

Enrolment No:

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Examination: ODD SEMESTER-2022
BCA 2nd Year (3rd Semester)

Paper Name: Introduction to (Wireless Communication PE-1)
Time: 3 hours

Paper Code: BCA PE311
Maximum marks:75

Note: This question paper contains three sections Section A, B and C.
Follow proper numbering for answering the questions.

CO* - Course Outcomes from Syllabus, BL* - Bloom's Taxonomy Levels

1: Remembering, 2: Understanding, 3: Applying, 4: Analysing, 5: Evaluating, 6: Creating)

Section-A

Answer all questions.

Marking Scheme 35 X 1 = 35 marks. (CO*:1, BL:1,2,4 and 5)

A) Fill in the blanks. (1* 20 =20 marks)

- 1) The use, application and integration of wireless telecommunication technology and wireless devices within the business systems domain is called _____.
- 2) The multiple access technique used for 3G networks is _____.
- 3) _____ distributes the coverage of cell and extends the cell boundary to hard-to-reach areas.
- 4) A user who pays subscription charges for using a mobile communication system is called _____.
- 5) Each base station is allocated a set of radio channels, which are to be used in a geographic area called a _____.
- 6) A WML file can contain multiple cards and they form a _____.
- 7) Radio channels used for transmission of call setup, request, initiation and other control purposes are called _____.
- 8) A brief message which is broadcast over the entire service area, usually in simulcast fashion by many base stations at the same time is called _____.
- 9) When a signal propagates from a transmitter to a receiver and is forced to follow different paths is called _____.
- 10) Each group of cells which uses a certain number of the available channels and a group of adjacent cells together is called a _____.

- 11) The _____ register contains the information about subscriber parameters and location information for all mobile subscribers currently located in the geographical area controlled by that VLR.
- 12) When radio path between transmitter and receiver obstructed by surface with sharp irregular edges due to which waves bend around the obstacle is called _____ propagation mechanism.
- 13) The process of transferring a mobile station from one channel or base station to another is called _____.
- 14) If all channels in a cell are occupied then call is _____.
- 15) The methods for giving priorities to handoffs are called guard _____.
- 16) _____ is a major limiting factor in the performance of the cellular radio system.
- 17) Communication system which provides only one communication is called _____.
- 18) PSTN stands for _____.
- 19) Actual radio coverage of a cell is known as _____.
- 20) Handoff problems in micro-cell system is known as _____.

a) State whether the statement is True or False. (1*15=15 marks)

- 21) Wireless communication is the transfer of information between two or more points that are not connected by an electrical conductor.
- 22) The digital cordless telephone security system applications are used in homes.
- 23) Direct RF Pulse System method helps us to determine the power delay profile directly and find impulse response.
- 24) First-generation systems are almost purely analog channels.
- 25) GPRS is used for web browsing and document sharing.
- 26) In 1915, the first wireless voice transmission was set up between New York and San Francisco.
- 27) One Earth Station sends a transmission to the satellite. This is called an Uplink.
- 28) If a channel is available immediately, the call request may be delayed until a channel becomes available. This is called as blocked call delay system.
- 29) The free space propagation model is used to predict received signal strength, when unobstructed line-of-sight path between transmitter & receiver.
- 30) Spread spectrum multiple access uses signals which have a transmission bandwidth whose magnitude is greater than the minimum required RF bandwidth.
- 31) Grade of Service is a measure of the ability of a user to access a trunked system during busiest hour.
- 32) Sources of interference include another mobile in the same cell.
- 33) MTSO and MSC are different from each other.
- 34) Coherence time is the time duration over which the channel impulse response is essentially invariant.
- 35) DECT is a standard for digital wireless telephone technology.

Section-B
Attempt any FOUR questions out of SIX.
Marking Scheme :4 X 5 =20 marks.

Q.No.	Questions	Mark	CO*	BL*
Q1	What factors lead to liberalization of telecommunication market?	5	CO1	BL1, BL2
Q2	Discuss the significance of WAP and WML in mobile communication.	5	CO1	BL2, BL3, BL4
Q3	Explain the feature of the following technologies: - a) Bluetooth b) AMPS	5	CO2, CO3	BL3, BL4, BL5
Q4	Explain the evolution of cellular networks from 1G to 3G networks?	5	CO2, CO3	BL1, BL2
Q5	What is interference? Explain the types of interference?	5	CO3, CO4	BL1, BL2
Q6	What are the techniques used to expand the capacity of cellular system?	5	CO4	BL2, BL3, BL4

Section-C
Attempt any TWO questions out of FOUR.
Marking Scheme :2 X 10 =20 marks.

Q.No.	Questions	Mark	CO*	BL*
Q1	Discuss the characteristics and components of GSM architecture and GPRS architecture with diagram.	10	CO2, CO3	BL2, BL3, BL4
Q2	What is propagation? Explain the Indoor and Outdoor propagation models?	10	CO2, CO3	BL1, BL2
Q3	What is fading? Explain the types of fading in detail.	10	CO1, CO2, CO3	BL1, BL2
Q4	What are multiple access techniques? Explain all the types of multiple access techniques with their features and diagram.	10	CO2, CO4	BL1, BL2, BL3