

Roll No: _____

JAMIA HAMDARD
Department of Computer Science & Engineering
School of Engineering Sciences & Technology
New Delhi-110062
Examination: SUPPLEMENTARY/IMPROVEMENT EXAM-2023
(For Odd Semester-2022) (Offline)

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

Paper Code: BCAPE311
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

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

Note: Attempt all the questions.

DEFINE THE TERMS

- Q1** Multipath propagation (1 mark)
Q2 Handoff (1 mark)
Q3 WML (1 mark)
Q4 Grade of Service (1 mark)
Q5 Frequency Reuse (1 mark)

FILL IN THE BLANKS

- Q6** _____ distributes the coverage of cell and extends the cell boundary to hard-to-reach areas. (1 mark)
Q7 A user who pays subscription charges for using a mobile communication system is called _____. (1 mark)
Q8 Each base station is allocated a set of radio channels, which are to be used in a geographic area called a _____. (1 mark)
Q9 A WML file can contain multiple cards and they form a _____. (1 mark)
Q10 Radio channels used for transmission of call setup, request, initiation and other control purposes are called _____. (1 mark)
Q11 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 _____. (1 mark)
Q12 When a signal propagates from a transmitter to a receiver and is forced to follow different paths is called _____. (1 mark)
Q13 Each group of cells which uses a certain number of the available channels and a group of adjacent cells together is called a _____. (1 mark)
Q14 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. (1 mark)
Q15 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. (1 mark)

(1 mark)

SELECT THE APPROPRIATE OPTION

Q16 The job profile which enables a single person to control simultaneously many systems at once from long distances away is **(1 mark)**

- a) Remote control developer b) Wireless Sensor developer
c) Operation Analyst d) Mobile Application Developer.

Q17 Which is the Outdoor Propagation model? **(1 mark)**

- a) Okumara model b) Hata model
c) Log-Distance Path loss model d) Knife edge diffraction model

Q18 The unit used to express relative differences in signal strength is **(1 mark)**

- a) Hertz b) Decible
c) DB d) Mhz

Q19 Which is the 2G digital cellular standard? **(1 mark)**

- a) IS95 b) AMPS c) DECT d) GSM

Q20 The use, application and integration of wireless telecommunication technology and wireless devices within the business systems domain is called **(1 mark)**

- a) E-Commerce b) M-Commerce c) E-Shopping d) None of these.

Q21 Wireless Application Protocol (WAP) Forum was founded in 1997 by **(1 mark)**

- a) Ericsson b) Motorola c) Nokia d) all of these.

Q22 The Base Station Subsystem (BSS) section of the 2G GSM network architecture consists of **(1 mark)**

- a) Base Transceiver Station (BTS) b) Base Station Controller (BSC)
c) Mobile Station d) Both a and b

Q23 The multiple access technique used for 3G networks is **(1 mark)**

- a) TDMA b) CDMA c) FDMA d) Both a and b

Q24 The Radio channel for transmission from mobile to base station is called **(1 mark)**

- a) Forward channel b) Reverse Channel c) Half-Duplex Chanel d) None of these.

Q25 The fading distribution which describes the received signal envelope distribution for channels, where all the components are non-Line of Sight is called **(1 mark)**

- a) Rayleigh Fading b) Fast fading c) Ricean Fading d) Flat fading

STATE WHETHER THE STATEMENT IS TRUE OR FALSE

Q26 Wireless communication is the transfer of information between two or more points that are not connected by an electrical conductor. **(1 mark)**

Q27 The digital cordless telephone security system applications are used in homes. **(1 mark)**

Q28 Direct RF Pulse System method helps us to determine the power delay profile directly and find impulse response. **(1 mark)**

Q29 First-generation systems are almost purely analog channels. (1 mark)

Q30 GPRS is used for web browsing and document sharing. (1 mark)

Q31 In 1915, the first wireless voice transmission was set up between New York and San Francisco. (1 mark)

Q32 One Earth Station sends a transmission to the satellite. This is called an Uplink. (1 mark)

Q33 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. (1 mark)

Q34 The free space propagation model is used to predict received signal strength, when unobstructed line-of-sight path between transmitter & receiver. (1 mark)

Q35 Spread spectrum multiple access uses signals which have a transmission bandwidth whose magnitude is greater than the minimum required RF bandwidth. (1 mark)

SECTION-B

Note: Attempt any four questions. Each question carries equal marks. (4X5=20 marks)

Q.No.	Questions	Mark	CO*	BL*
Q1	Explain the outdoor and indoor propagation models?	5	CO5	BL2
Q2	What are satellite networks communication? Explain Space Division Multiple Access method of satellite communication.	5	CO1	BL2
Q3	Discuss the types of multiple access techniques.	5	CO4, CO2	BL3
Q4	Explain the features of second-generation wireless network?	5	CO3, CO2	BL4
Q5	What are the techniques used to expand the capacity of cellular system?	5	CO5	BL1
Q6	Explain GSM architecture?	5	CO3, CO4	BL4

SECTION-C

Note: Attempt two questions. Each question carries equal marks. (2X10=20 marks)

Q.No.	Questions	Mark	CO*	BL*
Q1	What is Interference? What are the sources of Interference? Explain the types of Interference?	10	CO1, CO5	BL2
Q2	What is fading? What is the significance of fading? Explain the types of fading?	10	CO2, CO3	BL3
Q3	What is GPRS technology? Explain the GPRS network architecture and the channel structure?	10	CO3, CO4	BL2
Q4	How Wireless Application Protocol (WAP) is used in developing mobile applications?	10	CO1	BL3