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## Fermentations .

### Answer the questions :

- 1) a- Fermentation
- b- Fermentation
- c- Air , water , soil
- D- Sterilization
- e-Fermentor, environmental
- F- Static culture flask
- G- Ethanol
- h- Glycerol
- i- Butanol , acetone
- j - citric acid
- k - gluconic acid
- l- antibiotic .

### 2) A- Characters of industrial organisms :

- 1- The ability to grow rapidly
- 2- easily cultivated in large quantity
- 3- resistance to bacteriophage
- 4- non pathogenic
- 5- produce its useful enzymes rapidly

### B) Maintenance of cultures

- 1- deep culture in soil extract agar
- 2- agar slopes under paraffin
- 3- deep freezing
- 4- lyophilization
- 5- soil cultures

#### **D) Strain development :**

By 1 - Mutation by physical (ultra-violet at high temperature or chemical methods ( nitrous acid )

2- Genetic transfer : modify the genetic information in the chromosome of the cell by transferring to it all or part of the DNA of another strain

#### **E) Fungi forming citric acid .**

*Citromyces sp., Aspergillus fumaricus , A . niger , A.flavus , penicillium sp. , p.chrysogenum and Mucor sp.*

#### **f) Production of riboflavin :**

Cultures of *Eremothecium ashbii* could be used in media containing high amount of iron since this organism is less sensitive to iron . media contain peptone , corn oil , glucose and malt extract .

#### **G) Selectivity of antibiotics :**

The property of selectivity in inhibitory activity. Antibiotics have been called broad spectrum and narrow spectrum depending on the breadth of the microbial species inhibited. Broad spectrum has come to mean inhibition of many Gram - positive and Gram negative microorganisms and certain rickettsia and large viruses