Seat No.

Total No. of Pages : 3

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Wireless Communication

Sub. Code: 67817/84861/85041

Day and Date: Tuesday ,09-12-2025 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Figures to the right indicate full marks**
5. **Use of Scientific calculator is allowed**

Q1) Solve following MCQ. **[14]**

i. The Electric Field and Magnetic Field of radio waves are

A. Perpendicular to each other
B. Perpendicular to the direction of propagation
C. Both A and B
D. None of the above

ii. Capacity of a cellular system is directly proportional to _____

A. Number of cells
B. Number of times a cluster is replicated
C. Number of Base stations
D. Number of users

iii. The propagation model that estimates radio coverage of a transmitter is called _____

A. Small scale propagation model
B. Large scale propagation model
C. Fading model
D. Okumura model

iv. Small scale fading describes the _____ fluctuations of the amplitude, phases of a signal.

A. Rapid
B. Slow
C. Instantaneous
D. Different

v. What is a measure of the maximum frequency difference for which signals are strongly correlated in amplitude?

A. Coherence bandwidth

B. Narrow bandwidth
C. Incoherent bandwidth
D. Wide bandwidth

vi. PSTN is _____ and wireless networks are _____
A. Highly dynamic, virtually static
B. Static, virtually static
C. Highly dynamic, virtually dynamic
D. Virtually static, highly dynamic

vii. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?
A. THSS and FHSS
B. FHSS and DSSS
C. THSS and DSSS
D. Hybrid technique

Q2) Attempt Any Two **[14]**

a. Explain types of handoff in cellular system? **[7]**

b. Explain indoor propagation model. **[7]**

c. Explain types of small-scale fading **[7]**

Q3) Attempt Any Two **[14]**

a. Assuming free space propagation, a reciever is located 10 Km away from a 50 W transmitter. The carrier frequency is 900 MHz, antenna gain at transmitter end receiver is 1 and 2, respectively. Calculate **[7]**
a) power received at the receiver
b) the magnitude of E-field at the receiver antenna
c) the power flux density

b. Analyse free space propagation model. **[7]**

c. Explain frequency reuse concept in detail **[7]**

Q4) Attempt Any Two **[14]**

a. Explain traffic routing in wireless network. **[7]**

b. Explain 802.11 system architecture. **[7]**

c. Explain functions and components of Wireless Application Protocol architecture **[7]**

Q5) Attempt Any Two **[14]**

a. Draw and analyse network architecture of common channel signalling (CCS). **[7]**

b. Explain with neat datagram Bluetooth Protocol **[7]**

c. Explain in detail about WML **[7]**

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (67817) WIRELESS MOBILE COMMUNICATION Part 4 SEM 8
2] (1154) B.Tech. CBCS (84861) Wireless Communication Part 4 SEM 8
3] (101) Bachelor of Engineering (85041) Wireless Communication Part 4 SEM 8