Total No. of Questions : 10]

SEAT No. :

P3122

[Total No. of Pages : 3

[5354]-612
B.E. (E & TC)
MOBILE COMMUNICATION
(2012 Pattern) (Semester - II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q.1 or 2, Q.3 or 4, Q.5 or 6, Q.7 or 8, Q.9 or 10.***
2) ***Figures to the right indicate full marks.***
3) ***Use of scientific calculator is allowed.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain the assumptions used in second Erlang distribution for queuing systems. **[5]**

b) During busy hour, 1200 calls were offered to a group of trunks and 6 calls were lost. The average call duration was 3 minutes. Find. **[5]**

i) Traffic offered

ii) Traffic carried

iii) Traffic lost

iv) Grade of service

v) Total duration of period of congestion.

OR

Q2) a) Draw general trunking diagram for a switching system. Explain various functional entities. **[5]**

b) Define and explain **[5]**

i) Grade of service

ii) Blocking probability

iii) Traffic intensity

P.T.O.

Q3) a) Derive and calculate availability for dual processor systems with MTBF = 2000 hours & MTTR = 4 hours in 15 years. **[5]**

b) With the help of framing diagram explain 8 bit 16 channels PCM signalling shared between 30 channels. **[5]**

OR

Q4) a) With the help of signal exchange diagram and timing diagram explain signal exchange for a local call system. **[5]**

b) Derive the equation for total number of cross points required for two stage network with N incoming and N outgoing trunks. **[5]**

Q5) a) Explain AMPS spectrum allocation and the types of voice and control channels used in AMPS. **[8]**

b) Write short note on :

i) GSM Time Hierarchy **[4]**

ii) GSM Burst Structure **[5]**

OR

Q6) a) In AMPS explain call processing of

i) Mobile Terminated Call **[4]**

ii) Mobile originated Call **[4]**

b) Explain the function of following with respect to GSM architecture.

i) BSC **[5]**

ii) MSC **[4]**

Q7) a) Draw and explain in detail the block schematic of a typical mobile station. **[6]**

b) With the help of neat diagram. Explain the operation of a GMSK modulator. **[6]**

c) Write short note on GPRS services. **[5]**

OR

Q8) a) With the help of neat diagram explain block scheme of GSM half rate encoder. **[6]**

b) Write a short note on EDGE. **[6]**

c) Draw and explain GSM network architecture for SMS service. **[5]**

OR

Q9) a) Compare basic types of pseudorandom sequences used in spread spectrum CDMA systems. **[8]**

b) Draw the block diagram of Rake Receiver and explain its operation. **[8]**

OR

Q10)a) Draw and explain basic receiver structure of DS-CDMA. **[8]**

b) Compare between WCDMA and 15-95. **[8]**

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