BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2024)

CLASS: BTECH **SEMESTER : VI**
BRANCH: ECE **SESSION : SP/2024**

SUBJECT: EC373 R1 MOBILE AND CELLULAR COMMUNICATION

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	Compare Wireless Communication, Mobile Communication and Cellular Communication system.	[2]	1	2
Q.1(b)	Discuss Channel Assignment strategies for cellular communication system. For a seven cell reuse pattern. Calculate the frequency reuse factor.	[2+1]	1	2,3
Q.2(a)	Compare 1G, 2G, 2.5 G and 3G system.	[2]	1	3
Q.2(b)	Draw and explain UMTS cellular system Architecture. Compare it with EDGE technology.	[2+1]	1	2
Q.3(a)	Discuss WCDMA system in detail. Compare working of GGSN and SGSN for GPRS.	[2]	2	2
Q.3(b)	Explain Smart antenna system in detail. Discuss its components and their significance.	[3]	2	2
Q.4(a)	Discuss in detail the process of power control and its significance.	[2]	2	2
Q.4(b)	Explain Inter symbol interface. List the parameters involved in evaluation of cellular system capacity. Discuss small cell deployment scheme of cellular system capacity enhancement.	[3]	2	2
Q.5(a)	Explain the effect of multipath propagation on signal fading.	[2]	3	2
Q.5(b)	Derive an expression for free space propagation model. Assume a receiver is located at 10 km from a 50 W transmitter. The carrier frequency is 900 MHz, free space propagation is assumed G_t =1 and G_r =2. Evaluate the power at the receiver.	[2+1]	3	5

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