

M.Sc Biotechnology (I-year)

Final Term Examination

BH-002 (Microbial Physiology and Genetics)

Date 15.12.2006

MM: 36

Time : 3 hr

- Q1 Differentiate between **(ANY FOUR)** 2x4=8
1. Latent period and burst period.
 2. Prions and viroids
 3. Cyclic Photophosphorylation and non cyclic photophosphorylation
 4. Homolactic and heterolactic fermentation
 5. Biogenesis v/s abiogenesis
- Q2 Describe any two chemical agents, which acts as mutagens on replicating DNA and describe their mode of action? 3
- Q3 Give different biochemical pathways whereby glucose is utilized by microorganisms indicating account of ATP yield. Why *Clostridium* sp. is an obligate anaerobe? 3
- Q4 Write short notes on **ANY FOUR** of the following 3x4=12
1. One step growth curve
 2. Conjugation
 3. Plasmids
 4. DNA repair mechanism
 5. Ames test
- Q5 List any five bacterial genera found in soil and any five, which are considered as beneficial organisms. How can you enumerate the microbial load in soil? 4
- Q6 How can you differentiate between spore and cyst? What are the various physiological features by which a spore becomes resistant to adverse conditions? 3
- Q7 What is *in vitro* mutagenesis? Explain by giving examples and what is their specific application? Why there is no vaccine against HIV virus. 3