SEAT No._____ No. of Printed Pages : 2

[60]

SARDAR PATEL UNIVERSITY

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

2020

Thursday, 24th December

2:00 p.m. to 4.00 p.m.

USO5CENV21 ENVIRONMENTAL BIOTECHNOLOGY

Total Marks: 70

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

1.Restriction endonuclease _____cuts the DNA, 25 base pair away from recognition site
(a) Type I (b) Type II (c) Type III (d) Type IV

2. In r- DNA technology, _____ is used as tool to transfer genes
(a) Yeast (b) Bacteria (c) Plasmid (d) Algae

3. The yellowish, clear liquid content after removal of fibrin and cells from the blood is known as_____
(a) Tissueextract (b) Serum (c) Cagula (d) Plasma clot

4. The sterilization of thermolabile compounds is carried out by _____
(a) Autoclave (b) Hot Air Oven (c) Membrane filter (d) Laminar Air flow

5. _____ developed from anther culture are used for cytogenetic studies
(a) Haploids (b) Diploids (c) Triploids (d) Tetraploids

6.Bioremediation which occurs without human intervention is called _____
(a) Bioaugmentation (b) Bio stimulation (c) Natural Attenuation (d) Bio-venting

7._____is ex situ method which involves spreading contaminated soils over a large area
(a) Composting (b) Land farming (c) Bioreactor (d) Biopiling

8._____ refers to the immobilization of contaminants in the soil through absorption, accumulation, precipitation in roots
(a) Phytoextraction (b) Phytostabilization
(c) Phytodegradation (d)Rhizofiltration

9. The filtering of water through a mass of roots to remove toxic substances or excess of nutrients is _____
(a)Phytoextraction (b) Rhizofiltration (c) Phytotransformation (d) Phytovolatilization

10. ____is aquatic species for phytoremediation
(a) Duckweed (b) Willow (c) Spinach (d) Tobacco

Q.2. Write true or false for following **(08)**

1. Cosmid is a hybrid of Plasmid and bacteriophage
2. For Insulin production, the Human Insulin gene was introduced in E.coli
3. Protoplast are plant cells without a plasma membrane and cell wall
4. Auxins promote cell division in tissue culture
5. Intrinsic bioremediation uses microorganisms present in the environment to biodegrade harmful contaminant.
6. Bio stimulation involves the processing of contaminantsthrough an engineered containment system.
7. Phytoremediation isless expensive; it is less intrusive and more aesthetically pleasing
8. Phytostabilizationincludes absorption of contaminants,convert them to form volatile molecules and finally release them to the atmosphere.

Q.3. Answer the following in brief (any 10) **(20)**

1. What is R DNA?
2. Explain Blunt end and Sticky end with illustration
3. What are Restriction Endonucleases ?State their function
4. Advantages and disadvantages of Tissue culture
5. Explain Cryopreservation
6. Nutrient media in plant tissue culture
7. What is Bioremediation? Explain Intrinsic and accelerated Bioremediation
8. Write in brief about composting
9. Mention the factors affecting bioremediation
10. Define ' Phyto remediation'
11. What are Hyper accumulators?
12. What is Phytoextraction ?

Q.4. Write a detailed note on following(Anyfour) **(32)**

1. Applications of r DNA technology
2. Genetically modified crops
3. Aseptic conditions in tissue culture
4. Applications of tissue culture
5. Discuss the In Situ methods of Bioremediation
6. Write about Land farming and Bio piling methods
7. Discuss advantages and disadvantages of Phytoremediation and add a note on Rhizofiltration
8. Discuss various mechanisms of Phytoremediation

———X———