



Paper ID : 261567

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Subject Code: BCCS061

Roll No:

BTECH

(SEM. VI) THEORY EXAMINATION 2025-26

MOBILE AND WIRELESS SECURITY

TIME: 3 HRS

M.MARKS: 70

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. Attempt *all* questions in brief.

02 x 7 = 14

Q no.	Question	CO	Level
a.	Define WLAN with an example.	CO1	K2
b.	What is eavesdropping in wireless communication?	CO1	K2
c.	Differentiate between WEP and WPA.	CO2	K2
d.	What is BYOD policy?	CO3	K2
e.	Define mobile malware with one example.	CO3	K2
f.	What is GSM authentication?	CO4	K2
g.	What is RFID security risk?	CO5	K2

SECTION B

2. Attempt any *three* of the following:

07 x 3 = 21

Q no.	Question	CO	Level
a.	Explain different types of wireless networks (WLAN, WPAN, WWAN) with architecture.	CO1	K2
b.	Describe common wireless network attacks such as spoofing, jamming, and MITM.	CO1	K3
c.	Explain WPA2 and WPA3 security mechanisms in detail.	CO2	K2
d.	Discuss mobile OS security features in Android and iOS.	CO3	K3
e.	A wireless network transmits data at 54 Mbps. Due to encryption overhead (20%) and interference losses (10%), calculate the effective throughput.	CO2	K3

SECTION C

3. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain wireless communication architecture and associated security challenges.	CO1	K3
b.	A jammer reduces signal strength by 30%. If original SNR is 40 dB, calculate the new SNR and comment on communication reliability.	CO1	K4

4. Attempt any *one* part of the following:

07 x 1 = 07

Q no.	Question	CO	Level
a.	Compare WEP, WPA, WPA2, and WPA3 protocols.	CO2	K4
b.	In WEP, a 40-bit key and 24-bit IV are used. Calculate the total key space and comment on its security strength.	CO2	K3



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5. Attempt any one part of the following: 07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain different mobile malware types and their impact on security.	CO3	K3
b.	A mobile device battery drains 15% per hour due to malicious background apps. If the battery is 100%, calculate remaining battery after 4 hours. Explain mitigation.	CO3	K3

6. Attempt any one part of the following: 07 x 1 = 07

Q no.	Question	CO	Level
a.	Explain authentication and encryption mechanisms in GSM and 3G networks.	CO4	K3
b.	In a cellular system, authentication delay is 200 ms and encryption adds 100 ms delay per session. Calculate total delay for 5 sessions. Comment on performance.	CO4	K3

7. Attempt any one part of the following: 07 x 1 = 07

Q no.	Question	CO	Level
a.	Discuss IoT security challenges in wireless environments.	CO5	K3
b.	A wireless sensor network has 50 nodes, each transmitting 2 KB data per second. Calculate total network traffic per second and discuss security implications.	CO5	K3