INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

INFORMATION TECHNOLOGY

ASSIGNMENT QUESTIONS

Course Name	**WIRELESS NETWORKS AND MOBILE COMPUTING**
Course Code	**A70541**
Class	**IV B. Tech I Semester**
Branch	**Information Technology**
Year	**2018 - 2019**
Course Faculty	**Mr. E. Sunil Reddy, Assistant Professor, IT**

OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

S. No	Question	Blooms Taxonomy Level	Course Outcome
	UNIT - 1		
1	Explain the system architecture of Global System for Mobile communication (GSM)?	Understand	2
2	Discuss the mobile, bearer, supplementary and teleservices of Global System for Mobile communication (GSM)?	Understand	2
3	Define the following i. Fixed and wired ii. Mobile and wired iii. Fixed and wireless iv. Mobile and wireless	Remember	1
4	Define mobile computing. Discuss the two kinds of mobility?	Remember	1
5	Explain the different mobile applications?	Understand	1
6	Discuss the types of handover and services available in Global System for Mobile communication (GSM)?	Understand	3
7	Explain the General Packet Radio Service (GPRS) architecture reference model?	Understand	3
8	Describe Digital Enhanced Cordless Telecommunication (DECT) system functions, architecture and protocols?	Remember	3
9	Describe various protocols used in WLL and explain the services?	Remember	3
1	Explain about High-Speed circuit switched data?	Understand	3
	UNIT – II		
1.	Explain about Medium Access Control (MAC) Layer?	Understand	5
2.	Distinguish between classical and slotted aloha multiple access techniques?	Understand	5
3.	Compare and contrast Space-division multiple access (SDMA), Time-division multiple access (TDMA), Frequency division multiple access (FDMA) and Code-division multiple access (CDMA) techniques?	Understand	5

4.	Explain the following problems of wireless transmission? i. Exposed terminal and hidden terminal ii .Near and far terminals	Understand	4
5.	Describe about Time Division Multiple Access (TDMA) .How does the Near/far effect influence Time- division multiple access (TDMA) systems?	Remember	5
6.	Discuss in detail about Multiple Access With Collision Avoidance (MACA)?	Understand	4
7.	Explain about Code-division multiple access (CDMA) systems?	Understand	5
8.	Compare Carrier-sense multiple access (CSMA), Demand Assigned Multiple Access (DAMA), Inhibit Sense Multiple Access (ISMA) and Packet Reservation Multiple Access (PRMA) techniques?	Understand	5
9.	Discuss briefly about Spread Aloha Multiple Access (SAMA)?	Understand	5
10.	Define multiplexing and explain about the different kinds of multiplexing? Techniques?	Remember	4
11.	Define the following i .Mobile and corresponding nodes ii. Home and foreign networks iii. Home and foreign agents iv. Care-Of-address and its variants.	Remember	5
12.	Explain with neat diagram of Agent advertisement packet of mobile IP?	Understand	5
13.	List all the requirements for a mobile IP?	Remember	5
14.	Describe the methods of tunneling and encapsulation in mobile IP?	Remember	5
15.	Write a note on route optimization in mobile IP?	Understand	5
16.	Explain with the help of a neat sketch how packet delivery takes place to and from the mobile node?	Remember	3
17.	Discuss agent solicitation and agent advertisement messages are needed?	Understand	4
18.	Explain the various fields of registration request packet of mobile IP?	Understand	5
19.	Describe about Dynamic Host Configuration Protocol (DHCP)?	Remember	5
20.	Explain IP-in-IP encapsulation?	Understand	3
	UNIT - III		
1.	Discuss how traditional Transmission Control Protocol (TCP) cannot be used in mobile network?	Understand	6
2.	Explain the indirect Transmission Control Protocol (TCP)?	Remember	6
3.	Distinguish between snooping Transmission Control Protocol (TCP and Mobile Transmission Control Protocol (TCP)?	Understand	6
4.	Compare different Transmission Control Protocol (TCP) enhancements?	Remember	6
5.	Explain in detail classical enhancements to Transmission Control Protocol (TCP) for mobility?	Understand	6
6.	Explain about mobile Transmission Control Protocol (TCP)?	Remember	6
7.	Discuss congestion control in traditional Transmission Control Protocol (TCP) and explain the concepts of slow start and congestion threshold?	Understand	6
8.	Explain the working of transaction-oriented Transmission Control Protocol (TCP)?	Remember	6
9.	Discuss in detail about the selective retransmission technique in Transmission Control Protocol (TCP)?	Understand	6
10.	Explain the mechanism of fast retransmit/fast recovery in Transmission Control Protocol (TCP) and transmission/time-out freezing in Transmission Control Protocol (TCP)?	Remember	6
11.	Describe hoarding techniques?	Remember	7
12.	Explain about caching invalidation mechanisms?	Remember	7
13.	Define the following i. Cache access protocols ii. Prefetching	Remember	8
14.	Discuss data cache and web cache maintenance in mobile environments?	Understand	8
15.	Explain in detail about the client-server computing with adaptation?	Understand	7
16.	Discuss the transactional model of database?	Remember	7
17.	Explain the Query processing of database?	Understand	8

