

# COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)  
SHIVAJI NAGAR, PUNE - 411 005

## END Semester Examination (CT(DE)-14007) Mobile and Ad-hoc Networks

Course: B.Tech  
Semester: Sem VII  
Year: 2014-15  
Duration: 3 Hours

Branch: Computer Engineering/ IT  
Max.Marks:60  
Date: .....

Time:- 02:00-05:00 PM

30 NOV 2014

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| MIS NO. |  |  |  |  |  |  |  |  |  |  |
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### Instructions:

- 1) Figures to the right indicate the full marks.
- 2) Mobile phones and programmable calculators are strictly prohibited.
- 3) Writing anything on question paper is not allowed.
- 4) Exchange/Sharing of anything like stationery, calculator is not allowed.
- 5) Assume suitable data if necessary.
- 6) Write your MIS Number on Question Paper.

- Q. 1 A) High frequency X-rays and Gamma rays are not normally used for wireless communication. Explain why. (02)
- B) Wired Network uses CSMA/CD to handle collisions. Explain why collisions are *more* likely on a wireless network than a wired link. How do wireless networks handle collisions? (03)
- C) Compare Bluetooth, HomeRF and IrDA. (05)

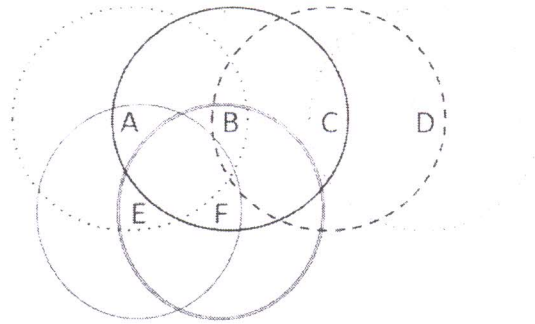
- Q. 2 A) What are the components of cellular network architecture? (04)

**OR**

- A) Explain WAP protocol stack. (04)
- B) What are the major issues that are to be considered for wireless internet? (04)
- C) In case of MobileIP, what is the benefit of simultaneous binding? (02)

Q.3 A)

(04)



Consider the wireless topology above, comprised of 6 nodes.

- i) When node A transmits to node B, list the potential hidden terminals from A and exposed terminals
- ii) What about when node B transmits to node C? List the potential hidden terminals and Exposed terminals.

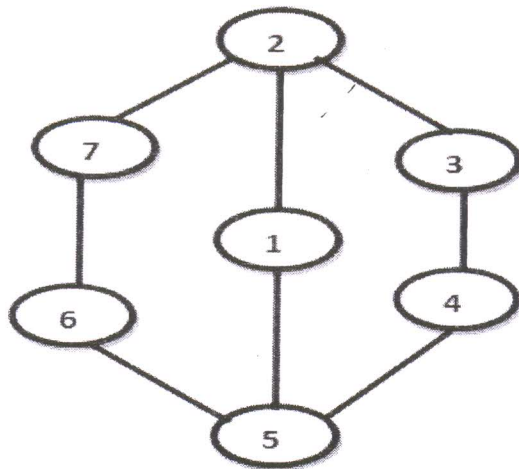
**OR**

A) Explain how the hidden node and exposed node problem solved in case of MACAW protocol. (04)

B) Think of four applications where wireless networks can replace wired networks in order to improve the efficiency of people at their workplace. Briefly describe how in each case a wireless network will fit the role better than a wired network. (04)

C) List down the issues in Ad Hoc Wireless network. (02)

Q.4 A) Explain fisheye state routing protocol with following diagram. Construct routing table for node 7 and 5 (for scope two). (04)



B) Explain Zone Routing Protocol (ZRP). (04)

C) List down the metrics for Power aware routing protocols. (02)

Q. 5 A) Write a note on Wireless Transmission protocol. (04)

**OR**

A) What are the challenges for security in Ad Hoc Wireless Network? (04)

B) Why there is need of Energy Management in Ad Hoc wireless Network. (03)

C) What are the design goals for designing transport layer protocol for Ad Hoc wireless Network (03)

Q. 6 A) Write a short note on Wireless Sensor Network. (05)

B) Differentiate an ad hoc network and a cellular network with respect to bandwidth usage, cost effectiveness etc. (05)

**OR**

B) Write a note on Bluetooth Protocol Stack. (05)