



**GOVERNMENT OF KARNATAKA**

**KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD**

6<sup>TH</sup> CROSS, MALLESHWARAM, BENGALURU – 560 003

**2025 -26 II PU MODEL QUESTION PAPER –1**

**SUBJECT: BIOLOGY (36)**

**MAXIMUM MARKS: 70**

**TIME: 03 HOURS**

**NUMBER OF QUESTIONS: 44**

**General Instruction:**

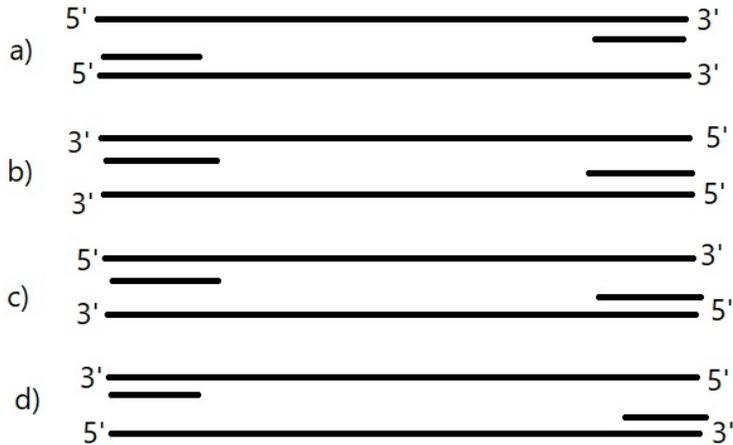
- **This Question paper consists of four parts A, B, C, D and E**
- **Part – A consists of I and II and Part D consists of V and VI**
- **All the parts are compulsory**
- **The answers for Part – A, written in the first two pages of the answer booklet are only considered for evaluation**
- **Part – E consists of questions for visually challenged students only**

**PART – A**

**I. Select the correct alternative from the choices given below:                      15 x 1 = 15**

1. Statement I: Pollination does not guarantee the transfer of right type of pollen  
Statement II: Compatible pollen – pistil interaction guarantee double fertilization
  - a) Both statements I and statement II are correct
  - b) Both statement I and statement II are incorrect
  - c) Statement I is correct but statement II is incorrect
  - d) Statement I is incorrect but statement II is correct
2. The secondary oocyte formation from primary oocyte occurs in which of the follicle?
  - a) Primary
  - b) Secondary
  - c) Tertiary
  - d) Graafian
3. Progenies with AB and O blood groups are not possible from which of the following mating parents?

- a) O x AB                      b) AB x B                      c) AB x AB                      d) AB x A
4. Another chemical name for the nitrogenous base thymine is
- a) 2-Methyl uracil    b) 3- Methyl uracil  
c) 4-Methyl uracil    d) 5- Methyl uracil
5. Select the correct match:
- |                       |                   |
|-----------------------|-------------------|
| Australian marsupials | Placental mammals |
| a) Spotted cuscus     | Flying squirrel   |
| b) Spotted cuscus     | Bobcat            |
| c) Spotted cuscus     | Anteater          |
| d) Spotted cuscus     | Lemur             |
6. Which of these ancient men protected their body with hide and buried their dead?
- a) *Homo habilis*    b) Neanderthal  
c) *Dryopithecus*    d) *Homo erectus*
7. Human Immuno Deficiency virus replicates in
- a) B - cells    b) NK– cells  
c) Helper T - cells    d) PMNL
8. The drug which is depressant and slowdown body function is
- a) Smack    b) Crack  
c) Hashish    d) Charas
9. *Saccharomyces cerevisiae* commonly called brewer's yeast is used for fermenting malted
- a) Pulses    b) Cereals    c) Fruits    d) Vegetables
10. In the year 1963, the two enzymes responsible for restricting the growth of bacteriophage in *E. coli* were isolated. One of them cut DNA and the other added the group
- a) Methyl    b) Ethyl    c) Phosphate    d) Hydroxyl
11. Which of the following is the correct representation of primer annealing step in PCR?



