SPOS PBL.

Page No.
Date

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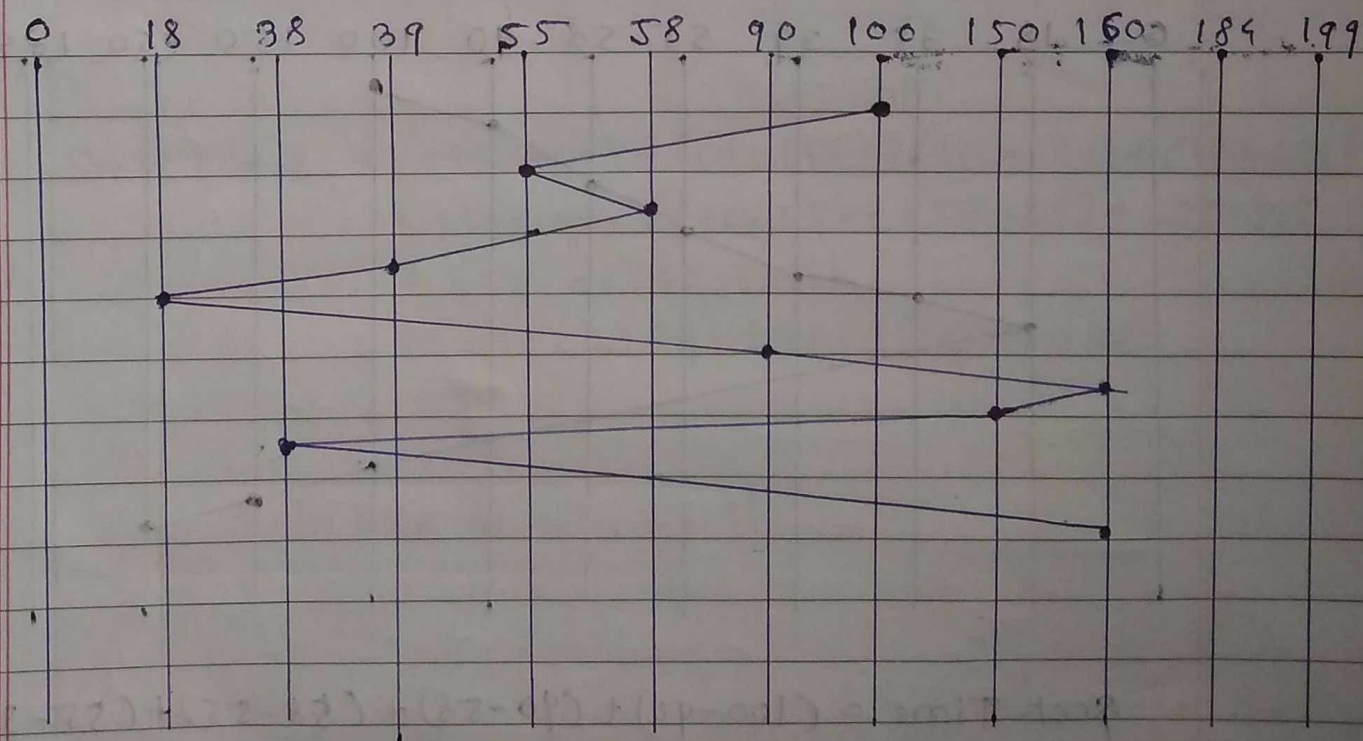
PBL Statement 4:
Consider the disk accexe requests given as 55, 58, 39, 18, 90, 160, 150, 38, 184, where starting read position is 100. Calculate average seek time using FCFS, SSTF, SCAN & C-SCAN disk scheduling policies & show which policy performs bettles.

→ For FCFS -
Given - head position = 100
Request (55, 58, 39, 18, 90, 160, 150, 38, 184)
Queues (0, 55, 58, 39, 18, 90, 160, 150, 38, 184, 199)



Seek Time = (100-55) + (58-55) + (58-39) + (39-18) + (90-18) + (160-90) + (160-150) + (150-38) + (160-38)

$= 45+3+19+21+72+70+10+112+146$

$\therefore$ **FCFS scale Time = 498**

Hence, Average seek time using FCFS is.

