



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

## WIRELESS NETWORKS AND MOBILE COMPUTING

### TUTORIAL QUESTION BANK

Course Name	WIRELESS NETWORKS AND MOBILE COMPUTING
Course Code	A70541
Class	IV B. Tech I Semester
Branch	Information Technology
Year	2018– 2019
Course Coordinator	Mr. E Sunil Reddy, Assistant Professor, IT
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.	Questions	Bloom's Taxonomy Level	Course Outcome
UNIT – I			
PART – A (SHORT ANSWER QUESTIONS)			
1	Define wireless communication?	Remember	1
2	Explain the uses of wireless Technology?	Understand	1
3	Define Code-division multiple accesses (CDMA)?	Remember	2
4	Explain how is localization done in Global System for Mobile communications (GSM) are reflected in the database?	Understand	4
5	Define a signal?	Remember	1
6	Explain polarization?	Understand	9
7	State the challenges in wireless communication?	Remember	3
8	State the types of multiplexing?	Remember	8
9	Explain advantages and disadvantages of Code-division multiple accesses (CDMA)?	Understand	1
10	Explain the type of wireless networks?	Understand	5
11	State some limitations of mobile computing?	Understand	3
12	Define terms Global System for Mobile communications (GSM) and General Packet Radio Service (GPRS)?	Remember	3
13	Define Ad hoc Networks?	Remember	1
14	Define function of Authentication Centre (AuC)?	Remember	1

15	Explain the types of multiplexing?	Understand	5
16	Define Frequency Division Duplex (FDD)?	Remember	1
17	Define the types of antenna?	Remember	3
18	Define Space-division multiple accesses (SDMA)?	Remember	1
19	Describe several versions in Carrier Sense Multiple Access (CSMA)?	Understand	8
20	Describe two sub layers in Data Link Control (DLC).	Understand	8
<b>PART – B (LONG ANSWER QUESTIONS)</b>			
1	Define the process of call handover when a mobile station moves?	Remember	5
2	Explain functioning of a cellular network. How the given sets of frequencies are used to increase capacity of a network?	Understand	6
3	Explain how interconnected mobile services switching centers enable a mobile station to communicate to another over long distance?	Understand	1
4	Describe the functioning of a smartcard. Why is secured hardware and software required for a smartcard?	Remember	8
5	Show the various subsystems and units in the Global System for Mobile communication (GSM) system architecture. How do these subsystems and units differ from those in General Packet Radio Service (GPRS)?	Understand	9
6	Explain using schematic diagrams the synchronous, asynchronous, and synchronous packet types of data transfer?	Understand	5
7	Explain the working of a sensor-actuator pair by giving an example?	Remember	6
8	Discuss the advantage and disadvantage of cellular system with small cells?	Understand	5
9	Explain Frequency division multiple accesses (FDMA) in detail?	Understand	6
10	Discuss Space-division multiple accesses (SDMA) in detail?	Understand	1
11	Explain the various applications of mobile computing?	Remember	8
12	Explain Why do Medium Access Control (MAC) scheme in wired network fail in wireless networks and how does the multiple access with collision avoidance (MACA) scheme work?	Understand	8
13	Explain the architecture of Global System for Mobile communication (GSM) with a neat diagram?	Understand	8
14	Explain How is routing carried out in Global System for Mobile communication (GSM) networks?	Understand	8
15	Explain in detail about a. Mobile Terminated Call b. Mobile Originated Call With suitable diagrams?	Understand	8
16	List the various handovers carried out in Global System for Mobile communication (GSM) and explain any one of them in detail?	Remember	2
17	Explain How is Mobility Management done in Global System for Mobile communication (GSM)?	Understand	8
18	Explain in detail about the General Packet Radio Service (GPRS)?	Understand	8
<b>PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)</b>			
1	Discover the current numbers of subscribers for the different systems. As mobile communication boom, no printed number is valid for too long?	Remember	6
2	Check out strategies of different network operators while migrating towards third generations systems. Why is a single common system not in sight?	Understand	6
3	Explain how will the next generation of wireless systems be different from the 3G technologies?	Remember	8
4	Briefly explain why security mechanisms are becoming increasingly important in wireless networks?	Remember	7
5	Explain why the international availability of the same ISM bands is important?	Remember	7
6	Explain why, typically is digital modulation not enough for radio transmission. What are general goals for digital modulation. What are typical schemes?	Understand	8

