(17) SEAT No._____

SARDAR PATEL UNIVERSITY No. of Printed Pages : 02

B.Sc. (VI SEMESTER) Botany

Paper: US06CBOT05 - Plant Biotechnology

Date: 03-04-2019 Day: Wednesday Time: 10.00 a.m. to 01.00 p.m.

Marks: 70

Q-1 Choose the most appropriate answer: (10)

(1)The first somatic hybrid plant was produced by fusing_____.
(a) *Nicotiana tabacum & N.glauca* (b) *N.glauca & N.langsdorfii*
(c) *N.langsdorfii & N.tabacum* (d) *N.tabacum & N.plumbajinifolia*

(2)Shoot formation during differentiation occurs in response to_____treatment.
(a) high auxin (b) high abscissic acid
(c) low auxin (d) high cytokinin

(3)Part of plant used for culturing is called as_____.
(a) callus (b) stock (c) cutting (d) explants

(4)Northern blotting immobilizes:
(a) proteins (b) RNA (c) DNA (d) RNA & DNA

(5)Which of the following organism can clean the oil spill?
(a) super bugs (b) viruses (c) algae (d) salmonella

(6)Addition of ddCTP to the reaction mixture of DNA sequencing acts as a/an:_____.
(a) terminator (b) promoter (c) enhancer (d) initiator

(7)Which one of the following is a stop codon?
(a)ATG (b)TAT (c)TGG (d)TAG

(8)Tra genes are carried by_____plasmids.
(a) Col (b)Virulence (c) Fertility (d) Resistance

(9)Which one of the following is an antifungal protein of Maize?
(a) Seamatin (b) Cecropins (c) Altacins (d) Lysozyme

(10)Which of the following substance can affect shoot elongation?
(a) Cadmium (b) Phenyl oxidase (c) Auxin (d) All of these

Q-2 Answer briefly on <u>any ten</u>: (10)

(i) Why we need to adopt plant tissue culture technology?

(ii) Define: Totipotency.

P.T.O.

(iii) What is disinfection?

(iv) Explain: Northern blotting.

(iv) What is DNA finger printing?

(v) Write the principle of PCR.

(vi) What are Shuttle vectors? Give an example.

(vii) What are the advantages of plasmids?

(viii) Why complimentary DNA is essential for the expression of eukaryotic genes in bacteria?

(ix) Give the names of any four transgenic plants carrying the genes for herbicide tolerance.

(x) Write the role of superbug.

(xi) What are the applications of microbial enzymes?

(xii) Explain the principle of particle bombardment

Q-3 Describe the applications of tissue-culture in agriculture and industry. (10)

OR

Q-3 Write notes on: (a) Sterilization. (05)
(b) Protoplast fusion. (05)

Q-4 Write in brief: (a) Applications of DNA fingerprinting. (05)
(b) Applications of PCR. (05)

OR

Q-4 Give an account of the types and role of restriction endonucleases in detail. (10)

Q-5 Describe: Direct gene transfer methods for plants. (10)

OR

Q-5 Write about: (a) Microinjection. (05)
(b) Reporter genes. (05)

Q-6 Write notes on: (a) Golden rice. (05)
(b) Engineering plants to improve oil & fat quality. (05)

OR

Q-6 Describe in brief: (a) Edible vaccines. (05)
(b) GM tomato. (05)

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