Shahjalal University of Science and Technology
Department of Biochemistry and Molecular Biology
B.Sc. (Hons) 4th year 1st semester examination, 2014
Course No: BMB 423, Course name: Bioinformatics
Credit 3, Total marks: 70, Time: 3 hrs.

PART-B

Instructions:
Write down the procedure you applied to get your answers using flow charts.
Answer all the questions.

1. You obtained the following sequence by laboratory experiment. Find the name of the gene, its accession number and the organism it belongs. 3

   CTT GTC CCC AGG TCC CCA GGT CAT GCC CTC CTT CTG CCA CCC TGG

2. a. Draw the phylogenetic tree of the following accession number, mentioning the species they belong: NC_004584, NC_001416, X00245, NC_004166, NC_000872, NC_007458. 3

   b. Explain your understading of the phylogenetic relationship of the species by analyzing the obtained phylogenetic tree. 3

3. Write down the names of the genes those are regulated by P^{53} 5

4. Accession number M85050.1 depicts the sequence of Hemoglobin 2x3=6

   a. Write down the protein motifs of the sequence

   b. Reveal the sequence of motif that are located in between 349-360 bp

   c. Draw the sequence logo of EGF_1

5. Draw the evidence view of the protein-protein interaction network of Prion 5