7	Assume all stations can hear all other stations. One station has to transmit and senses the carrier idle. Why can a collision still occur after the transmission?	Remember	8
8	Explain the term interference in the space, time, frequency, and code domain?	Understand	9
9	Consider duplex channels, what are the alternatives for implementation in wireless networks? What about typical wired networks?	Understand	4
10	Recall the problem of hidden and exposed terminals. What happens in the case of such terminals if Aloha, slotted aloha, reservation Aloha, or MACA is used?	Understand	3
11	Explain how are guard spaces realized between users in CDMA?	Understand	5
<b>UNIT – II</b>			
<b>PART – A (SHORT ANSWER QUESTIONS)</b>			
1	Compare the problems of Wireless Transmission?	Understand	2
2	List the Services of Global System for Mobile communication (GSM)?	Remember	9
3	Explain the different types of Satellite Orbits?	Understand	5
4	Explain how the Is IEEE 802.11 and Wi-Fi same/ State the purpose of Wi-Fi?	Understand	5
5	Define handover?	Remember	1
6	Describe the definition for General Packet Radio Service (GPRS)?	Remember	1
7	Define Digital audio broadcasting (DAB)?	Remember	4
8	Define Wireless Application Protocol (WAP) architecture?	Remember	8
9	Define multipath effects and interference?	Remember	7
10	List the process of Digital audio broadcasting (DAB) center?	Remember	8
11	Explain about Digital Video Broadcasting (DVB) container?	Understand	1
12	List the registers maintained by the gateway of satellite?	Remember	1
13	State the primary goal of IEE 802.11?	Remember	2
15	Explain Why generic routing encapsulation is used?	Understand	8
16	Explain Advantages of wireless LAN?	Understand	4
17	Explain the need for mobile Internet Protocol (IP)?	Understand	7
18	List down the goals of wireless LAN?	Remember	8
19	List the requirements of mobile Internet Protocol (IP)?	Remember	8
20	Explain the design goals of mobile Internet Protocol (IP)?	Understand	1
21	Explain the term mobile node?	Understand	4
22	Explain about Internet Protocol (IP) packet delivery?	Understand	5
23	Discuss about agent discovery?	Understand	8
24	Describe about Tunneling?	Understand	8
25	Explain about encapsulation?	Understand	6
<b>PART – B (LONG ANSWER QUESTIONS)</b>			
1	List the frequency bands and number of sub-carriers or carriers in a CDMA2000 system?	Understand	2
2	Define the FHSS frequency-hopping technique. How does it help in receiving signals in the presence of frequency selective fading of the signals?	Remember	1
3	List the basic features of Code-division multiple access (CDMA) systems. Explain soft handover?	Remember	2
4	Explain how space, time, frequency, and code division methods control the simultaneous access to the medium by multiple source or channels of mobile terminals and base transceivers?	Understand	8
5	Explain the functions of IS-95 processing units for convolution, symbol repetition, and interleaving, long code sequence generator?	Remember	8
6	Explain the use of multiple carriers by orthogonal coding. How does an Orthogonal frequency-division multiple access (OFDMA) system differ from a Code-division multiple access (CDMA) system?	Remember	8
7	Compare the recommended standards in International Mobile Telecommunications (IMT-2000)?	Remember	2

