



# **BIOLOGY**

## **BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)**

### **SAMPLE PAPER -03**

**Bio Botany Part I**

## 1. Match the following

Gene interactions	$F_2$ Phenotype ratio
(A) Complementary genes	(i) 1 : 2 : 1
(B) Supplementary genes	(ii) 9 : 7
(C) Co - dominance	(iii) 15 : 1
(D) Duplicate genes	(iv) 9 : 3 : 4

A. A-(iv), B-(iii), C-(i), D-(ii)

B. A-(ii), B-(iv), C-(i), D-(iii)

C. A-(iii), B-(iv), C-(ii), D-(i)

D. A-(iii), B-(i), C-(iv), D-(i)

**Answer:**



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2. Changing the codon AGC to AGA represents

- A. Mis-sense mutation
- B. Non-sense mutation
- C. Frame-shift mutation
- D. Deletion mutation

**Answer:**



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3. Restriction enzymes are

- A. Not always required in genetic engineering
- B. Essential tools in genetic engineering
- C. Nucleases that cleave DNA at specific sites
- D. Both b and c

**Answer:**



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4. Totipotency refers to .....

A. Capacity to generate genetically identical plants

B. capacity to generate a whole plant from any plant cell/explant

C. capacity to generate hybrid protoplasts

D. recovery to healthy plants from diseased plants

**Answer:**



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5. In soil water available for plants is

- A. gravitational water
- B. Chemically bound water
- C. Capillary water
- D. hygroscopic water

**Answer:**



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6. Which one is in descending order of a food chain?

A. Producers → secondary consumers →

Primary consumers → Tertiary consumers

B. Tertiary consumers → Primary

consumers → Secondary consumers →

Producers

C. Tertiary consumers → secondary

consumers → Primary consumers →

Producers

D. Tertiary consumers → Producers →

Primary consumers → Secondary

consumers

**Answer:**



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7. Clean Development Mechanism (CDM) is defined in....

- A. Copenhagen Acord
- B. Montreal protocol
- C. Pairs Agreement



D. Kyoto protocol

**Answer:**



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## Bio Botany Part II

1. Pick out the odd pair.

A. Man selection - Morphological characters

B. Pureline selection - Repeated self  
pollination

C. Clonal selection - Sexually propagated

D. Natural selection - Involves nature

**Answer:**



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2. Write a short note on pollen kitt.



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3. What is back cross ?



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4. Productivity of profundal zone will be low. Why ?



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5. Explants for tissue culturing has to be surface sterilized. How ?



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6. Define heterostyl, through which way does this condition can be maintained for generation .



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7. Discuss which wood is better for making furniture.



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1. Give the names of the scientists who rediscovered Mendel's work.



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2. Write the advantages and disadvantages of Bt cotton.



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3. How cryopreservation works?



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4. What is Co-evolution? Give examples.



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5. Write a short note on Chipko Movement.



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1. Name the tissue that nourishes the embryo in angiosperm seeds. Explain its types. Structure of ovule (Megasporangium ):



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2. Give the protocol for Micropropagation in Banana.



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1. Assertion (A): Organisms show three phases in their life cycle.

Reason (R): Juvenile phase is a degenerative phase.

A. A is correct. R is incorrect

B. Both A and R are incorrect

C. R is the correct explanation for A

D. A is not correct but R is correct .

**Answer:**



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2. Find the wrongly matched pair

A. Bleeding phase - fall in oestrogen and progesterone

B. Follicular phase - rise in oestrogen

C. Luteal phase - rise in FSH level

D. Ovulatory phase - LH surge

**Answer:**



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3. Identify the correct statements from the following.

A. Chlamydisis is a viral disease

B. Gonorrhoea is caused by a spirochaete bacterium, treponema pallalium

C. The incubation period for syphilis is 2 to 14 days in males and 7 to 21 days in females.

D. Both syphills and gonorrhoea are easly cured with antibiotics.

**Answer:**



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4. Klinefelter's syndrome is characterized by a karyotype of .....

A. XYY

B. XO

C. XXX

D. XXY

**Answer:**



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5. The golden age of reptiles was .....

A. Mesozoic era

B. Cenozoic era

C. paleozoic era

D. Proterozoic era

**Answer:**



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6. Match list I with list II.

List I

Raw material

- A) Germinated barley malt
- B) Fermented sugarcane
- C) Fermented sap of palm tree
- D) Fermented grape juice

List III

Product obtained

- (1) Wine
- (2) Toddy
- (3) Rum
- (4) Beer

A. A-2, B-4, C-3, D-1

B. A-4, B-3, C-2, D-1

C. A-2, B-3, C-4, D-1

D. A-3, B-1, C-4, D-2

**Answer:**



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7. The relationship between sucker fish and shark is .....

- A. Competition
- B. Commensalism
- C. Predation
- D. Parasitism

**Answer:**



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8. Who is called as the forest man of India?

A. Sunderlal Bahuguna

B. M.S. Swamination

C. Dr. V. Kurien

D. Jadav Payeng

**Answer:**



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1. Mention the importance of the position of the testes in humans.



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2. Type A blood should not be injected to a person having B-blood group. Why ?



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3. Name the anticodon required to recognize the following codons: AAU, CGA, UAU, and GCA.





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4. What is diapedesis ?



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5. How was Insulin obtained before the advent of rDNA technology? What were the problems encountered?



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6. How many hotspots are there in India? Name them.



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## Bio Zoology Part Iii

1. Define surrogacy.



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2. Differentiate between divergent evolution and convergent evolution with one example for each.



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3. Under which condition does a microbe gains resistance against antibiotic?



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4. Expand (i) CFC (ii) AQI (III) PAN



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5. Mention the number of primers required in each cycle of PCR. Write the role of primers and DNA polymerase in PCR. Name the source organism of DNA polymerase used in PCR.



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**Bio Zoology Part Iv**

1. Menstruation - a cyclic event occurring in every normal woman throughout her fertile period .

Name the various phases of the menstruation and explain it.



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2. Explain the structure of Immunoglobulin molecule with a suitable diagram.



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