

BIOLOGY - SLIP TEST**STD:12 EM****BIO-BOTANY CHAPTER - 1****Time: 00:30 Min****Max Mark :25****5 x 1 = 5****I. CHOOSE THE CORRECT ANSWERS**

1. Identify the correctly matched pair

| | |
|-------------------------|-----------------------|
| a) Tuber - Allium cepa | c) Rhizome - Musa |
| b) Sucker - Pistia | d) Stolon - Zingiber |
2. Assertion : Sporopollenin preserves pollen in fossil deposits.
Reason : Sporopollenin is resistant to physical and biological decomposition.
 - a) Assertion is true; reason is false
 - b) Assertion is false; reason is true
 - c) Both Assertion and reason are not true
 - d) Both Assertion and reason are true
3. Coelorrhiza is found in

| | |
|-----------|------------|
| a) Paddy | c) Pea |
| b) Bean | d) Tridax |
4. Arrange the layers of anther wall from locus to periphery
 - a) Epidermis, middle layers, tapetum, endothecium
 - b) Tapetum, middle layers, epidermis, endothecium
 - c) Endothecium, epidermis, middle layers, tapetum
 - d) Tapetum, middle layers endothecium epidermis
5. Consider the following statement(s).
 - i) In Protandrous flowers pistil matures earlier
 - ii) In Protogynous flowers pistil matures earlier
 - iii) Herkogamy is noticed in unisexual flowers
 - iv) Distyly is present in Primula

| | |
|---------------------------|----------------------------|
| a) i and ii are correct | c) ii and iii are correct |
| b) ii and iv are correct | d) i and iv are correct |

II VERY SHORT ANSWERS**3 x 2 = 6**

6. Define the term Diplospory.
7. What are clones?
8. What is reproduction?

III SHORT ANSWERS**3 x 3 = 9**

9. List any two strategy adopted by bisexual flowers to prevent self-pollination.
Dichogamy:
10. Write short note on Heterostyly

11. "Endothecium is associated with dehiscence of anther" Justify the statement.

IV LONG ANSWERS**1 x 5 = 5**

12. Explain the conventional methods adopted in vegetative propagation of higher plants.

BIOLOGY – TEST SERIES - 1**STD:12 EM****BIO-BOTANY CHAPTER - 1****Time: 00:30 Min****Max Mark :25****I. CHOOSE THE CORRECT ANSWERS****5 x 1 =5**

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 - Assertion is true; reason is false
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 - Tapetum, middle layers, epidermis, endothecium
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- Consider the following statement(s).
 - In Protandrous flowers pistil matures earlier
 - In Protogynous flowers pistil matures earlier
 - Herkogamy is noticed in unisexual flowers
 - Distily is present in Primula
 - i and ii are correct
 - ii and iv are correct
 - ii and iii are correct
 - i and iv are correct

II VERY SHORT ANSWERS**3 x 2 = 6**

- Define the term Diplospory.
- What are clones?
- What is reproduction?

III SHORT ANSWERS**3 x 3 = 9**

- List any two strategy adopted by bisexual flowers to prevent self-pollination.
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IV LONG ANSWERS**1 x 5 = 5**

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BIOLOGY – TEST SERIES - 6**STD:12 EM****BIO-BOTANY CHAPTER – 1-5****Time: 1:00 Hrs****Max Mark :25****I. CHOOSE THE CORRECT ANSWERS****10 x 1 =10**

- In pea plants, yellow seeds are dominant to green. If a heterozygous yellow seed plant is crossed with a green seeded plant, what ratio of yellow and green seeded plants would you expect in F1 generation?
 - 9 : 1
 - 1 : 3
 - 3 : 1
 - 50 : 50
- Among the following characters which one was not considered by Mendel in his experimentation pea?
 - Stem - Tall or dwarf
 - Trichomal glandular or non-glandular
 - Seed - Green or yellow
 - Pod - Inflated or constricted
- An allohexaploidy contains
 - Six different genomes
 - Six copies of three different genomes
 - Two copies of three different genomes
 - Six copies of one genome
- Size of pollen grain in Myosotis
 - 10 micrometer
 - 20 micrometer
 - 200 micrometer
 - 2000 micrometer
- The time duration for sterilization process by using autoclave is _____ minutes and the temperature is _____.
 - 10 to 30 minutes and 125° C
 - 15 to 30 minutes and 121° C
 - 15 to 20 minutes and 125° C
 - 10 to 20 minutes and 121° C
- The scar left by funiculus in the seed is
 - tegmen
 - radicle
 - epicotyl
 - hilum
- Match list I with list II.

| List I | List II |
|---|---------------------------|
| A. A pair of chromosomes extra with diploid | i) monosomy |
| B. One chromosome extra to the diploid | ii) tetrasomy |
| C. One chromosome loses from diploid | iii) trisomy |
| D. Two individual chromosomes lose from diploid | iv) double monosomy |
| a) A-i, B-iii, C-ii, D-iv | b) A-ii, B-iii, C-iv, D-i |
| c) A-ii, B-iii, C-i, D-iv | d) A-iii, B-ii, C-i, D-iv |

