

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI 600 086
(For candidates admitted during the academic year 2015 – 2016 & thereafter)

SUBJECT CODE: 15BT/MC/PB14

B.Sc. DEGREE EXAMINATION NOVEMBER 2018
BRANCH V.A.PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FIRST SEMESTER

COURSE : CORE
PAPER : PRINCIPLES OF APPLIED BIOTECHNOLOGY
TIME : 3 HOURS MAX. MARKS: 100

SECTION A (18 X 1 Mark=18)

I.Choose the correct answer (5 marks)

- _____ serves as an important biofertilizer in paddy field
a. *Cyanobacteria* b. *Clostridium* c. *Mycorrihiza* d. *Frankia*
- In which of the following stages of development mushrooms should be picked?
a. Cup stage b. Button stage c. Flat or open stage d. In any stage
- Starter cultures in yogurt are _____
a. *Acetobacterpasteurianus* & *Streptococcus mitis*
b. *Propioni bacterium* & *Bacillus species*
c. *Lactobacillus bulgaricus* & *Streptococcus thermophilus*
d. None of these
- Baker's yeast is the general term given to all forms of
a. *Candida inconspicua* b. *Saccharomyces unisporus*
c. *Kluyveromyces marxianus* d. *Saccharomyces cerevisiae*
- Which substrate is used in the fermentation of citric acid?
a. Beet molasses b. Sucrose c. Starch hydrolysed. All of these

II.Fill in the blanks (5 marks)

- Nitrogen fixation by Cyanobacteria takes place in the specialized cells called as _____.
- Oyster mushroom is species of _____.
- In cheese production _____, a complex of enzymes is added for coagulation of milk.
- Penicillin is recovered after fermentation as _____.
- _____ is added to the slurry to precipitate calcium citrate for the recovery of citric acid after fermentation.

III. True / False (4 marks)

- Cynaobacteria or blue-green algae are used as biofertilizers in rice fields to fix nitrogen.
- Amanita is a poisonous mushroom.
- Camembert cheese is made from Sheep's milk and Roquefort from Cow's milk.
- Penicillin is produced by anaerobic fermentation.

III. Match the following**(4 marks)**

- | | |
|--------------------------|--------------------------------------|
| 15. Biofertilizer | a. <i>Streptococcus thermophilus</i> |
| 16. Paddy straw mushroom | b. <i>Aspergillus niger</i> |
| 17. Yoghurt | c. <i>Volvvariella S</i> |
| 18. Citric acid | d. <i>Nostoc</i> |

IV. Answer any six in 50 words (6 x3 = 18 marks)

19. What is single cell protein?
20. Define biofertilizers? Name 2 cyanobacteria that are used as biofertilizers.
21. Give 3 examples each of edible and non edible mushrooms.
22. Write short notes on spawn running.
23. What are starter cultures in cheese making?
24. What is rennet?
25. What is Baker's yeast?
26. What are the uses of citric acid in food industry?
27. What is downstream processing?

SECTION-B**Answer any four questions in 200 words (4x6=24marks)**

28. Write briefly about algal biofertilizers and their uses.
29. Write a note on nutritive value of mushrooms.
30. Explain morphology of *Agaricus* with a neat diagram.
31. Describe the different types of cheese?
32. What are the forms and functions of yeast in bread making?
33. Write about the media preparation for industrial fermentation.

SECTION-C**Answer any TWO question in 1000 words****(2x20=40marks)**

34. Explain the mass cultivation of Single Cell Protein (SCP).
35. Write an account on cultivation of *Pleurotus sp.*
36. Explain in detail the steps involved in production of cheese. Also draw the flow diagram.
37. Describe the industrial process for manufacture of citric acid with a neat flowsheet.
