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SEAT No. \_\_\_\_\_

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SARDAR PATEL UNIVERSITY

B.SC. (semester-6) EXAMINATION

BOTANY-US06CBOT24 (PLANT BIOTECHNOLOGY)

7-04-2022, THURSDAY, TIME: 03 P.M. TO 05 P.M.

Que-1 multiple choice questions:

(10)

1. Tissue culture technique was first practiced by \_\_\_\_\_  
a) White b) Haberlandt c) Halperin d) Skoog
2. The formation of embryoids from the pollen grains in the tissue culture medium is due to \_\_\_\_\_.  
(a) Organogenesis (b) Test tube culture (c) Double fertilization (d) Cellular totipotency
3. Haploid plants can be obtained from \_\_\_\_\_.  
(a) Anther culture (b) Bud culture (c) Leaf culture (d) Root culture
4. Restriction enzymes are isolated from  
(a) Virus (b) Fungi (c) Protozoa (d) Bacteria
5. Primer used for the process of polymerase chain reaction are \_\_\_\_\_  
a) Single stranded DNA oligonucleotide b) Double stranded DNA oligonucleotide  
c) Single stranded RNA oligonucleotide d) Double stranded RNA oligonucleotide
6. Polymerase used for PCR is extracted from \_\_\_\_\_  
(a) Escherichia coli (b) Homo sapiens  
c) Thermus aquaticus (d) Saccharomyces cerevisiae
7. Plant gene transfer method is used in genetic engineering to \_\_\_\_\_.  
a) Transfer modified gene b) Introduce new gene c) Both d) Only A
8. In Genetic engineering the a modified or new gene transfer is done to \_\_\_\_\_.  
a) Make diseases resistant plant b) To introduce new traits  
c) To increase the yield of secondary metabolites d) All
9. Which is a genetically modified crop?  
a) Bt-cotton b) Bt-brinjal c) Golden rice d) All
10. The expression of a Transgene in the target tissue is identified by  
a) Transgene b) Promoter c) Enhancer d) Reporter gene

Que-2 Fill in the blanks or true -false

(08)

1. Excision and insertion of a gene is called \_\_\_\_\_.

P.T.O.



2. The DNA fragments have sticky ends due to \_\_\_\_\_.
3. PCR full form \_\_\_\_\_.
4. The first transgenic plant to be produced is \_\_\_\_\_.
5. The pair of hormones required for a callus to differentiate are \_\_\_\_\_.
6. Haploid plants can be obtained from anther culture. True or False
7. Name of a vector \_\_\_\_\_
8. Bt cotton is the first transgenic plant. True or False.

Que-3 Answer in short (any ten)

(20)

1. What is the plant tissue culture?
2. What are the four steps of plant tissue culture?
3. What are the secondary metabolites?
4. What are cloning vectors?
5. What are the types of cloning vectors?
6. What is Endonuclease?
7. What is direct gene transfer?
8. What are the advantages of gene transfer?
9. How does Agro bacterium transform plant cells?
10. What are the useful applications of biotechnology?
11. What is anti sense technology?
12. What is flavr savr tomato?

Que-4 Answer in detail about any four

(32)

1. Application of plant tissue culture
2. Protoplast isolation, culture and fusion.
3. RFLP
4. Chromosome walking
- 5 Reporter genes
6. Micro projectile bombardment
7. Golden rice
8. Moon dust carnation

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