 Marks

(ii) Each question carries 8 marks.

19. Describe the female reproductive system of a woman with a help of diagram.
20. Write an essay on common genetic disorders in humans.