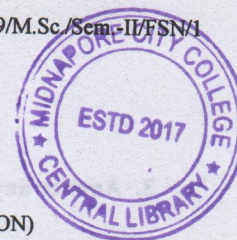


**PG (NEW) CBCS**  
**M.Sc. Semester-II Examination, 2019**  
**FOOD SCIENCE & NUTRITION**  
**PAPER: FSN-202**

(FOOD MICROBIOLOGY AND FOOD PRESERVATION)

**Full Marks: 40****Time: 2 Hours****1. Answer any four questions from the following:****4×2=8**

- a) Write down the differences between "Gram positive and Gram negative bacteria".
- b) Define coenocytic and septate hyphae.
- c) What is YM shift?
- d) Write down the advantages of dehydration over sun drying.
- e) What is 'Radappertization'? State its typical level of doses.
- f) What do you mean by 'D-value and F-value sterilization'?
- g) What do you mean by 'Pasteurization'?
- h) What is 'Rancidity and Putrifaction'?

**2. Answer any four questions from the following:****4×4=16**

- a) Write down different steps of the lytic life cycle of bacteriophage. Distinguish between *Myoviridae* and *Siphoviridae* family phage. 2+2
- b) Why do the bacteria enter in the stationary phase? Define bactericidal and bacteriostatic agents. 2+2
- c) Bacterial population increases from  $10^3$  cells to  $10^9$  cells in 10 hour. Compute the growth rate constant?
- d) Briefly describe the extrinsic factors for microbial growth in food material.
- e) Write down any four major causes of food spoilage.
- f) Write any four major criteria for an ideal preservative.
- g) Mention two major causes of fruits and vegetable spoilage. Write the importance of IMF for food preservation. 2+2
- h) Write down two preservation techniques that can be applied for milk and milk product preservation.

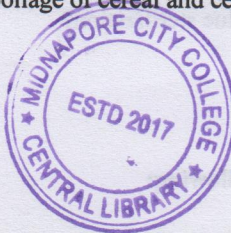
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(2)

**3. Answer any two questions from the following:****8×2=16**

- a) Write down the different types of asexual spores observed in fungi. Briefly explain the sexual reproduction of Ascomycetes with diagram. 3+5
- b) Write down the function of following proteins during bacterial cell division:- FtsZ, FtsA, FtsK, FtsI, ZipA, MinD, MinE, Transglycosylases. 1×8
- c) Describe the inhibition and killing principle employed in food preservation. 4+4
- d) Write the name of two microorganisms that causes meat spoilage. What is lathyrism and mention its toxin. State the toxicity effect of 'Afla-toxin' that causes spoilage of cereal and cereal products. 2+2+4



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