

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2018 - 19 Examination

Semester: 1
Subject Code: 203202135
Subject Name: Advanced Wireless and Mobile Networks

Date: 13/12/2018
Time: 10:30 am to 1:00 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 A) Explain IEEE 802.11 protocol architecture in detail. (05)

B) What are different issues and challenges in Wireless Network? Explain in detail. (05)

C) What are Handoff strategies in wireless communication? (05)

Q.2 Answer the following questions. (Attempt any three) (Each five mark) (15)

A) Explain General MAC layer frame format of 802.15.4

B) List out WLAN security issues and discuss any one.

C) Compare: 1G, 2G, 2.5G, 3G, 4G.

D) Differentiate I-TCP and M-TCP. Give it advantages and Disadvantages

Q.3 A) Explain TinyOS Model (07)

B) What is Spread Spectrum? Explain any one technique with example. (08)

OR

B) What is WiMAX? Explain feature of WiMAX and mention its advantages over 3G. (08)

Q.4 A) What Denial-of-Service? Explain it in Wireless Sensor Networks. (07)

OR

A) In a CDMA network, assume there are four stations A, B, C, and D with their chip sequences, shown in Fig. 1. Fig. 2 shows four cases of four stations transmitting at the same time. Show the transmitted sequences S1 to S4 and how DSSS does the recovery at receiver. (07)

A: 00011011 B: 00101110 C: 01011100 D: 01000010	<table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="padding: 2px;">A</th> <th style="padding: 2px;">B</th> <th style="padding: 2px;">C</th> <th style="padding: 2px;">D</th> <th style="padding: 2px;"></th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">-</td> <td style="padding: 2px;">-</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">-</td> <td style="padding: 2px;">C sent 1</td> </tr> <tr> <td style="padding: 2px;">-</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">-</td> <td style="padding: 2px;">B & C sent 1</td> </tr> <tr> <td style="padding: 2px;">1</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">-</td> <td style="padding: 2px;">-</td> <td style="padding: 2px;">A sent 1 & B sent 0</td> </tr> <tr> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">A sent 1, B sent 1, C sent 0 & D sent 1</td> </tr> </tbody> </table>	A	B	C	D		-	-	1	-	C sent 1	-	1	1	-	B & C sent 1	1	0	-	-	A sent 1 & B sent 0	1	1	0	1	A sent 1, B sent 1, C sent 0 & D sent 1
A	B	C	D																							
-	-	1	-	C sent 1																						
-	1	1	-	B & C sent 1																						
1	0	-	-	A sent 1 & B sent 0																						
1	1	0	1	A sent 1, B sent 1, C sent 0 & D sent 1																						

Fig 1: bit sequence

Fig. 2 transmission details

B) Define VANET? Discuss different challenges in VANET with one application. (08)