

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2023

B.Tech-VII Semester (BIBT)

COURSE CODE(CREDITS): 18B1WBI731(3)

MAX. MARKS: 15

COURSE NAME: Computational Systems Biology

COURSE INSTRUCTORS: Dr. Raj Kumar

MAX. TIME: 1 Hour

*Note: (a) All questions are compulsory.*

*(b) Marks are indicated against each question in square brackets.*

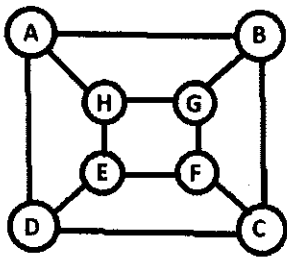
*(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

Q1. A reductionist approach focuses on identifying individual genes, proteins and cells, and studying their specific functions. Discuss the role of holistic approaches towards precision medicine. (CO-1) [2]

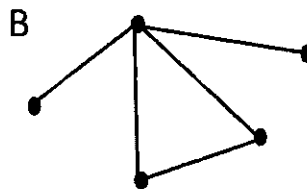
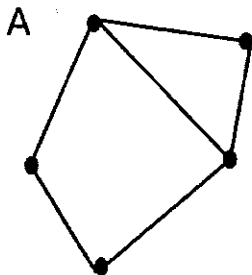
Q2. Systems Biology offers an integrative approach to study the system as a whole. List various parts of a typical systems biology study. (CO-1) [2]

Q3. The transcription network is a critical system that regulates gene expression in a cell. Give a brief description of the functioning of a typical transcriptional regulatory network. (CO-2) [2]

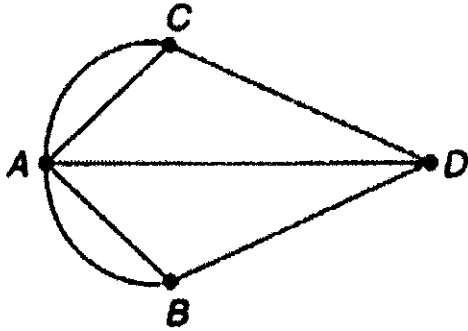
Q4. Describe a bipartite graph. Find out if the given is or not a bipartite graph. (CO-2) [3]



Q5. For the given graphs, explore the possibilities of finding a Hamiltonian circuit. (CO-2) [3]



Q6. If you are allowed to make changes to the given graph, demonstrate how you will solve the famous Königsberg bridge problem? (CO-3) [3]



UNIT TEST EXAMINATION - SEPT-2023