8	Compare the features of High Speed Packet Access (HSPA) and Long Term Evolution (LTE) pre 4G?	Understand	6
9	Describe forward-and reverse link structure and frames in Interim Standard (IS-95)?	Understand	5
10	Explain in detail the three phases of Elimination yield –Non Pre-emptive Multiple Access (EY-NMPA) in Hiperlan?	Understand	5
11	List the various information bases in Hiperlan and explain the same?	Remember	2
12	Discuss the architecture of Bluetooth in detail?	Understand	6
13	Explain the architecture of WI-FI in detail?	Understand	5
14	Explain the architecture of Worldwide Interoperability for Microwave Access (WIMAX) in detail?	Understand	5
15	Describe Hiperlan architecture with suitable diagrams?	Understand	6
16	List out the various Media Access Control (MAC) management services and explain any 2 of them in detail?	Remember	2
17	Draw the Media Access Control (MAC) frame format and explain its	Remember	9
18	Explain distributed foundation wireless medium access control-Distributed coordination function (DFWMAC-DCF) using Carrier Sense Multiple Access/Collision Avoidance (CSMA /CA)?	Understand	5
19	Explain distributed foundation wireless medium access control-Distributed coordination function (DFWMAC-DCF) with polling?	Understand	5
20	Explain mobile TCP. How does supervisory host send TCP packets to the mobile node and to a fixed TCP connection? Give the advantages and disadvantages of mobile TCP?	Understand	5
21	Explain Internet Protocol Security (IP sec) suite of protocols?	Understand	5

#### **PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)**

1	Explain the typical data rates in Digital enhanced cordless Telecommunications (DECT). How are they achieved considering the Time- division multiple accesses (TDMA) frame?	Understand	1
2	Explain multiplexing schemes that are applied in Digital enhanced Cordless Telecommunications (DECT) and for what purpose?	Understand	6
3	Explain the new infrastructure needed for GPRS, but not for High-Speed Circuit-Switched Data (HSCSD)? Which components are new and what their purpose?	Understand	7
4	Compare the complexity of Digital enhanced cordless	Remember	8
5	Name basic applications for satellite communication and describe the trends?	Remember	5
6	Discuss the concept of handover in connection with the satellite communication system?	Remember	5
7	Describe indirect TCP. Explain the modifications in indirect TCP as the selective repeat protocol and mobile end transport protocol?	Remember	6
8	Explain the characteristics do the different orbits have? What are their pros and cons?	Understand	5
9	List the basic features of Code-division multiple access (CDMA) systems. Explain soft handover?	Remember	5
10	Write the general problems of satellite signals travelling from a satellite to a receiver?	Remember	8

#### **UNIT – III**

#### **PART – A (SHORT ANSWER QUESTIONS)**

#### **PART-I**

1	Define internet protocol?	Remember	4
2	Explain physical layer with example?	Understand	8
3	State Data link layer?	Understand	1
4	Explain Network layer?	Understand	1
5	Describe Transport layer?	Remember	1
6	Explain Session layer?	Understand	5
7	Explain Presentation and Application layer?	Understand	5
8	Discuss about network Addressing?	Remember	9
9	Explain Briefly about Internet Control Message Protocol (ICMP)?	Understand	9

