Enrollment No.....

Faculty of Engineering / Science

End Sem (Even) Examination May-2022

CA3EG11 Wireless & Mobile Computing

Programme: BCA / BCA+MCA (Integrated) Branch/Specialisation: Computer Application

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. Traffic intensity is expressed in **1**
(a) Erlangs /MHz /km2 (b) Erlangs
(c) λ/ sec (d) dB/sec

ii. Grade of service refers to **1**
(a) Accommodating large number of users in limited spectrum
(b) Ability of a user to access trunked system during busy hour
(c) Two calls in progress in nearby mobile stations
(d) High speed users with large coverage area

iii. GSM is a digital cellular phone system using **1**
(a) FDMA (b) TDMA
(c) CDMA (d) Both (a) and (b)

iv. Which of the following does not come under subsystem of GSM architecture? **1**
(a) BSS (b) NSS (c) OSS (d) Channel

v. Addressing mechanism of Bluetooth can include up to **1**
(a) 2 Addresses (b) 4 Addresses
(c) 6 Addresses (d) 8 Addresses

vi. Which one of the following event is not possible in wireless LAN? **1**
(a) Collision Detection
(b) Acknowledgement of data frames
(c) Multi-mode data transmission
(d) None of these

vii. What is the size of IP address? **1**
(a) 34 bit (b) 64 bit (c) 16 bit (d) 32 bit

viii. In TCP, sending and receiving data is done as **1**
(a) Stream of bytes (b) Sequence of characters
(c) Lines of data (d) Packets

ix. Which of the following is not a type of virus? **1**
(a) Boot sector (b) Polymorphic
(c) Multipartite (d) Trojans

x. Which of the following is least secure method of authentication? **1**
(a) Key card (b) Fingerprint
(c) Retina pattern (d) Password

Q.2 i. Write fading for mobile environment. **2**
ii. List the basic features of CDMA systems. **3**
iii. Compare the various multiple access technique. **5**
OR iv. Describe the various path loss models. **5**

Q.3 i. What are the various mobile services provided by GSM? **2**
ii. Explain the various types of logical channels and channel modes used in GSM. **8**
OR iii. Explain the GPRS protocol architecture. **8**

Q.4 i. Compare the various wireless LAN technologies. **3**
ii. Explain the architecture of MAC layer in 802.11 standard with the help of diagram. **7**
OR iii. Discuss the various characteristics and applications of the Bluetooth technology. **7**

Q.5 i. What is mobile IP? Also write the basic operations of it. **4**
ii. What is ad-hoc network? Write its characteristics and specific applications of it. **6**
OR iii. Explain WAP and its architecture. **6**

Q.6 Attempt any two:
i. What is intruder? Explain intrusion detection models. **5**
ii. Write a short note on trojan horse defense. **5**
iii. Explain design principles of firewall. **5**

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Marking Scheme
CA3EG11 Wireless & Mobile

Q.1	i.	(b) Erlangs		**1**
	ii.	(b) Ability of a user to access trunked system during busy hour		**1**
	iii.	(d) Both (a) and (b)		**1**
	iv.	(d) Channel		**1**
	v.	(b) 4 Addresses		**1**
	vi.	(a) Collision Detection		**1**
	vii.	(d) 32 bit		**1**
	viii.	(a) Stream of bytes		**1**
	ix.	(d) Trojans		**1**
	x.	(d) Password		**1**
Q.2	i.	Fading for mobile environment.		**2**
		Diagram/Explanation	1 Mark	
		Category	1 Mark	
	ii.	Features of CDMA systems.		**3**
		Definition	1 Mark	
		Explanation	2 Mark	
	iii.	Multiple access technique		**5**
		1 Mark for each comparison	(1 Mark*5)	
OR	iv.	Path loss models.		**5**
		Describe	3 Marks	
		Diagram	2 Marks	
Q.3	i.	Mobile services provided by GSM.		**2**
		Service 1	1 Mark	
		Service 2	1 Mark	
	ii.	Types of logical channels and channel modes used in GSM.		**8**
		Traffic channels	2.5 Marks	
		Control channels	2.5 Marks	
		Channel modes	3 Marks	
OR	iii.	GPRS protocol architecture.		**8**
		Diagram	2 Marks	
		Explanation of Architecture	2 Marks	
		Channels	4 Marks	
Q.4	i.	Wireless LAN technologies.		**3**
		Technology 1	1 Mark	
		Technology 2	1 Mark	
		Technology 3	1 Mark	
	ii.	Architecture of MAC layer in 802.11 standard.		**7**
		Diagram	2 Marks	
		Explanation of Architecture	5 Marks	
OR	iii.	Characteristics and applications of the Bluetooth technology.		**7**
		Architecture	2 Marks	
		Diagram	1 Mark	
		Characteristics	2 Marks	
		Applications	2 Marks	
Q.5	i.	Mobile IP.		**4**
		Definition	1 Mark	
		Operations	3 Marks	
	ii.	Ad-hoc network.		**6**
		Definition	1 Mark	
		Characteristics	3 Marks	
		Applications	2 Marks	
OR	iii.	WAP and its architecture.		**6**
		Diagram	2 Marks	
		Description	4 Marks	
Q.6		Attempt any two:		
	i.	Intruder.		**5**
		Definition	2 Mark	
		Models	3 Marks	
	ii.	Trojan horse defense.		**5**
		Definition	1 Mark	
		Description	4 Marks	
	iii.	Design principles of firewall.		**5**
		Definition	1 Mark	
		Principles 1 Mark for each	(1 Mark*4)	

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