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8. "Gametes are never hybrid". This is a statement of
 - a) Law of dominance
 - b) Law of independent assortment
 - c) Law of segregation
 - d) Law of random fertilization
9. Pure tall plants are crossed with pure dwarf plants. In the F1 generation, all plants were tall. These tall plants of F1 generation were selfed and the ratio of tall to dwarf plants obtained was 3 : 1. This is called
 - a) Dominance
 - b) Inheritance
 - c) Codominance
 - d) Heredity
10. The prevention of large scale loss of biological integrity
 - a) Biopatent
 - b) Bioethics
 - c) Biosafety
 - d) Biofuel

II VERY SHORT ANSWERS

6 x 2 = 12

11. What is Cantharophily?
12. Name the chemicals used in gene transfer.
13. What is the difference between missense and nonsense mutation?
14. What is reproduction?
15. What is meant by cytoplasmic inheritance?
16. Differentiate incomplete dominance and codominance.

III SHORT ANSWERS

6 x 3 = 18

17. Write the various steps involved in cell suspension culture.
18. Write short note on Heterostyly
19. What do you know about Germplasm conservation? Describe it.
20. List any two strategy adopted by bisexual flowers to prevent self-pollination.
21. Write the salient features of Sutton and Boveri concept.
22. Write the advantages of herbicide tolerant crops.

IV LONG ANSWERS

2 x 5 = 10

23. How sex is determined in monoecious plants. write their genes involved in it.
24. Write the benefits and risk of Genetically Modified Foods.

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BIOLOGY – TEST SERIES - 2**STD:12 EM****BIO-BOTANY CHAPTER - 2****Time: 00:30 Min****Max Mark :25****I. CHOOSE THE CORRECT ANSWERS****5 x 1 =5**

- Select the period for Mendel's hybridization experiments
 - 1856 - 1863
 - 1850 - 1870
 - 1857 - 1869
 - 1870 - 1877
- How many different kinds of gametes will be produced by a plant having the genotype AABbCC?
 - Three
 - Four
 - Nine
 - Two
- "Gametes are never hybrid". This is a statement of
 - Law of dominance
 - Law of independent assortment
 - Law of segregation
 - Law of random fertilization
- In a test cross involving F1 dihybrid flies, more parental type offspring were produced than the recombination type offspring. This indicates
 - The two genes are located on two different chromosomes
 - Chromosomes failed to separate during meiosis
 - The two genes are linked and present on the same chromosome
 - Both of the characters are controlled by more than one gene
- The dominant epistasis ratio is
 - 9 : 3 : 3 : 1
 - 12 : 3 : 1
 - 9 : 3 : 4
 - 9 : 6 : 1

II VERY SHORT ANSWERS**3 x 2 = 6**

- Differentiate incomplete dominance and codominance.
- What is meant by true breeding or pure breeding lines / strain?
- What are multiple alleles?

III SHORT ANSWERS**3 x 3 = 9**

- What are the reasons for Mendel's successes in his breeding experiment?
- Explain the law of dominance in monohybrid cross.
- Name the seven contrasting traits of Mendel.

IV LONG ANSWERS**1 x 5 = 5**

- Explain with an example how single genes affect multiple traits and alleles the phenotype of an organism.

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BIOLOGY – TEST SERIES - 3**STD:12 EM****BIO-BOTANY CHAPTER - 3****Time: 00:30 Min****Max Mark :25****I. CHOOSE THE CORRECT ANSWERS****5 x 1 = 5**

- 1 The A and B genes are 10 cM apart on a chromosome. If an AB/ab heterozygote is testcrossed to ab/ab, how many of each progeny class would you expect out of 100 total progeny?
 a) 25 AB, 25 ab, 25 Ab, 25 aB b) 10 AB, 10 ab
 c) 45 AB, 45 ab d) 45 AB, 45 ab, 5 Ab, 5aB
- 2 If haploid number in a cell is 18. The double monosomic and trisomic number will be
 a) 35 and 37 b) 34 and 35
 c) 37 and 35 d) 17 and 19
- 3 Match list I with list II.
 List I
 A. A pair of chromosomes extra with diploid
 B. One chromosome extra to the diploid
 C. One chromosome loses from diploid
 D. Two individual chromosomes lose from diploid
 a) A-i, B-iii, C-ii, D-iv b) A-ii, B-iii, C-iv, D-i
 c) A-ii, B-iii, C-i, D-iv d) A-iii, B-ii, C-i, D-iv
- List II
 i) monosomy
 ii) tetrasomy
 iii) trisomy
 iv) double monosomy
- 4 Assertion (A) : Gamma rays are generally use to induce mutation in wheat varieties.
 Reason (R) : Because they carry lower energy to non-ionize electrons from atom.
 a) A is correct. R is correct explanation of A.
 b) A is correct. R is not correct explanation of A.
 c) A is correct. R is wrong explanation of A.
 d) A and R is wrong.
- 5 The point mutation sequence for transition, transition, transversion and transversion in DNA are
 a) A to T, T to A, C to G and G to C
 b) A to G, C to T, C to G and T to A
 c) C to G, A to G, T to A and G to A
 d) G to C, A to T, T to A and C to G

II VERY SHORT ANSWERS**3 x 2 = 6**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | C | B | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|---|

- 6 From the above figure identify the type of mutation and explain it.
- 7 Draw the diagram of different types of aneuploidy.

