Shahjalal University of Science & Technology, Sylhet Department of Biochemistry & Molecular Biology 2<sup>nd</sup> Year 2<sup>nd</sup> Semester Examination 2012 Course No: BMB 226, Course Title: Microbiology Credit: 3.0, Time: 3.0 hours, Marks: 70

Answer any two questions from each part

## Part A

11. (a) Show the disciplines within the field of microbiology by schematic diagram	3
Write down Koch's Postulates in establishing the cause of a disease.	3
Briefly describe the following disciplines of microbiology.	7
(i) Microbial Ecology	
(ii) Molecular Biology	
(d) Write short note on electron microscope	4.5
10	
2. (a) Discuss the hypothetical stages in the evolution of Prokaryotes and Eukaryotes.	5
(b) Explain Symbiotic hypotheses for the origins of organelles in the eukaryotic cell.	5
(c) What are the environmental conditions required for bacterial cultivation? Describe briefly.	4.5
(d) What are the differences between selective medium and differential medium?	3
// 3. Discuss streak technique for isolating pure cultures of a bacteria.	4.5
What is bacterial growth curve? Explain different stages of the bacterial growth curve.	5
(c) Define following terms. (Any two)	
(i) Antiseptic (ii) Disinfectant (iii) Sterilization (iv) Pasteurization	5
(d) What are the differences between a microbiostatic agent and a microbiocidal agent? Give an	3
example of each.	
Part B	
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4. Discuss the sexual process of biodospore formation.	3
(b) Compare the physiology of fungi and bacteria	3
© Depict the life cycle of Saprolegnia	4
(d) Describe the lytic cycle of a bacteriophage.	5.5
(c) Define lysogeny	2
5. (a) What are three major sources of energy used by microorganism? Define phototroph and chemoorganotrph.	7
(b) What kinds of electron acceptor do microorganisms use? Define fermentation, aerobic	6
respiration and anaerobic respiration	
(c) Name different microorganisms that produce alcohol and acetone which are used in the	4.5
industrial process.	
그리고 하는 것이 되었다. 그가 그렇게 하는 하는 사람이 되었다.	
6. (a) Write short notes of the following terms.	4x3=12
(ii) Nitrogen Cycle (ii) Biogas production (iii) Microbial greenhouse gases.	
List the parts of a light microscope and write their function.	5,5