Q2 (a) Explain the classification of switching systems.

Answer Page 3 to 5 of Text Book II

Q2 (b) Draw a general trunking diagram for a switching system and explain.

Answer Page 74 to 76 of Text Book I

Q3 (a) Explain a mathematical model of the traffic offered to telecommunication systems.

Answer Page 92 to 93 of Text Book I

Q3 (b) On average one call arrives every 5 seconds. During a period of 10 seconds, what is the probability that

> **(i)   No call arrives?**
>
> **(ii) One call arrives?**
>
> **(iii) Two calls arrive?**
>
> **(iv) More than two calls arrive?**

Answer Page 94 of Text Book I

Q4 (a) Explain a fully connected 3-stage switching network with a neat diagram, hence obtain the expression of minimum number of cross points required.

Answer Page 132 To 134 of Text Book I

Q4 (b) Design a 3-stage network for connecting 100 incoming trunks to 400 outgoing trunks.

Answer Page 135 of Text Book I

Q5 (a) Explain a simple N x N Time Division Space Switching with a neat diagram.

Answer Page 183 to 185 of Text Book II

Q5 (b) Calculate the maximum access time that can be permitted for the data and control memories in a TSI switch with a single input and single output trunk multiplexing 2500 channels.

Answer Page 209 of Text Book II

Q6 (a)   Explain the signal exchange diagram for a local call..

Answer Page 182 to 183 of Text Book I

Q6 (b)   Explain the process architecture in a Stored Program Control (SPC).

Answer Page 193 to 195 of Text Book I

Q7 (a)   Explain the Pulse Code Modulation (PCM) signalling.

Answer Page 213 to 214 of Text Book I

Q7 (b)   What are the advantages of Common Channel Signalling (CCS)?

Answer Page 218 of Text Book I

Q8 (a)   Explain the working of Ring networks with a neat diagram.

Answer Page 239 to 240 of Text Book I

Q8 (b)   A token ring operates at 10 M bit/s. It is 1 Km in length and the propagation velocity is $2 \times 10^8 \, \text{m/s}$. 50 terminals are spaced around the ring and the node latency is one bit. Packets are 512 bits long including 64 overhead bits. The token consists of 8 bits. Calculate the effective data rate when the ring is fully loaded.

Answer Page 240 to 241 of Text Book I

Q9 (a) Explain the Integrated Services Digital network (ISDN).

Answer Page 263 to 265 of Text Book I

Q9 (b) Explain Cellular Radio Networks.

Answer Page 267 to 269 of Text Book I

Text Books

1. **Telecommunication Switching , Traffic and networks by J.E.Flood (Fifth Reprint 2009)**

2. **Telecommunication Switching   Systems and Networks by Thiagaranjan Viswanatha (Twenty Seven Printing 2007)**