Department of Biochemistry and Molecular Biology, SUST

BMB 425. Plant Biotechnology. Full mark: 10. Time: 60 min

4th year 1st semester Midtest 1, 2014

1. What are the minimum facilities needed for the development of a plant tissue culture set up. 1.0
2. Describe two major plant growth regulators. 0.75
3. What is embryo culture? Write down the application of embryo culture. 0.75
4. What do you understand by micropropagation? What are the major stages of micropropagation in vitro? Discuss the advantage and problems associated with micropropagation. 2.0
5. Write True (T) or False (F) against the following statements and write the true statement if you find any false statement- 0.25X10=2.5

A) Agar is most popular solidifying agent
B) Optimum pH of a nutrient medium is 7.5
C) The standard carbon source for a nutrient medium is fructose.
D) Redifferentialtion of cells is known as cytodifferentiation
E) Somatic embryogenesis in the opposite of zogotic embryogenesis.
F) Morphological marker has small effects on phenotype
G) Morphological markers are highly influenced by the environment.
H) Biochemical marker is DNA sequence that is readily detectable.
I) Recalcitrant seeds can be store for a long time in dry condition.
J) Callus culture is from a non-organized tumor tissue.

6. What is molecular marker? Write down the qualities of a good molecular marker. 0.5
7. Write down the difference between RAPD, RFLP and AFLP in the context of their characteristics. 1.0
8. Write short notes on the following (any two): 0.75X2=1.5

Cellular totipotency
Media composition for a standard culture system
Somatic embryogenesis