12. Given below are steps in the gene therapy of a patient with Adenosine deaminase (ADA) deficiency

- I. Lymphocytes are grown in a culture outside the human body
- II. Lymphocytes are altered with a functional ADA gene
- III. Lymphocytes are collected from the blood of the patients
- IV. The genetically modified lymphocytes are infused back into the patient

Which of the following show the correct order that those steps must occur?

- a) II – I – III – IV
- b) III – IV – II – I
- c) III – I – II – IV
- d) IV – III – I – II

13. The organisms that reproduce only once in their life time

- a) Oysters
- b) Pelagic fish
- c) Salmon fish
- d) Hippocampus

14. The decomposers especially abundant in the bottom of the pond are

- a) Only fungi
- b) Only bacteria
- c) Only fungi and bacteria
- d) Flagellates, fungi, bacteria

15. The IUCN Red list (2004) documented the extinction of species in the last 500 years include

- a) 847
- b) 784
- c) 874
- d) 478

**II. Fill in the blanks by choosing the appropriate word/Words from those given below:** **5 x 1 = 5**

(Amoebiasis, richness, Nostoc, ovulation, colostrum, diversity)

16. The initial few days of milk produced after parturition is -----

17. Oral pills as contraceptive effectively function by inhibiting ----- .
18. Symptoms of constipation, abdominal pain and cramps associated with disease -----.
19. Cyanobacteria is an autotrophic microbe widely distributed in aquatic and terrestrial habitats can fix atmospheric nitrogen is -----.
20. Alexander Van Humboldt observed that within a region, species ----- increased with increasing explored area but up to certain limit.

### **PART - B**

**III. Answer any FIVE of the following questions in 3 – 5 sentences wherever applicable: 5 x 2 = 10**

21. Draw a labeled diagram of mature 2 celled pollen grain
22. Mention any four assisted reproductive technique that can be advised to couples with infertility problems.
23. Recombinants obtained in both Mendelian and Morgan experiment. Yet, the processes involved are different comment.
24. Name the methodologies used in Human genome sequencing.
25. Name the evolution of any two plant forms through geological periods from tracheophyte ancestors.
26. Describe briefly the primary treatment of sewage
27. Differentiate between ex-situ and in-situ conservation.

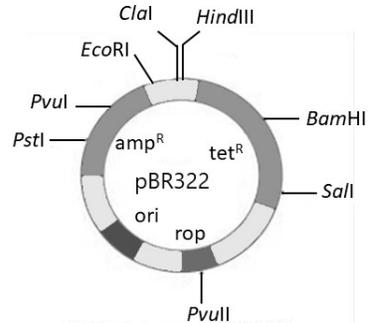
### **PART - C**

**IV. Answer any FIVE of the following questions in 40 – 80 words each wherever applicable: 5 x 3 = 15**

28. Draw a neat labeled diagram of monocot embryo.
29. What is menstrual cycle? Mention one pituitary and one ovarian hormone that play a role in menstrual cycle.
30. Write any three principles to be followed by people to be free from sexually transmitted infections.



- i) Name the molecules trapped in the lymph nodes responsible for the activation of lymphocytes that bind to the 'A' and 'B' site 1
- ii) What does H<sub>2</sub> L<sub>2</sub>, in an antibody represent? 1
39. a) Explain the process of preparation of competent host for transformation with recombinant DNA.
- b) Refer to the given diagram of pBR322 and answer the question that follows



- a) Mention the restriction enzymes that can be used for insertional inactivation of antibiotic resistant genes 2
- b) How many cloning sites are present in the given pBR322? 1
40. Genetically modified plants have been developed through core techniques of biotechnology. How are these genetically modified plants useful to humans
41. a) Write an equation to calculate the population density at the time 't'. 1
- b) Population density fluctuates due to change in four basic processes. Mention and define these four basic processes. 4

**VI. Answer any ONE of the following questions in about 200–250 words each wherever applicable: 1x 5 = 5**

42. a) Complete the given tabular column with respect to male and female gametophyte of angiosperms for the mentioned character 4

Character	Mature Male gametophyte	Mature Female gametophyte
i) Number of cells present in		
ii) Number of gametes present in		
iii) Type of cell division involved in		



43. a) Mention the salient features of Down's syndrome 2
- b) Write the karyotype of Down's syndrome 2
- c) What is the cause of Down's syndrome? 1