

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: BTech  
BRANCH: ECE**

**SEMESTER: VII  
SESSION: MO/2024**

**SUBJECT: EC409 WIRELESS COMMUNICATION**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Draw a block diagram to explain how a typical wireless communication system works.	[5]	01 02
Q.1(b)	How would you build a communication satellite? Explain the main sub-systems typically required to build a communication satellite.	[5]	01 05
Q.2(a)	Explain the basic idea behind cellular concept. Discuss how frequency reuse increases system capacity?	[5]	02 03
Q.2(b)	Show GSM system architecture and describe various sub systems.	[5]	02 02
Q.3(a)	State the significance of Okumura model and explain how it can be used to estimate path loss. Why it is important to consider correction factor in Okumura model?	[5]	03 04
Q.3(b)	Derive an expression to represent the received signal using free space path loss model. Why is path loss considered as the most important parameter for cellular system design?	[5]	03 04
Q.4(a)	Explain different network architectures used in WLAN.	[5]	04 02
Q.4(b)	Compare Bluetooth, ZigBee and Ultra wide band communications.	[5]	04 03
Q.5(a)	Compare FDMA and TDMA schemes.	[5]	05 03
Q.5(b)	Explain how CDMA works. Discuss its salient features.	[5]	05 04

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