

[103]

Sardar Patel University

M.Sc. (Electronics &amp; Communication) (Semester-IV) Examination

Day & Date: Tuesday, 10<sup>th</sup> April, 2018

Time: 2:00 to 5:00 p.m.

Subject: Mobile Communication

Paper No. PS04CELC01

Marks: 70

Figures to the right indicate marks.

Q-1 Choose the correct answer. [8]

1.  $\eta_c = \underline{\hspace{2cm}}$  during busy hours.
  - a) 0.5
  - b) 0.6
  - c) 0.8
  - d) depends
2. The near in distance propagation can be investigated by        area.
  - a) Rural
  - b) Urban
  - c) suburban
  - d) none
3. The spectral width of a received carrier when a single sinusoidal carrier is transmitted through the multipath channel is       .
  - a) Doppler spread
  - b) Coherence time
  - c) Delay spread
  - d) none
4. Co-channel Interference is independent of       .
  - a) Receiving Power
  - b) Transmitted Power
  - c) Signal Strength
  - d) All
5. When the mobile unit is driving away from the cell site antenna, the effective antenna height is       .
  - a) Constant
  - b) Increase
  - c) Decrease
  - d) none
6.        uses to transmits a speech code of 7Kbps or two data mode rates, 6 and 3.6Kbps.
  - a) TCH/H
  - b) TCH/F
  - c) TCH/8
  - d) TCH/16
7. In GSM, SIM stand for       .
  - a) Subscriber Identity Module
  - b) System Identity Module
  - c) Switching Identity Module
  - d) none
8. Full form of GSM is       .
  - a) Global System for Machine
  - b) Global Signal for Mobile
  - c) Global System for Mobile
  - d) Global Signal for Machine

Q-2 Answer in short. (Any SEVEN) [14]

1. State the conditions required for service quality.
2. Define cell splitting. List the different types of cell splitting.
3. What is non co-channel interface?
4. Explain the signal-to-interference ratio.
5. Define Carrier to Interference Ratio.

(P.T.O.)

6. Define Cell site.
  7. What are the factors causing handoff in the wireless system?
  8. State the categories of Frequency reuse scheme.
  9. Give the comparison between Omni cell and sectorized cell in fixed channel assignment.
- Q-3 (a) Explain in detail elements of cellular radio system. (6)
- (b) Explain the hand off process for effective operation of cellular system. (6)
- OR**
- (c) Draw the schematic diagram of basic cellular system and explain the function of the each unit. (6)
- Q-4 (a) Describe the co channel interferences in detail. (6)
- (b) Discuss the design of directional antenna in K=8 cell pattern and find out (C/I) ratio for worst case. (6)
- OR**
- (c) Describe the real time co channel interferences measurements at mobile radio Transreceiver. (6)
- Q-5 (a) Explain the propagation in near in distance transmission. (6)
- (b) Explain the propagation of land to mobile transmission. (6)
- OR**
- (c) Write a note on Mobile point-to-point model. (6)
- Q-6 (a) Explain in detail frequency spectrum utilization. (6)
- (b) Explain in detail with proper diagrams Handoff Mechanism. (6)
- OR**
- (c) Give the difference between GSM and CDMA. (6)

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