

U.G. 5th Semester Examination - 2020**Microbiology****[HONOURS]****Discipline Specific Elective (DSE)****Course Code : MB(H)/DSE-02/PR****[PRACTICAL]****(Microbial Biotechnology)**

Full Marks : 20

Time : 2 Hours

*The figures in the right-hand margin indicate marks.*Answer **any two** of the following 10×2=20

1. Describe the principle of the technique for immobilizing yeast cells in alginate beads and determine its enzymatic activity. State the advantage of using immobilized yeast cells in fermentation processes for ethanol production? 8+2=10
2. What is meant by immobilized enzymes? Why are immobilized enzymes more stable? Describe briefly the method for enzyme immobilization in sodium alginate beads? 2+2+6=10
3. Why do bacteria produce pigment? State the benefits of using microbial pigments as food grade coloring

[Turn over]

agents. Write three examples of microbial pigments, source microorganism and respective use.

2+2+6=10

4. Which bacteria are used for amylase production? Why do microbes produce amylase enzymes? Describe the principle for the isolation and identification of protease producing bacteria from soil. 2+2+6=10