Roll No.:

National Institute of Technology, Hamirpur (HP)
Name of Examination: Dual Degree VII Semester Examination (November -2023)
Electronics & Communication Engineering Department

Semester: 7th
Subject Code: EC – 707

Branch: E&CE
Subject: Wireless Sensor Networks

Maximum Marks: 50

Time: 3 Hour

Note:
1. All the questions are compulsory
2. Each question contains 10 marks (10×5=50)
3. The marks distribution of each question is indicated against the question.

1. i) What are the advantages of SMACS?
   ii) Discuss about the monotone properties of random graph model.   (3+4+3)
   iii) Define the theorems of K-coverage Matrix.

2. i) Briefly explain the Geometric constraints of Coarse-grained node localization?
   ii) Explain about the radio signal-based distance-estimation technique?
   iii) What is the different approach to measure the performance of Network localization?   (4+4+2)

3. i) Explain the role of Cristian's algorithm in time synchronization technique?
   ii) How linear model for clock behavior is used for time synchronization technique? Explain with proper
   diagram?   (4+6)

4. i) What is the requirement of topology control?
   ii) Define basic energy cost equation and explain it?
   ii) What is the different type of sleep-based topology control? Briefly explain anyone of them?   (2+2+6)

5. Write short notes on any two of the following   (5+5)
   (a) CBTC and (b) DS-MAC, (C) TPSN