10	List and explain types of Internet Control Message Protocol (ICMP) Messages?	Remember	9
11	Define mobile Internet Protocol (IP)?	Remember	1
12	Draw the various fields of registration request packet of mobile Internet Protocol (IP)?	Remember	1
13	Draw the various fields of registration reply packet of mobile Internet Protocol (IP)?	Remember	1
14	Describe tunneling and encapsulation?	Remember	3
15	Draw the architecture of hierarchical mobile Internet Protocol (IP)?	Remember	3
16	List out the advantages and disadvantages of Dynamic Host Configuration Protocol (DHCP)?	Remember	4
17	Explain briefly on routing between two Internet Protocol (IP) addresses?	Understand	4
18	List out the ranges of class A network and class B network addressing?	Remember	8
19	List out the ranges of class C network and class D network addressing?	Remember	1
20	List out the range of class E network addressing and explain Special Internet Protocol (IP) Addresses?	Remember	4
21	Define user datagram protocol?	Understand	5
22	Discuss agent advertisement packet of mobile Internet Protocol (IP)?	Remember	1
23	Define the need for reverse tunneling?	Understand	1
24	Discuss agent discovery in location management?	Remember	5
<b>PART-II</b>			
1	Define mobility results in packet loss?	Remember	9
2	Differentiate the error rate in wired networks and mobile networks?	Remember	9
3	List out the applications for which packet loss can create severe	Understand	1
4	List out the advantages of Indirect-Transmission Control Protocol(I-TCP )?	Understand	5
5	List out the disadvantages of segmentation in Indirect-Transmission Control Protocol(I-TCP)?	Understand	5
6	Explain briefly on access point maintains buffers in indirect Transmission Control Protocol (TCP)?	Understand	9
7	Explain how indirect TCP hides the problems of wireless links from fixed	Understand	9
8	Discuss the comment on foreign agent can act as a gateway to translate Between the different protocols in indirect TCP?	Understand	9
9	Explain briefly how handover takes place in indirect Transmission Control Protocol (TCP)?	Understand	1
10	Discuss the comment on indirect TCP violets the end-to-end connectivity	Understand	1
11	Discuss the comment on handover latency can be a problem in indirect	Understand	1
12	Define snooping Transmission Control Protocol (TCP)?	Remember	3
13	List out the advantages of extending the functionality of foreign agent With snooping TCP?	Remember	3
14	List out the disadvantages of snooping Transmission Control Protocol (TCP)?	Remember	4
15	List out the goals of mobile Transmission Control Protocol (TCP)?	Remember	4
16	List out the advantages of mobile Transmission Control Protocol (TCP)?	Remember	4
17	List out the disadvantages of mobile Transmission Control Protocol	Remember	8
18	Explain the advantages of fast retransmit/fast recovery in Transmission Control Protocol (TCP)?	Understand	1
19	Explain the disadvantages of fast retransmit/fast recovery in Transmission Control Protocol (TCP)?	Understand	4
20	Explain the advantages of transmission/time-out freezing in Transmission Control Protocol (TCP)?	Understand	5
21	Explain the disadvantages of transmission/time-out freezing in Transmission Control Protocol (TCP)?	Understand	1
22	Discuss briefly about the selective retransmission technique in Transmission Control Protocol (TCP)?	Remember	1
23	List out the advantages of selective retransmission technique in Transmission Control Protocol (TCP)??	Remember	5

24	List out the disadvantages of selective retransmission technique in Transmission Control Protocol (TCP)?	Remember	4
<b>PART – B (LONG ANSWER QUESTIONS)</b>			
1	Explain the sequence number, window size, and acknowledgement number fields used in data flow control at TCP transport layer?	Understand	5
2	List the special requirements in transport layer protocols in case of 2.5G/3G mobile networks?	Remember	4
3	Explain fast transmission and fast recovery triggered?	Understand	5
4	Explain mobile TCP. How does a supervisory host send TCP packets to the mobile node and to a fixed connection?	Understand	5
5	Explain transaction oriented TCP. How does the integration of connection establishment, data transfer, and close functions?	Understand	6
6	Describe the special requirements in transport layer protocols in case of 2.5G networks?	Understand	2
7	Describe slow start of congestion control. How can fast recovery take place in the congestion avoidance phase?	Understand	3
8	Explain the functions of snooping sub layer in the functions?	Understand	5
9	List the advantages and disadvantages of snooping Transmission Control Protocol (TCP)?	Remember	4
10	Describe the modifications in snooping sub-layer functions?	Understand	6
11	Write about special requirements in transport layer?	Understand	4
12	Explain in detail about Wireless Application Protocol (WAP) architecture?	Understand	6
13	Write notes on Wireless Datagram Protocol and Wireless Transport Layer Security (WDP and WTLS)?	Understand	8
14	Write notes on wireless sessions protocol?	Understand	9
15	Discuss about wireless application environment (WAE)?	Understand	6
16	Discuss about Wireless transaction protocol (WTP) and its classes?	Understand	5
17	Explain the following: Snooping TCP and Indirect TCP.?	Understand	6
18	Explain classical TCP improvements and snooping TCP?	Understand	2
19	Discuss about the WWW programming model in detail?	Understand	6
20	Explain about the architecture of Wireless Telephony Application (WTA)?	Understand	4
<b>PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)</b>			
1	Explain 2G and 3G systems can bother transfer data. Compare these approaches with DAB/DVB and list reasons for and against the use of DAB/DVB?	Understand	4
2	Explain which web pages would be appropriate for distribution via DAB/DVB?	Understand	6
3	Define IEEE 802.11, Hiper LAN2, and Bluetooth respectively. Solve the hidden and terminal problem?	Remember	5
4	Discuss in what solutions can collisions occur in all three networks?	Understand	7
5	Distinguish between collisions on PHY and MAC layer?	Remember	6
6	If Bluetooth is a commercial success, what are remaining reasons for the use of infrared transmission for WLANs?	Remember	5
7	Explain packet flow if two mobile nodes communicate and both are in foreign networks?	Understand	5
8	Explain how tunneling works in general and especially for mobile IP using IP-in-IP minimal, and generic routing encapsulation, respectively?	Understand	4
9	Explain the benefits of location information for routing in ad-hoc networks, which problems arise?	Understand	8
10	List the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice-versa. Why and where is encapsulation needed?	Remember	1
11	Name the main difference between multi-hop adhoc networks and other networks?	Remember	9



