



Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2022

CS3EL05 Ad-hoc Networks

Programme: B.Tech.

Branch/Specialisation: CSE

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following is the correct order of the communicating range of the three types of networks? **1**  
 (a) PAN, WLAN, BAN (b) WLAN, BAN, PAN  
 (c) BAN, PAN, WLAN (d) None of these
- ii. Dynamic network topologies in \_\_\_\_\_. **1**  
 (a) MANET (b) SANET (c) VANET (d) None of these
- iii. Packet discard policy is implemented in- **1**  
 (a) Physical layer (b) Data link layer  
 (c) MAC layer (d) Network layer
- iv. Which multiple access technique is used by IEEE 802.11 standard for wireless LAN? **1**  
 (a) CDMA (b) CSMA/CA (c) ALOHA (d) None of these
- v. A well –defined groups that are numerically large in size but small compared to the network as a whole are used in \_\_\_\_\_. **1**  
 (a) Unicast routing (b) Multicast routing  
 (c) Broadcast routing (d) None of these
- vi. \_\_\_\_\_ includes the capabilities to perform both route discovery and route maintenance. **1**  
 (a) DSDV (b) DSR (c) AODV (d) None of these
- vii. Unauthorized users should not be able to modify any data without the owner's permission- **1**  
 (a) Non-repudiation (b) Data secrecy  
 (c) Data integrity (d) None of these
- viii. The situation in which additional data or activity are generated that would normally not exist- **1**  
 (a) Modification (b) Fabrication  
 (c) Non-repudiation (d) None of these

- ix. REDOX sensors are used for- **1**  
 (a) Humidity (b) Pressure  
 (c) Water quality (d) None of these
- x. SANET is an example of \_\_\_\_\_. **1**  
 (a) BAN (b) WSN (c) WMN (d) SAN
- Q.2 i. What is an ad hoc network? Why ad hoc networks are needed? **4**  
 ii. Differentiate between Infra-structured and infra-structure less networks with suitable diagram. **6**
- OR iii. Explain the application areas of ad hoc networks. **6**
- Q.3 i. Differentiate between MACA and MACAW. **4**  
 ii. What is MAC protocol? Discuss the issues in designing the MAC protocol for ad hoc wireless networks. **6**
- OR iii. Discuss briefly about Bluetooth and HiperLAN. **6**
- Q.4 i. What is routing? Draw the structure of routing table with example. **4**  
 ii. Explain the challenges and designing goals of routing protocols in ad hoc networks. **6**
- OR iii. How proactive routing protocol is different from reactive routing protocol. Explain one protocol of each. **6**
- Q.5 i. Differentiate between active and passive attack with example. **4**  
 ii. Explain the issues of security in ad hoc wireless networks. **6**
- OR iii. What do you mean by network security attack? Explain various types of layer attacks. **6**
- Q.6 i. List out the requirements of a secure routing protocol for ad-hoc wireless networks. **4**  
 ii. Explain the applications of sensor networks. **6**
- OR iii. Differentiate between ad hoc network and wireless sensor network with suitable diagram. **6**

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**MARKING SCHEME  
CS3EL05 ADHOC NETWORKS**

Q.1	i.	a) PAN, WLAN, BAN	<b>1</b>
	ii.	(c) VANET	<b>1</b>
	iii.	<b>d) Network layer</b>	<b>1</b>
	iv.	<b>b) CSMA/CA</b>	<b>1</b>
	v.	<b>b) multicast routing</b>	<b>1</b>
	vi.	<b>b) DSR and (c) AODV</b>	<b>1</b>
	vii.	(d) None of these	<b>1</b>
	viii.	(c) Non-repudiation	<b>1</b>
	ix.	<b>c) Water quality</b>	<b>1</b>
	x.	(d) SAN	<b>1</b>
Q.2	i.	What is an ad hoc network- <b>2 Marks</b> , Why ad hoc networks are needed?- <b>2 Marks</b>	<b>4</b>
	ii.	5 Differences - <b>5 Marks</b> , suitable diagram- <b>1 Mark</b>	<b>6</b>
OR	iii.	<b>4 applications- 1.5 Marks each)</b>	<b>6</b>
Q.3	i.	MACA and MACAW.( <b>4 differences</b> )- <b>4 Marks</b>	<b>4</b>
	ii.	What is MAC protocol?- <b>1 Mark</b> . Issues in designing the MAC protocol- <b>5 Marks</b>	<b>6</b>
OR	iii.	Bluetooth- <b>3 Marks</b> HiperLAN.- <b>3 Marks</b>	<b>6</b>
Q.4	i.	What is routing?- <b>1 Mark</b> , Structure of routing table with example- <b>3 Marks</b>	<b>4</b>
	ii.	Challenges- <b>3 Marks</b> Designing goals- <b>3 marks</b>	<b>6</b>
OR	iii.	How proactive routing protocol is different from reactive routing protocol. Explain one protocol of each- ( <b>3 Marks each protocol</b> )	<b>6</b>

Q.5	i.	<b>4 differences - 4 Marks</b>	<b>4</b>
	ii.	<b>4 issues- 1.5 Marks each</b>	<b>6</b>
OR	iii.	Definition - <b>2 Marks</b> , <b>Any 4 attacks - 1 Marks each</b>	<b>6</b>
Q.6	i.	Requirements of a secure routing protocol- <b>4 Marks</b>	<b>4</b>
	ii.	<b>4 applications- 1.5 Marks each</b>	<b>6</b>
OR	iii.	<b>Any 4 Differences -4 marks, suitable diagram- 2 marks</b>	<b>6</b>