

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.

Q.1 A) Attempt all of the following (MCQ) (06)

- a) The groups of microorganisms which are able to fix atmospheric nitrogen are called _____.
 - i) Biofertilizers
 - ii) Biological nitrogen fixers
 - iii) Chemical fertilizers
 - iv) Fertilizers
- b) A nitrogen fixing blue green alga is _____.
 - i) *Ulothrix*
 - ii) *Anabaena*
 - iii) *Spirogyra*
 - iv) *Rhizobium*
- c) Aquatic fern which is an excellent biofertilizers _____.
 - i) *Salvia*
 - ii) *Marsilea*
 - iii) *Azolla*
 - iv) *Pteridium*
- d) In mushroom cultivation, spawn is _____.
 - i) Compost
 - ii) Vegetative mycellium
 - iii) Button stage
 - iv) Harvest mushroom
- e) Leghaemoglobin is found in _____.
 - i) Root nodules of legumes
 - ii) Coralloid roots
 - iii) Mycorrhiza
 - iv) Cyanobacteria
- f) Part of plant used for tissue culture is called _____.
 - i) Scion
 - ii) Stock
 - iii) Explant
 - iv) Callus

B) Attempt the following: (one sentence / statement / definition) (06)

- a) Define callus.
- b) Give the botanical names of any two edible mushrooms.
- c) What is neem cake?
- d) Define biocontrol.
- e) Give applications of *Spirullina*
- f) What is bioenergy?

Q.2 Attempt ANY THREE of the following: (12)

- a) Give the advantages of tissue culture.
- b) Comment on scope and importance of energy plantation.
- c) Describe the environmental health hazards of pesticides.
- d) Describe mass cultivation of *Spirullina* for SCP.

Q.3 Attempt ANY FOUR of the following: (12)

- a) Describe neem cake in detail.
- b) What are the biological fuels? Explain their importance.
- c) Comment on advantages of non-conventional food.
- d) Describe in brief the preparation of any one recipe of mushroom.
- e) Describe various types of biofertilizers used in agriculture.

Q.4 Attempt ANY TWO of the following: (12)

- a) Give a list of substances and organisms involved in biogas production.
- b) Enlist agents of biocontrol with suitable examples.
- c) Give steps of plant tissue culture in brief.

Q.5 Attempt ANY TWO of the following: (12)

- a) Give need of biocontrol and its importance
- b) Explain nutritive value of mushroom.
- c) Describe method of spawning in *Agaricus* mushroom