

Total No. of Questions :8]

SEAT No. :

**P3988**

**[4959]-1092**

[Total No. of Pages :2

**B.E. (E & TC)**

**MOBILE COMMUNICATION**

**(2012 Course) (Semester - II) (End - Semester) (404189)**

*Time : 2½ Hours]*

*[Max. Marks :70*

*Instructions to the candidates:*

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6,Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) Explain in brief message switching, circuit switching and manual switching. **[8]**
- b) Design a grading for connecting 20 trunks to switches having 10 outlets. **[6]**
- c) Derive the approximate formula for S/I using co-channel reuse ratio Q. **[6]**

OR

- Q2)** a) Explain the assumptions used in second Erlang Distribution for queuing systems. **[8]**
- b) Explain Time Space switch. Determine the implementation complexity of the TS switch where the no. of TDM input lines  $N=120$ . Assume each input line contains DSI signal (24 channels). Assume a one stage matrix is used for the space stage. **[6]**
- c) What is Handoff? Why is it necessary in Mobile Cellular System? Explain Mobile Assisted Handoff. **[6]**
- Q3)** a) In AMPS, explain the call processing of **[8]**
- i) Mobile terminated call
  - ii) Mobile originated call
- b) Draw the format of different GSM burst structures and explain each one detail. **[8]**

OR

**P.T.O.**

- Q4)** a) With a proper diagram explain the time slot hierarchy of GSM system. [8]  
b) Compare between GSM900 and DCS 1800. [8]

- Q5)** a) Draw a neat diagram & explain block scheme of GSM Full Rate encoder. [6]  
b) With the necessary diagram, explain the role of TAF and IWF in data transmission chain in GSM? [6]  
c) With a neat diagram explain the operation of GMSK Modulator. [4]

OR

- Q6)** a) Draw and explain GPRS architecture. [6]  
b) Write short note on HSCSD. [6]  
c) State and explain data services in GSM. [4]

- Q7)** a) What are the basic types of Pseudorandom sequence used in spread spectrum CDMA system. Explain any one in detail. [6]  
b) Compare between technical parameters of WCDMA & IS-95. [6]  
c) A DSSS system has a 15 Mcps code rate and a 4.8 kbps information data rate. If the spreading code generation rate is increased to 50 Mcps, how much improvement in the processing gain of this DSSS system will be achieved? [6]

OR

- Q8)** a) Draw & explain the basic receiver structure for DS-CDMA. [9]  
b) Give the classification of logical channels in IS-95 & explain sync channel. [9]

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