18.	Define quality of service and Explain the issues ensuring of Quality of service (QOS) in mobile environment?	Remember	8
19	Explain the process of data recovery?	Understand	7
20	Define transaction and Explain the ACID properties associated with database transaction?	Remember	8
	UNIT - IV		
1	Explain the communication asymmetry that arises in data-dissemination?	Understand	7
2	Distinguish between push-based and pull-based mechanism of data dissemination?	Remember	8
3	Explain about Selective tuning and indexing techniques in mobile computing?	Understand	7
4	Explain in detail about the hybrid push-pull based data delivery mechanism?	Remember	7
5	Discuss briefly about Directory method and Hash-based methods of selective tuning and indexing?	Understand	8
6	Define indexing and Explain various types of indexing techniques?	Remember	8
7	Discuss temporal addressing, broadcast addressing and use of header selective tuning indexing techniques?	Understand	9
8	Explain the following i .index-based method Ii .Distributed index-based method Iii .Flexible indexing method	Remember	7
9	Explain about Data Dissemination Broadcast Models?	Understand	7
10	Discuss about Data synchronization?	Remember	2
	UNIT – V		
1.	Discuss briefly about Mobile ad hoc network (MANET) s?	Understand	9
2.	Explain about cellular networks and adhoc wireless networks?	Remember	9
3.	Discuss the challenges /issues faced by mobile ad hoc networks?	Understand	7
4.	List and explain the properties of mobile ad hoc networks?	Remember	5
5.	Explain routing algorithms based on the variations in network topology?	Understand	5
6.	Explain about different categories of routing protocols?	Understand	3
7.	Define the following i. Ad Hoc On-Demand Distance Vector (AODV) routing ii. Dynamic Source Routing (DSR) iii. Temporally Ordered Routing Algorithm(TORA) iv. Associativity-Based Routing (ABR.)	Remember	5
8.	Describe Zone Routing Protocol (ZRP) hybrid routing protocols in Mobile ad hoc network (MANET) s?	Remember	6
9.	Discuss the security issues in Mobile ad hoc network (MANET)?	Understand	7
10.	Explain about Mobile Agents and Service Discovery?	Understand	9
11.	Discuss the role of Wireless Application Protocol (WAP) forum in wireless Web accessing?	Understand	5
12.	Define Wireless Application Protocol (WAP) and Explain its characteristics?	Remember	10
13.	Explain the architecture of wireless application protocol?	Understand	11
14.	Discuss in detail about the Wireless Datagram protocol?	Understand	11
15.	Explain about wireless transport layer security?	Remember	11
16.	Explain wireless session protocol of the session layer?	Understand	10
17.	Discuss the origin of Bluetooth technology and five criteria satisfied by it?	Understand	10
18.	Describe the physical layer of Bluetooth?	Remember	10
19.	Explain about Link Management Protocol (LMP) and L2CAP protocol in	Understand	10
20.	Discuss the configuration and profile of J2ME in detail?	Understand	10

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