

**R09**

**Code No: C0303**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD  
M.Tech I Semester Examinations March/April-2011  
GENERAL AND INDUSTRIAL MICROBIOLOGY  
(BIOTECHNOLOGY)**

**Time: 3hours**

**Max.Marks:60**

**Answer any five questions  
All questions carry equal marks**

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1. What selection procedures would you use in process of isolating from a soil sample:  
a) An endospore forming organism.  
b) A non spore forming sliding organism.  
c) A psychrophilic organism. [12]
2. What differences might exist in sub culturing the colony of desired organism from selective agar media? What additional steps should be taken to assure culture purity? [12]
3. List the advantages and disadvantages of each of the following methods that can be used to measure microbial biomass or numbers:  
(a) Direct microscopic count,  
(b) Viable plate count,  
(c) Turbidity measurement, and  
(d) Dry weight measurement. [12]
4. What factors keep the amount of secondary metabolites produced by normal cultures at low levels? How does the industrial microbiologist circumvent these factors to generate a high-yielding fermentation? [12]
5. What regulatory mechanisms must be bypassed to achieve overproduction of an amino acid in an industrial process? [12]
6. Identify the microorganisms and describe the general biochemical process involved in production of vinegar and Glutamic acid. [12]
7. Discuss in detail about rhizobial inoculants its mass production and field applications. [12]
8. Outline the procedure for industrial production of penicillin. What developments contributed to the increase in yield of penicillin over that originally obtainable? [12]

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