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

CLASS: M.TECH. **SEMESTER : II**
BRANCH: CS/IT/IS/SER/AMS **SESSION : SP/19**

SUBJECT: EC598 OVERVIEW OF MOBILE COMMUNICATION

TIME: 3:00 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)	There must exist a gap between hand-off threshold and the minimum usable signal. Why? Discuss the impact of the size of this gap.	[5]
Q.1(b)	Explain how conventional mobile communication was different from present mobile cellular system?	[5]
Q.2(a)	Explain how cell splitting is performed? How it can increase system capacity?	[5]
Q.2(b)	A cellular system uses 7 cells in a cluster where the path loss exponent is found to be 4. Determine the co-channel reuse factor and the SIR in the downlink. Assume all the six interfering cells are equidistant from the mobile user. Determine the SIR if the path loss exponent is found to be 3.	[5]
Q.3(a)	Discuss the main technical features of the first generation (1G) cellular communication systems. Illustrate briefly about various 1G cellular standards.	[5]
Q.3(b)	Discuss what CDMA makes a suitable choice for 3G cellular systems? Examine specific features of CDMA technology.	[5]
Q.4(a)	Show GSM system architecture and describe its various sub systems.	[5]
Q.4(b)	Define 4G cellular system and discuss its main characteristic features.	[5]
Q.5(a)	Explain different diversity schemes and discuss their merits and demerits.	[5]
Q.5(b)	Explain the operation of an adaptive array antenna system.	[5]

::::::03/05/2019::::::M