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8 What is the difference between missense and nonsense mutation?

III SHORT ANSWERS

3 x 3 = 9

9 What is gene mapping? Write its uses.

10 Mention the name of man-made cereal. How it is formed?

11 Write the salient features of Sutton and Boveri concept.

IV LONG ANSWERS

1 x 5 = 5

12 When two different genes came from same parent they tend to remain together.

i) What is the name of this phenomenon?

ii) Draw the cross with suitable example.

iii) Write the observed phenotypic ratio.

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BIOLOGY – TEST SERIES - 4**STD:12 EM****BIO-BOTANY CHAPTER - 4****Time: 00:30 Min****Max Mark :25****I. CHOOSE THE CORRECT ANSWERS****5 x 1 =5**

- 1 Assertion : Agrobacterium tumifaciens is popular in genetic engineering because this bacterium is associated with the root nodules of all cereals and pulse crops.
Reason: A gene incorporated in the bacterial chromosomal genome gets automatically transferred to the cross with which bacterium is associated.
a) Both assertion and reason are true. But reason is correct explanation of assertion.
b) Both assertion and reason are true. But reason is not correct explanation of assertion.
c) Assertion is true, but reason is false.
d) Assertion is false, but reason is true.
- 2 pBR 322, BR stands for
a) Plasmid Bacterial Recombination b) Plasmid Bacterial Replication
c) Plasmid Boliver and Rodriguez d) Plasmid Baltimore and Rodriguez
- 3 Which of the following one is used as a Biosensors?
a) Electrophoresis b) Bioreactors
c) Vectors d) Electroporation
- 4 Consider the following statements:
I. Recombinant DNA technology is popularly known as genetic engineering is a stream of biotechnology which deals with the manipulation of genetic materials by man invitro
II. pBR322 is the first artificial cloning vector developed in 1977 by Boliver and Rodriguez from E.coli plasmid
III. Restriction enzymes belongs to a class of enzymes called nucleases.
Choose the correct option regarding above statements.
a) I & II b) I & III
c) II & III d) I, II & III
- 5 Which one of the following palindromic base sequence in DNA can be easily cut at about the middle by some particular restriction enzymes?
a) 5 CGTTCG 3 3 ATCGTA 5 b) 5 GATATG 3 3 CTAATA 5
c) 5 GAATTC 3 3 CTTAAG 5 d) 5 CACGTA 3 3 CTCAGT 5

II VERY SHORT ANSWERS**3 x 2 = 6**

- 6 What are the enzymes you can use to cut terminal end and internal phospho di ester bond of nucleotide sequence?
- 7 Name the chemicals used in gene transfer.
- 8 What are the materials used to grow microorganism like Spirulina?

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III SHORT ANSWERS

3 x 3 = 9

- 9 Write the advantages and disadvantages of Bt cotton.
- 10 Write the advantages of herbicide tolerant crops.
- 11 How do you use the biotechnology in modern practice?

IV LONG ANSWERS

1 x 5 = 5

- 12 What are restriction enzyme? Mention their type with role in Biotechnology.



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BIOLOGY – TEST SERIES - 5**STD:12 EM****BIO-BOTANY CHAPTER - 5****Time: 00:30 Min****Max Mark :25****I. CHOOSE THE CORRECT ANSWERS****5 x 1 = 5**

- The prevention of large scale loss of biological integrity
 - Biopatent
 - Bioethics
 - Biosafety
 - Biofuel
- Select the incorrect statement from given statement.
 - A tonic used for cardiac arrest is obtained from *Digitalis purpurea*.
 - Medicine used to treat Rheumatic pain is extracted from *Capsicum annum*.
 - An anti malarial drug is isolated from *Cinchona officinalis*.
 - Anti-carcinogenic property is not seen in *Catharanthus roseus*.
- Virus free plants are developed from
 - Organ culture
 - Meristem culture
 - Protoplast culture
 - Cell suspension culture
- Totipotency refers to
 - capacity to generate genetically identical plants.
 - capacity to generate a whole plant from any plant cell / explant.
 - capacity to generate hybrid protoplasts.
 - recovery of healthy plants from diseased plants.
- Solidifying agent used in plant tissue culture is
 - Nicotinic acid
 - Cobaltous chloride
 - EDTA
 - Agar

II VERY SHORT ANSWERS**3 x 2 = 6**

- Give the examples for micro propagation performed plants.
- Write the protocol for artificial seed preparation.
- What is the name of the process given below? Write its 4 types.

III SHORT ANSWERS**3 x 3 = 9**

- What do you mean Embryoids? Write its application.
- Write the various steps involved in cell suspension culture.
- What do you know about Germplasm conservation? Describe it.

IV LONG ANSWERS**1 x 5 = 5**

- Based on the material used, how will you classify the culture technology? Explain it.

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