

TUTY

PREPARATORY EXAM - 2021

Standard XII

Reg.No

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Time: 3.00 hours.

BIOLOGY

Marks 70

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Bio-Botany (Marks 35)
Section - A

I. Choose the correct answer:

1. Parthenocarpic fruits lack
a) Endosperm b) Epicarp c) Mesocarp d) Seed
2. Identify the correctly matched pair changes in the floral parts up to the formation of the seed.
a) Ovule-Fruit b) Funicle-Seed c) Egg-Zygote d) Nucellus-Testa
3. Fruit colour in squash is an example of
a) Recessive epistasis b) dominant epistasis
c) complementary genes d) inhibitory genes
4. In which techniques Ethidium Bromide is used?
a) Southern Blotting Techniques b) Western Blotting Techniques
c) Polymerase Chain Reaction d) Agrose Gel Electroporisis
5. Who was first introduced the concept of gene mapping?
a) Morgan b) Mendel c) Alfred H. Sturtevant d) Karl Ereky
6. Number of chromosomes (2n) present in sugarcane
a) 16 b) 80 c) 4 d) 22
7. Select the suitable fusogen of protoplast fusion
a) polyethylene glycol b) sorbital c) polyhydroxy glycol d) agar
8. In plant tissue culture, pH of medium is _____
a) 4 to 8 b) 2 to 6 c) 5.6 to 6.0 d) 3 to 5

Section - B

II. Answer any 4 questions:

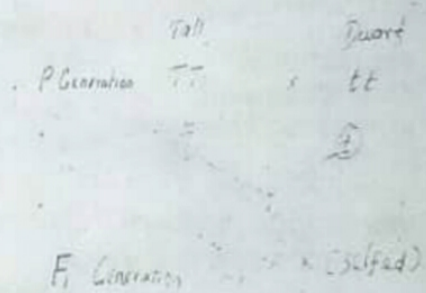
9. Define Genetics.
10. Define Malacophily.
11. What is Palynology? Write its uses.
12. Define Genetic Map.
13. Write short notes about polyhydroxybutyrate (PHB).
14. What do you mean Embryoids?

Section - C

III. Answer any 3 questions: (Ques.No.19 is compulsory)

15. List out the functions of Tapetum?
16. Differentiate between Southern and Northern blotting. (any 3)
17. What is Colchicine? Write its uses.
18. Write the importance of crossing over. (any 3)

19. Complete the Monohybrid cross and write phenotypic and genotypic ratio.



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Section - D

IV. Answer the following questions:

20. a) Give a detailed account of Parthenocarpy. Add a note on its significance. (or)
b) Mention the name of man made cereal? How it is formed?
21. a) What is bioremediation? Give 3 examples of bioremediation. (or)
b) i) Define Cryopreservation.
ii) Write application of plant tissue culture. (any 3)

2 x 5 = 10

Bio-Zoology (Marks 35)

Section - A

I. Choose the correct answer:

8 x 1 = 8

1. Assertion (A) : In bee society, all the members are diploid except drones.
Reason (R) : Drones are produced by parthenogenesis.
a) If both (A) and (R) true, (R) is correct explanation for (A)
b) If (A) is true, (R) is false
c) If both (A) and (R) are false
d) If both (A) and (R) true, (R) is not correct explanation for (A)
2. Match the following:
- | | | | | | | |
|-------------------------|----------------------|----|---|----|-----|----|
| i) Chemical barrier | - A) CUT-380 A | a) | I | ii | iii | iv |
| ii) Mechanical barrier | - B) Jellies, Creams | b) | B | C | D | A |
| iii) Hormonal barrier | - C) Saheli | c) | C | A | D | B |
| d) Intrauterine devices | - D) Condoms | d) | B | D | C | A |
| | | | A | C | B | D |
3. The fetal membrane that forms the basis of the umbilical cord is
a) allantois b) amnion c) chorion d) yolk
4. Who is the universal donor?
a) A b) B c) AB d) O
5. Assertion (A) : The latest method of sequencing even longer fragments is by a method called shot gun sequencing.
Reason (R) : The VNTRs of two persons generally show variations and are useful as genetic markers.
a) (A) and (R) false b) (A) and (R) true, (R) is correct explanation for (A)
c) (A) false (R) false d) (A) true, (R) false
6. Match the following:
- | | | | | | | |
|---------------|----------------------------|----|---|----|-----|----|
| i) Tertiary | - A) Age of fishes | a) | i | ii | iii | iv |
| ii) Jurassic | - B) Human, Mammals, Birds | b) | D | A | C | B |
| iii) Devonian | - C) Fossil invertebrates | c) | A | D | C | B |
| iv) Cambrian | - D) Dinosaurs | d) | B | A | A | C |
| | | | C | A | B | A |
7. $(p+q)^2 = p^2 + 2pq + q^2$. If $p = 0.3$, $q = 0.7$, what is $2pq$?
a) 0.09 b) 0.42 c) 0.41 d) 0.43
8. Assertion (A) : Individuals who possess these antigens in their fluids such as saliva.
Reason (R) : They are secretors.
a) (A) and (R) false b) (A) and (R) true
c) (A) false, (R) true d) (A) true, (R) false

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Section - B

II. Answer any 4 questions:

4 x 2 = 8

9. What is Histone octamere?
10. What are the phases of life cycle?
11. What is Tubectomy?
12. What is Holandric genes?
13. What is Anthropological studies?
14. Give any two objections for Darwinism.

Section - C

III. Answer any 3 questions:

3 x 3 = 9

15. Differentiate Heterochromatin and Euchromatin.
16. What is Amphitoky?
17. What are the 3 layers of uterus?
18. Short note on Sumogacy.

Section - D

2 x 5 = 10

IV. Answer any 2 questions:

19. a) What are the salient features of genetic code. (or) www.kalvikadal.in
b) Explain briefly about Erythroblastosis foetalis.
20. a) Write about the detection of foetal disorders during early pregnancy. (or)
b) Explain about parthenogenesis briefly.
