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

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SARDAR PATEL UNIVERSITY

T. Y. B.Sc. (V SEMESTER) EXAMINATION

2018

Monday, 22<sup>nd</sup> October

10.00 a.m. to 1.00 p.m.

USO5CENVO1 ENVIRONMENTAL BIOTECHNOLOGY

Total Marks: 70

Q.1. Select the correct answer and write it in the answer sheet (10)

1. \_\_\_\_\_ represents Ex Situ method of Bioremediation  
 (a) Bioventing (b) Biosparging (c) Biopiling (d) Bioslurping
2. Bioremediation is a natural process which relies on \_\_\_\_\_ to alter contaminants harmless or less toxic.  
 (a) Bacteria (b) Fungi (c) Plants (d) All three
3. \_\_\_\_\_ is injection of air into the aquifer  
 (a) Bioventing (b) Biosparging (c) Biopiling (d) Bioslurping
4. The phytoremediation of soil contaminated with radioactive compound was done by \_\_\_\_\_ plant during Chernobyl Accident  
 (a) Sunflower (b) Sugarcane (c) Salix (d) Mustard
5. The growing of plants in clean water until a large root system is developed is a technique called \_\_\_\_\_  
 (a) Hydrology (b) Hydrophytes (c) Aeroponics (d) Hydroponic
6. \_\_\_\_\_ culture is useful for production of Haploid plants  
 (a) Meristem (b) Ovary (c) Anther (d) Callus
7. Auxins, Gibberelins and cytokinins are the \_\_\_\_\_ used for tissue culture medium  
 (a) Growth Inhibitors (b) Vitamins (c) Growth regulators (d) Nutrients
8. \_\_\_\_\_ has combined feature of plasmid and phage and has high transformation efficiency  
 (a) Plasmid (b) desmid (c) Cosmid (d) Bacteria
9. \_\_\_\_\_ RE is used for gene manipulation  
 (a) Type I (b) Type II (c) Type III (d) Type IV
10. \_\_\_\_\_ are small circular extrachromosomal elements replicating in bacteria  
 (a) Lambda phage (b) Plasmids (c) Cosmids (d) Viruses

Q.2 Answer the following in brief (Any Ten) (20)

1. Explain Bioremediation and state its significance
2. What is Intrinsic Bioremediation?
3. Explain Bioventing
4. Define 'Phyto remediation'
5. What are Hyper accumulators?
6. What is Phyto extraction ?
7. Explain the principle of Totipotency
8. State the use of Autoclave
9. What is Anther culture ?
10. What are Vectors ?
11. Explain Restriction Endonucleases
12. What are Genetically modified organisms?

(1)

(P.T.O.)

- Q.3 (a) Discuss various *In situ* bioremediation techniques (05)  
(b) Explain Composting and Land farming (05)

OR

- Q.3. (a) Explain in brief the *Ex situ* bioremediation processes (05)  
(b) Discuss Biopiling (05)

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- Q.4. (a) Discuss advantages and disadvantages of Phyto remediation (06)  
(b) What is Rhizofiltration ? Explain its mechanism (04)

OR

- Q.4. (a) Explain the process of Phytovolatilization and phytostabilization (06)  
(b) Discuss the Phyto degradation process (04)

- Q.5. (a) Discuss the aseptic conditions during tissue culture (06)  
(b) Write in brief about Callus culture (04)

OR

- Q.5. (a) Describe various methods of Organ culture (05)  
(b) Discuss the artificial skin production (05)

- Q.6. What are vectors ? Explain the types and their roles (10)

OR

- Q.6. What is R DNA technology ? Discuss with suitable illustration (10)

