

(2 ½ Hours)

[Total Marks: 75]

- N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt ANY FOUR from the following: (20M)

- In what applications are WSNs commonly used?
- What are the advantages of using Wireless Sensor Networks?
- How does a WSN handle data aggregation?
- How do ad-hoc networks function in a WSN?
- What are the basic sensor network architectural elements?
- How can energy efficiency be optimized in a WSN?

Q. 2 Attempt ANY FOUR from the following: (20M)

- How does periodic sleep and listen operation work in S-MAC?
- Write short note on SPIN.
- How can the routing protocols in WSNs address energy efficiency?
- What are the main challenges in routing for WSNs?
- Explain Low- Energy Adaptive Clustering Hierarchy. State its advantages and disadvantages.
- How does the Sensor-MAC protocol reduce energy consumption in wireless sensor networks?

Q. 3 Attempt ANY FOUR from the following: (20M)

- What is the difference between Frequency Division Multiplexing (FDM) and Time Division Multiplexing (TDM)?
- Write short note on GEO.
- What is the role of a protocol stack in telecommunications?
- How is DECT used in wireless communication?
- Give Mobile Service of GSM
- Write short note on Localization.

Q. 4 Attempt ANY FIVE from the following: (15M)

- How does TinyOS handle resource management in WSNs?
- Give the resource constraints sensor node have to face in WN operating environment.
- Write short note on Spread Spectrum.
- Enlist the factors to be consider while designing of transport protocol for WSN.
- Give the challenges in the design of middleware for WSNs.
- Write short note on MEO
