



# BIOLOGY

## BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

### SAMPLE PAPER -4

#### Bio Botany Part I

1. In majority of plants pollen is liberated at

A. 1 celled stage

B. 2 celled stage

C. 3 celled stage

D. 4 celled stage

**Answer: B**



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2. Which one of the following is an example for polygenic inheritance ?

A. Flower color in *Mirabilis jalapa*

B. Pod shape in garden pea

C. Production of male honey bee

D. Skin color in humans

**Answer: D**



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**3. Assertion (A):** Complete linkage is noticed in male species of *Drosophila*.

Reason (R): Completely linked genes show some crossing over.

A. A is true, R is false

B. Both A and R are false

C. A is true, R is not correct explanation of

A

D. R explains A

**Answer: A**



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4. Virus free plants are developed from

A. Organ culture

B. Meristem culture

C. Protoplast culture

D. Cell suspension culture

**Answer: B**



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5. The unit of measuring ozone thickness is

.....

A. Joule

B. Kilos

C. Dobson

D. Watt

**Answer: C**



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6. If 1200 Joules of solar energy is trapped by producers, how much of joules of energy does the organism in the third trophic level will receive?

A. 120 joules

B. 2 joules

C. 1.2 joules

D. 0.12 joules

**Answer: C**



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7. Dwarfing gene of wheat is

A. Pal 1

B. Atomita 1

C. Norin 10

D. Pelita 2

**Answer: C**



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8. Which of the following matches are correct.

- |                 |                             |
|-----------------|-----------------------------|
| (a) Palmyra     | - Native of Brazil          |
| (b) Saccharum   | - Abundant in Kanyakumari   |
| (c) Steveocide  | - <b>Natural sweetner</b>   |
| (d) Palmyra sap | - fermented to give ethanol |



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## Bio Botany Part II

1. Write the origin and area of cultivation of green gram and red gram.



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2. State the law of independent assortment.



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3. Expand (i) PEG (ii) PHB



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4. Based on the material used, how will you classify the culture technology?





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5. Give an example of plants, cultivated in commercial agroforestry.



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6. How does an orchid ophrys ensures its pollination by bees?



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1. What are the objectives of plant breeding?



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2. Spindle shaped pyramid of number is noticed in forest ecosystem. Give Reasons.



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**3. Distinguish between mound layering and air layering.**



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**4. Explain the sex determination mechanism in Caricapapaya.**



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5. Write the protocol for artificial seed preparation.



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6. (a) Bring out the inheritance of chloroplast gene with one example.



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7. (b) Explain in detail about various types of direct gene transfer method.



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8. (a) Explain the steps involved in protoplast culture.



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9. (b) Write a note on Henna.



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## Bio Zoology Part I

1. The animals which give birth to young ones are

- A. Oviparous
- B. Ovoviviparous
- C. Viviparous
- D. Both a and b



**Answer: C**



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2. Messelson and Stahl's experiment proved.....

A. Transduction

B. Transformation

C. DNA is the genetic material

D. Semi-conservative nature of DNA replication.

**Answer: D**



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**3. Match column I with column II.**

<b>Column I</b>	<b>Column II</b>
A) Copper releasing IUD	(i) LNG-20
B) Hormone releasing	(ii) Lippes's loop IUD
C) Nonmedicated IUD	(iii) Saheli
D) Minipills	(iv) Multiload-375

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

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

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

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

**Answer: D**



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**4. Choose the correctly matched pair.**

- |                           |   |              |
|---------------------------|---|--------------|
| <i>(a)</i> Amphetamines   | – | Stimulant    |
| <i>(b)</i> LSD            | – | Narcotic     |
| <i>(c)</i> Heroin         | – | Psychotropic |
| <i>(d)</i> Benzodiazepine | – | Pain killer  |



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5. The first clinical gene therapy was done for the treatment of

A. AIDS

B. Cancer

C. Cystic fibrosis

D. SCID

**Answer: D**



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6. Some organisms are able to maintain homeostasis by physical means .....

A. Conform

B. Regulate

C. Migrate

D. Suspend

**Answer: B**



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7. Select the correct linear equation describing the species area relationship?

A.  $\log C = \log S + Z \log A$

B.  $Z \log A = \log S + \log C$

C.  $\log S = \log C + Z \log A$

D.  $\log C = \log S \pm Z \log C$

**Answer: B**



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8. Oil stains in laundry can be removed using.... ..

A. Peptidane

B. Protease

C. Amylase

D. Lipase

**Answer: D**



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1. The unicellular organisms which reproduce by binary fission are considered immortal. Justify.



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2. What is colostrum? Write its significance.



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3. What is haplodiploidy?



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4. Mention the main objections to Darwinism.



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5. Differentiate between cell mediated Immunity and Antibody Mediated Immunity.



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6. What are attenuated recombinant vaccines?



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## Bio Zoology Part Iii

1. Alien species invasion is a threat to endemic species - substantiate this statement.



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2. In what way Peyang conserved the forests?



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3. Amniocentesis, the foetal sex determination test, is banned in our country, Is it necessary?

Comment.



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4. Write the objectives of Human Genome project.



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5. Explain the role of cry-genes in genetically modified crops.



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1. Describe the structure of a sperm



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2. (b) Explain the Mechanism of 'lac' - operon of the E-coli.



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3. Explain stabilizing, directional and disruptive selection with examples.





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4. (b) Tabulate the types of innate immunity and their action mechanism.



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