

STUDENT EXAM NO-----

GANPAT UNIVERSITY

**M. Tech. SEMESTER III (ELECTRONICS AND COMMUNICATION ENGG.)
REGULAR EXAMINATION, DEC 2013
MOBILE COMMUNICATIONS (3EC 301)**

Max. Time: 3Hrs.]

[Max. Marks: 70

Instructions:

1. Attempt **all** questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the **right** indicate full marks.
4. Assume suitable data, if necessary.

SECTION I

- | | | |
|-----------|--------------------------------------------------------------------------------------------------------|---|
| 1 | (A) How duplexer is associated with FDD? Explain it. | 5 |
| | (B) What is importance of SCM? | 2 |
| | (C) Compare 4G with 3G technologies. | 5 |
| OR | | |
| 1 | (A) Explain with example that duopoly reduces the trunking efficiency. | 6 |
| | (B) How umbrella cell approach is used to cater any kind of traffic? Explain it with suitable diagram. | 6 |
| OR | | |
| 2 | (A) Draw GSM architecture and explain it. | 5 |
| | (B) Compare broadcast radio with cellular telephony. | 6 |
| OR | | |
| 2 | (A) Give briefing about generation of one seeded walsh code generator. | 3 |
| | (B) Explain any four technical challenges of wireless communications. | 8 |
| OR | | |
| 3 | (A) Draw the internal diagram of BTS cabinet and explain all the sections. | 6 |
| | (B) Give any five points to be considered for BTS site installation. | 6 |

SECTION II

- 4 (A) What factors should be considered for deciding BTS shelter size? 8
(B) Calculate the Brewster angle for wave impinging on poor ground having a relative permittivity of four at the frequency of 100 MHz. 4

OR

- 4 (A) Write short notes on MIMO and its basic principle. Give its research areas. 8
(B) What do you mean by path loss exponent? 4

- 5 (A) What is frequency diversity and how it is different from space diversity? 5
(B) What factors should be considered for comparison of outdoor propagation model? 6

OR

- 5 (A) Explain the concept of Doppler shift in wireless communication. 5
(B) What are different kinds of interleaving? Explain. 6

- 6 (A) Explain FHMA in wireless communication. 4
(B) What is thumb rule for the distance between two antennas in space diversity in a sector for GSM system? 3
(C) A mobile is located 5km away from the base station and uses a vertical wavelength/4 monopole antenna with a gain of 2.55dB to receive cellular signals of GSM system .Find the length and effective aperture of the receiving antenna. 5

THE END OF PAPER