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

CLASS: BTECH **SEMESTER : VII/ADD**
BRANCH: ECE **SESSION : MO/2025**

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.

Q.1(a)	Analyse the requirement for monitoring and correcting satellite velocity in a Molniya orbit, explain the correction process performed, and compare Molniya and Geostationary orbits.	[3+2]
Q.1(b)	Compare Delay spread, Mean access delay and Maximum excess delay. Calculate received power in free space power transmission if 50dB power is transmitted at 500 MHz from an omnidirectional antenna at a distance of 30 KM.	[3+2]
Q.2(a)	Explain 2.5 G Architecture in detail and compare it with 2G.	[3+2]
Q.2(b)	Explain the process of power control in CDMA. Explain Hard handoff in detail	[3+2]
Q.3(a)	Explain Frequency selective fading in detail. Compare slow fading and fast fading	[3+2]
Q.3(b)	Discuss Time dispersive channel in detail. Compare coherence bandwidth and coherence time.	[3+2]
Q.4(a)	Explain link establishment process in IEEE802.15.1. Compare service level and link level enforced security.	[3+2]
Q.4(b)	Explain IR based dual band approach of spectrum distribution in IEEE802.15.4. Discuss applications and advantages of this approach	[3+2]
Q.5(a)	Explain FHSS in detail. Compare it with DSSS	[3+2]
Q.5(b)	Discuss reserve ALOHA in detail. Compare it with conventional and slotted ALOHA	[3+2]

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