UNIT – IV			
PART – A (SHORT ANSWER QUESTIONS)			
1	Explain about Push- based data delivery mechanisms?	Understand	1
2	Explain about Selective Tuning?	Understand	5
3	Define Hash-based method?	Remember	6
4	Define local optimization?	Remember	9
5	Define Directory method?	Remember	2
6	List the various types of indexing techniques?	Remember	8
7	Define data dissemination broadcast models?	Remember	4
8	Define data dissemination broadcast models?	Remember	6
9	Explain flat disk model?	Understand	8
10	Explain directory method?	Understand	5
11	Explain about communications asymmetry?	Understand	8
12	List advantages of pull based mechanisms?	Remember	5
13	Explain about hybrid mechanisms?	Understand	6
14	Discuss about hash based mechanisms?	Understand	3
15	Explain about index based mechanisms?	Understand	5
16	Write about communication asymmetry?	Understand	5
17	Explain temporal addressing?	Understand	6
18	Explain about data delivery methods?	Understand	8
19	Explain about demand data scheduling?	Understand	9
20	Explain distributed index based method?	Understand	5
PART – B (LONG ANSWER QUESTIONS)			
1	Explain with diagram client and server framework?	Understand	3
2	Explain different types of synchronization?	Understand	5
3	Explain the need for domain-dependent specific rules. Explain the term WBXML?	Understand	3
4	Explain digital audio broadcasting..?	Understand	9
5	Describe pull-based data delivery mechanism. What are the advantages and disadvantages of pull-based data delivery?	Understand	3
6	Explain push based data delivery methods in detail?	Understand	3
7	Explain selective tuning and indexing techniques?	Understand	4
8	Write about communication asymmetry with neat diagram?		6
9	Explain push-pull mechanism. In detail explain about Internet Printing Protocol (IPP)?	Understand	9
10	Which type of indexing is suitable for broad casting data through wireless channel? Why?	Understand	7
11	List out the advantages of data broad cast over point to point access?	Remember	3
12	Explain the following selective tuning techniques. Temporal addressing. Broadcast addressing Index based method. Distributed index based method?	Understand	5
13	Explain data delivery methods in detail?	Understand	6
14	The push based broadcasts are not suitable for large data size? Justify.	Understand	4
15	Explain about on demand data scheduling?	Understand	3
16	List the steps involved in retrieving the indexed data frames?	Remember	8
PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)			
1	Show the interaction of mobile IP with standard TCP. Draw the packet flow from a fixed host to a mobile host?	Remember	5
2	Name the requirements for a mobile IP and justify them. Does mobile IP fulfill them all?	Remember	5
3	List the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice versa?	Understand	1
4	Show the steps required for a handover from one foreign agent to another foreign agent including layer 2 and layer3?	Remember	3

