



**DAH-003-0491107** Seat No. \_\_\_\_\_

**B. Sc. / M. Sc. (Applied Physics) (Sem. X) (CBCS)  
Examination**

**April – 2022**

**Wireless Communication and  
Computer Network : Paper - 15**

**Faculty Code : 003**

**Subject Code : 0491107**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory  
(2) Numbers in the right margin indicate marks

**1 Attempt Any Seven short questions : (Two marks each) 14**

- (1) What is cell dragging?
- (2) Define Antenna foot-prints.
- (3) List different types of channel interferences in wireless communication.
- (4) Define: Base Switching Centre (BSC)
- (5) Define - Roaming.
- (6) How many types of fading are there? List them.
- (7) Why interim standards were developed?
- (8) What is long term evolution? (LTE) also define VOLTE.
- (9) Which type of modulation is used in GSM?
- (10) What is Common Channel Signalling?

**2 (A) Attempt Any Two : (Five Marks Each) 10**

- (1) What is handoff? Explain in detail how handoff is prioritized.

- (2) What is Umbrella Cell Concept? Why and where it is used? Also explain hard and soft handoff.
- (3) Explain how a cellular call is connected.
- (4) Explain Frequency Division Duplexing and Time Division Duplexing in detail.
- (B) Write answer of Any **One** : 4
- (1) Define and explain Doppler spread and Coherence time.
- (2) Write short note on history of wireless communication.
- 3** (A) Attempt Any **Two** : (Five Marks Each) **10**
- (1) Explain Frequency Reuse Concept with proper diagram.
- (2) What is meant by channel assignment strategy for cellular communication? Explain how it works. How many types of strategies are there?
- (3) How to improve coverage and capacity of cellular communication?
- (4) Explain Types of small scale fading
- (B) Write answer of Any **One** : 4
- (1) What is meant by constellation diagram? Draw constellation diagram for BPSK, QPSK and 16 - ary modulation.
- (2) Explain - Coherence Bandwidth and Time dispersion parameters
- 4** (A) Attempt Any **Two** : (Five Marks Each) **10**
- (1) Explain free space propagation model
- (2) Explain three basic propagation mechanism for electromagnetic waves for wireless communication.
- (3) Explain ground reflection 2 ray model.
- (4) What is fading? Explain difference between small scale and large scale fading.

- (B) Write answer of Any **One** : 4
- (1) Write full forms of (a) CDPD (b) MAHO (c) PSTN (d) GSM
  - (2) Write full forms of (a) CCS (b) ISDN (c) CDMA (d) RSSI
- 5** (A) Attempt Any **Two** : (Five Marks Each) **10**
- (1) List and explain factors influencing small scale fading
  - (2) Explain role of Doppler shift in fading.
  - (3) List the techniques used for small scale multipath measurements:
  - (4) Discuss parameters of mobile multipath channels.
- (B) Write answer of Any **One** : 4
- (1) Explain GSM system architecture.
  - (2) List and explain GSM Channel types.
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