

(139)

Sardar Patel University

M.Sc. III Semester Biotechnology

PS03CBIT01 (Microbial Technology)Date: 29/11/12, Thursday
Time: 2:30 – 5:30pm

Max Marks: 70

Q-1 Select the most appropriate answer from the following 1×8

- I. During fermentation, _____ is regenerated and it returns to glycolysis to pick up more electrons
- | | |
|---------------------|-------------|
| a. ATP | c. Glucose |
| b. NAD ⁺ | d. Pyruvate |
- II. Which of the following is **incorrect**?
- All penicillins are β -lactam antibiotics
 - Penicillins are used in the treatment of all bacterial infection
 - Penicillin is a secondary metabolite
 - The chemical structure of penicillin was determined by Dorothy Crowfoot Hodgkin
- III. The sweet liquid produced during beer production is
- | | |
|---------|----------------------|
| a. Wort | c. Must |
| b. Brix | d. None of the above |
- IV. L-lysine is a member of the :
- | | |
|--------------------|----------------------|
| a. Pyruvate family | c. Aspartate family |
| b. Lysine family | d. Asparagine family |
- V. Which of the following is the **methylotropic yeast**?
- | | |
|------------------------------------|-------------------------------|
| a. <i>Saccharomyces cerevisiae</i> | c. <i>Pichia pastoris</i> |
| b. <i>Candida glabrata</i> | d. <i>Torulopsis glabrata</i> |
- VI. Which of the following is the **traditional SCP**?
- | | |
|--------------|--------------|
| a. Pruteen | c. Chlorella |
| b. Dunalilla | d. Spirulina |
- VII. Steroids are
- | | |
|--------------------------------|----------------------------|
| a. Five membered ring compound | c. Three membered compound |
| b. Four membered ring compound | d. None of the above |
- VIII. Which of the following is **not correct**?
- Exopolysaccharides generally consist of monosaccharides and some non-carbohydrate substituents
 - Xanthan is produced by the fermentation of glucose, sucrose, or lactose by the *Xanthomonas campestris* bacterium
 - Vanillin is a phenolic aldehyde, an organic compound with the molecular formula $C_8H_8O_3$
 - Alginate is a cationic polysaccharide distributed widely in the cell walls of brown algae

- Q.2 Attempt any seven of the following and describe in brief 2×7
- I. Enlist importance of cell permeability in microbial production
 - II. Application of amylases
 - III. Differences in making red & white wine
 - IV. Properties of ergot alkaloids
 - V. Write scientific names of two edible mushroom
 - VI. Symba Process
 - VII. Toxicity profile of SCP
 - VIII. Draw penicillin core structure
 - IX. Basic requirements for making yoghurt
- Q.3 A. Describe industrial production of acetic acid. 06
 B. Describe recovery of penicillin by solvent extraction process. 06
 OR
 B. Write a note on biosynthesis of streptomycin. 06
- Q.4 A. Write a note on types of wine. 06
 B. Discuss biosynthetic pathway of any basic amino acid. 06
 OR
 B. Explain biosynthesis of vitamin B₁₂ in details. 06
- Q.5 A. Explain recovery of single cell oil. 06
 B. Discuss biotransformation of steroid hormones by gut flora. 06
 OR
 B. Write details of PHA classification and regulation of PHB synthesis. Describe the importance of bioplastic in our daily life. 06
- Q.6 A. Discuss microbiology of fermentation and the role of SNF in standardization process of milk. 06
 B. Discuss different sources of exo-polysaccharide and describe structure and composition of any one exo-polysaccharide. 06
 OR
 B. Explain the process involved in treatment of milk for cheese making. 06

ALL THE BEST