Date : / /
Page No.

Solution 2(a)

Seg 1 sent at 0s
Seg 2 sent at 2s
ACK rcvd at 5s
$\therefore RTT_M = 5s$
$RTT_S = 5s$
$RTT_D = \frac{5}{2} = 2.5$
$RTO_1 = 5 + 4 \times 2.5$
$= 5 + 10.0$
$= 15.0$ — 1½ marks

Seg 3 send at 8s [Timeout at 8 + 15 = 23
seg 4 send at 9s [Timeout at 9 + 15 = 24
ACKs lost ∴ retransmit
Seg 3 retransmit at RTO = 2 × 15
= 30
Seg 4 retransmit at RTO = 30
Timeout of Re Seg 3 = 23 + 30
= 53s
" " Re Seg 4 = 24 + 30 = 54s
ACK not rcvd before timeout
∴ retransmit seg 3 and seg 4, RTO = 2 × 30 = 60
Timeout Seg 3 = 53 + 60
= 113s
" Seg 4 = 114s
ACK rcvd at 60s — 1½ marks
Final RTO = 60s.

Solution

3 - 10,000 bytes of data

IHL = 7, 7×4 = 28 ∴ Header length = 28

IP datagram 1 = 28 + 10,000
IP datagram 2 = 28 + 10,000

for datagram 1

MTU_1 = 4468
= 28 + 4440

No. of frag req = 10,000/4440
≈ 3

frag id	frag No	length	offset	MF	DF
918	1	4440	0	1	0
918	2	4440	555	1	0
918	3	10,000 − 2(4440) = 1120	1111	0	0

offset frag 2 = 4440/8 = 555
" " 3 = (2×4440)/8 = 1111 1/2 marks

MTU_2 = 800
= 28 + 780

780 not fully divisible by 8 ∴ taking floor value i.e 776

No of frags per frag = 4440/776 ≈ 6

frag id	frag No	length	offset	MF	DF
918	1,1	776	0	1	0
	1,2	776	776/8 = 97	1	0
	1,3	776	2×776/8 = 194	1	0
	1,4	776	3×776/8 = 291	1	0
	1,5	776	4×776/8 = 388	1	0
	1,6	4440 − (5×776) = 560	5×776/8 = 485	0	0

1/2

Date: / /
Page No.

frag id	frag No	length	offset	MF	DF
218	2,1	776	555	1	0
	2,2	776	555+97 =652	1	0
	2,3	776	555+194=748	1	0
	2,4	776	555+291=836	1	0
	2,5	776	555+388=943	1	0
	2,6	560	555+485=1040	0	0
	3,1	776	1111	1	1
	3,2	1120-776 =344	1111+97 =1208	0	0

Same would be ~~for~~ 2nd datagram