

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

**CLASS: BTECH
BRANCH: EC**

**SEMESTER : VI
SESSION : SP/2024**

SUBJECT: EC373R1 MOBILE AND CELLULAR COMMUNICATION

TIME: 3Hours

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)	Defined Handoff. Discuss the significance of handoff and process to achieve it.	[1+2+2]	1	1,2
Q.1(b)	Explain in detail the evolution of 1G to 3G	[5]	1	2
Q.2(a)	Defined cell splitting. Discuss the significance of cell splitting and process to achieve it.	[1+2+2]	2	1,2
Q.2(b)	Defined Interference. justify that interfering signal is different from noisy signal. Compare Inter-symbol interference, co channel interference and adjacent channel interference.	[1+2+2]	2	1,2,3
Q.3(a)	Defined Delay spread. Compare it with maximum excess delay. Explain the condition for Frequency selective fading	[1+2+2]	3	1,2,3
Q.3(b)	Defined coherence time. Explain the relationship between time spreading is related to frequency selectivity	[2+3]	3	1,2,3
Q.4(a)	Defined Diversity. Compare Space diversity with polarization diversity.	[1+4]	4	1,2
Q.4(b)	Discuss the significance of Combining techniques. compare selection combining and threshold combining techniques.	[2+3]	4	1,2
Q.5(a)	Discuss Frequency division duplexing. Compare FHSS and FDMA. Explain Spread spectrum in detail	[1+2+2]	5	1,2
Q.5(b)	Justify pure ALOHA yields low throughput compared to slotted ALOHA. A DSSS system has a spreading code rate of 1.2288 Mcps and an information data rate 9.6 Kbps find the processing gain. How much improvement in information data rate will be realized if the spreading code rate is changed to 5 Mcps and the processing gain is 256?	[2+3]	5	3,4

:::29/04/2024 M:::