5	Explain packet flow if two mobile nodes communicate and both are in networks. What additional routes do packets take if reverse tunneling is required?	Understand	6
<b>UNIT – V</b>			
<b>PART – A (SHORT ANSWER QUESTIONS)</b>			
1	Discuss the sensor networks applications?	Understand	5
2	List the properties of Mobile ad hoc network (MANET)s?	Remember	6
3	Explain fixed infrastructure architecture?	Understand	8
4	Define spectrum?	Remember	5
5	Define applications of Mobile ad hoc network (MANET)s?	Remember	6
6	Define routing algorithms?	Remember	1
7	Explain wireless sensor networks?	Understand	1
8	Compare distributed network characteristics?	Understand	2
9	Explain flat routing table driven protocol?	Understand	7
10	List the characteristics of Mobile ad hoc network (MANET) s?	Remember	3
11	Explain the need for Ad Hoc networks?	Understand	6
12	Explain routing in Mobile ad hoc network (MANET)s?	Understand	7
13	List the types of Mobile ad hoc network (MANET) s routing algorithms?	Remember	8
14	Explain Destination-Sequenced Distance-Vector Routing (DSDV)?	Understand	4
15	Discuss about dynamic source routing?	Understand	4
16	List the advantages in Dynamic Source Routing (DSR)?	Remember	4
17	Explain Cluster head Gateway Switch Routing (CGSR)?	Understand	1
18	Discuss about security in Mobile ad hoc network (MANET) s?	Understand	6
19	Explain memory and file management?	Understand	1
20	Describe java card?	Understand	5
21	Write the techniques for composing applications?	Understand	6
22	Explain about operating systems?	Understand	5
23	Show that an XML document which can be used as Contacts in a mobile smart phone?	Understand	9
24	Identify the I/O devices in subsystems management?	Understand	7
25	Mention the properties in windows phone 7 OS features?	Understand	9
26	Explain how does data store in windows CE databases and files?	Understand	5
27	Explain how are the applications developed for a windows phone 7 device?	Understand	6
28	Explain memory manager features in Windows CE?	Understand	1
29	Write the functions of program and storage memories?	Understand	1
30	Define symbian OS?	Understand	1
<b>PART – B (LONG ANSWER QUESTIONS)</b>			
1	Write about the application of wireless sensor networks in home personal area networking?	Understand	7
2	Explain Mobile ad hoc network (MANET) s. How does a Mobile ad hoc network (MANET) s differ from a fixed infrasture network?	Understand	1
3	Describe an application of defining the cluster of nodes and features of CGSR protocol.	Understand	5
4	Explain how Mobile ad hoc network (MANETs) are deployed in various	Understand	1
5	Describe the properties of Mobile ad hoc network (MANET) s?	Understand	3
6	Explain the requirements of a mobile file system over the conventional one?	Understand	8
7	Write the advantages of Mobile ad hoc network (MANET) s and wireless sensor networks integrated with IPv6?	Understand	1
8	Explain in role of a gateway in connecting using different protocols?	Understand	3
9	Discuss Constant Data Availability (CODA) file system?	Understand	4
10	Describe Temporally Ordered Routing Algorithm (TORA). Compare the features of TORA with Dynamic Source Routing (DSR) and Ad Hoc On-Demand Distance Vector (AODV) protocols?	Understand	6
11	Compare the reactive and proactive routing protocols?	Understand	7



12	How does dynamic source routing handle routing? What is the motivation behind dynamic source routing compared to other routing algorithms fixed networks?	Understand	5
13	Explain what are the security threats to a Mobile ad hoc network (MANET) s? Why a Mobile ad hoc network (MANET) s faces grater security threats than a fixed infrastructure networks?	Understand	1
14	Describe security problems in Mobile ad hoc network (MANET) s?	Understand	6
15	Explain destination sequence distance vector routing algorithm in Mobile ad hoc network (MANET) s?	Understand	4
<b>PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)</b>			
1	Name mechanisms to improve web access for handheld devices. What is their common problem and what led finally to the development of WAP?	Understand	5
2	Compare the presented protocol stacks for WAP 2.0 and give application examples?	Remember	7
3	Name advantages and disadvantages of user acknowledgement in WTP. What are typical applications for both cases?	Remember	8
4	Explain the primary goals of WAP Forum efforts and how they are reflected in the initial WAP protocol architecture?	Understand	5
5	Explain why is strong consistency of file systems problematic in a wireless and mobile environment? What are the alternatives?	Understand	1

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**Date** : 23 June, 2018

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