$= \frac{498}{9} = 55.3$

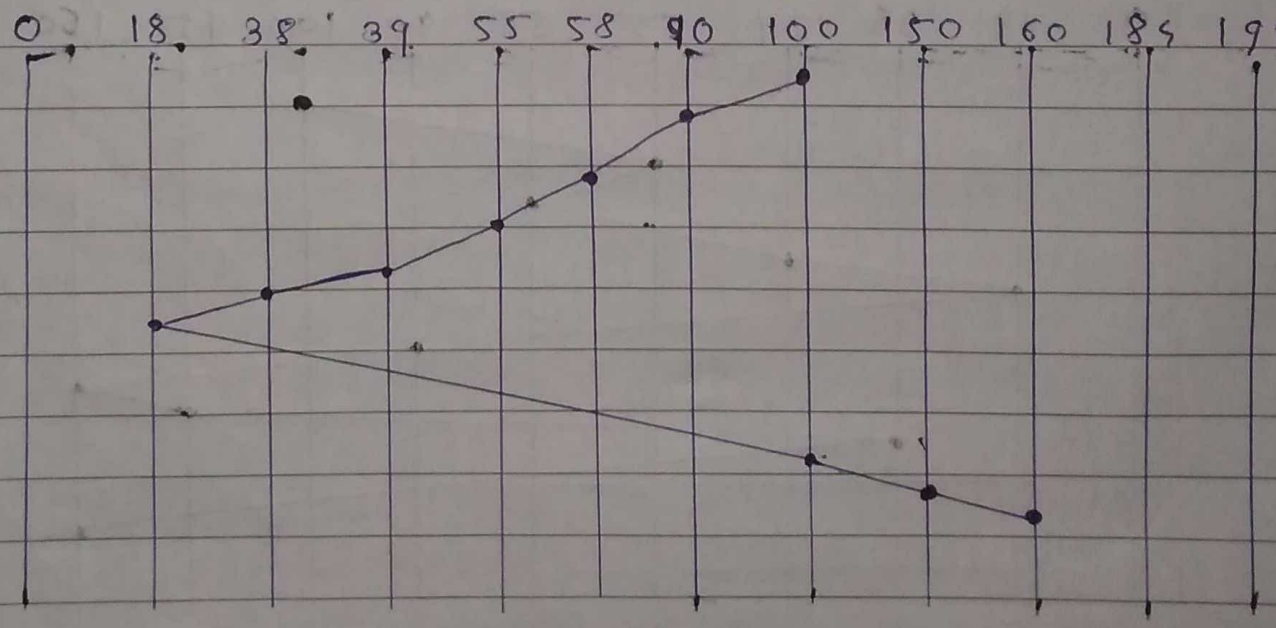
Avg. seek time (FCFS) = 55.3

2) For SSTF -

head position = 100

Request (55, 58, 39, 18, 90, 160, 150, 38, 184)

Queue (0, 55, 58, 39, 18, 90, 160, 150, 38, 184, 199)



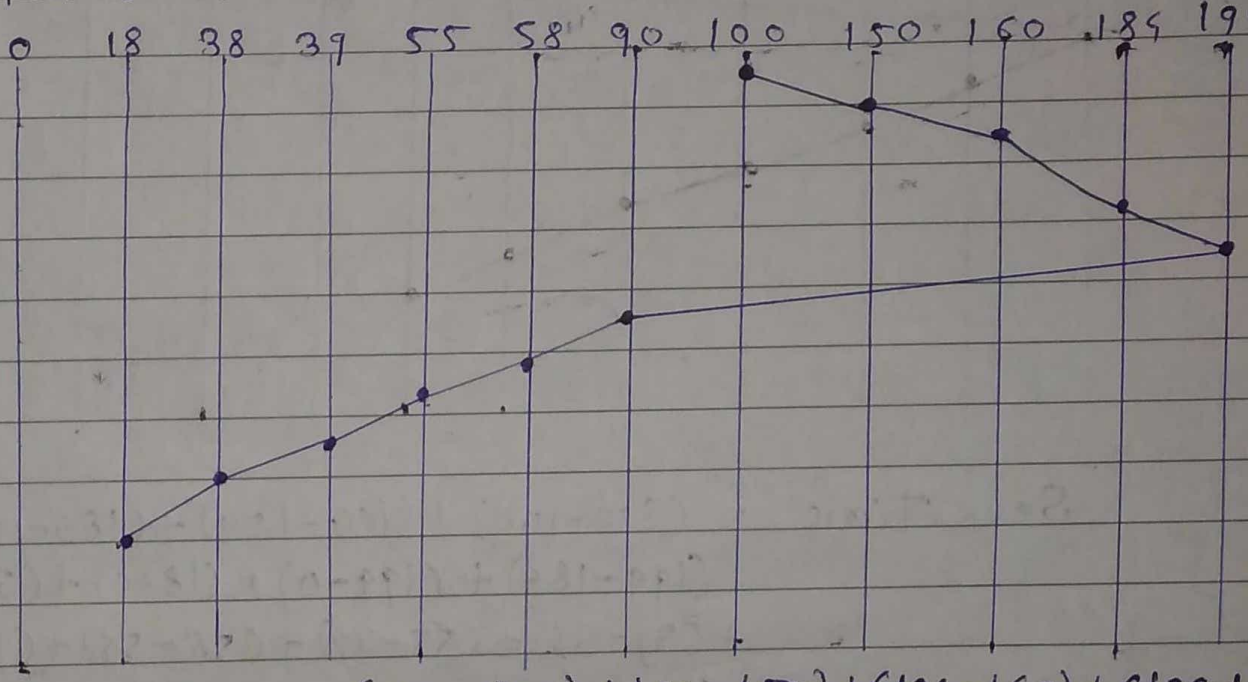
Seek Time = (100-90) + (90-58) + (58-55) + (55-39) + (39-38) + (38-18) + (150-18) + (160-150) + (184-160)

$= 10+32+3+16+1+20+132+10+24$

$= 248$

$\therefore$ **Avg. Seek Time = 27.5**

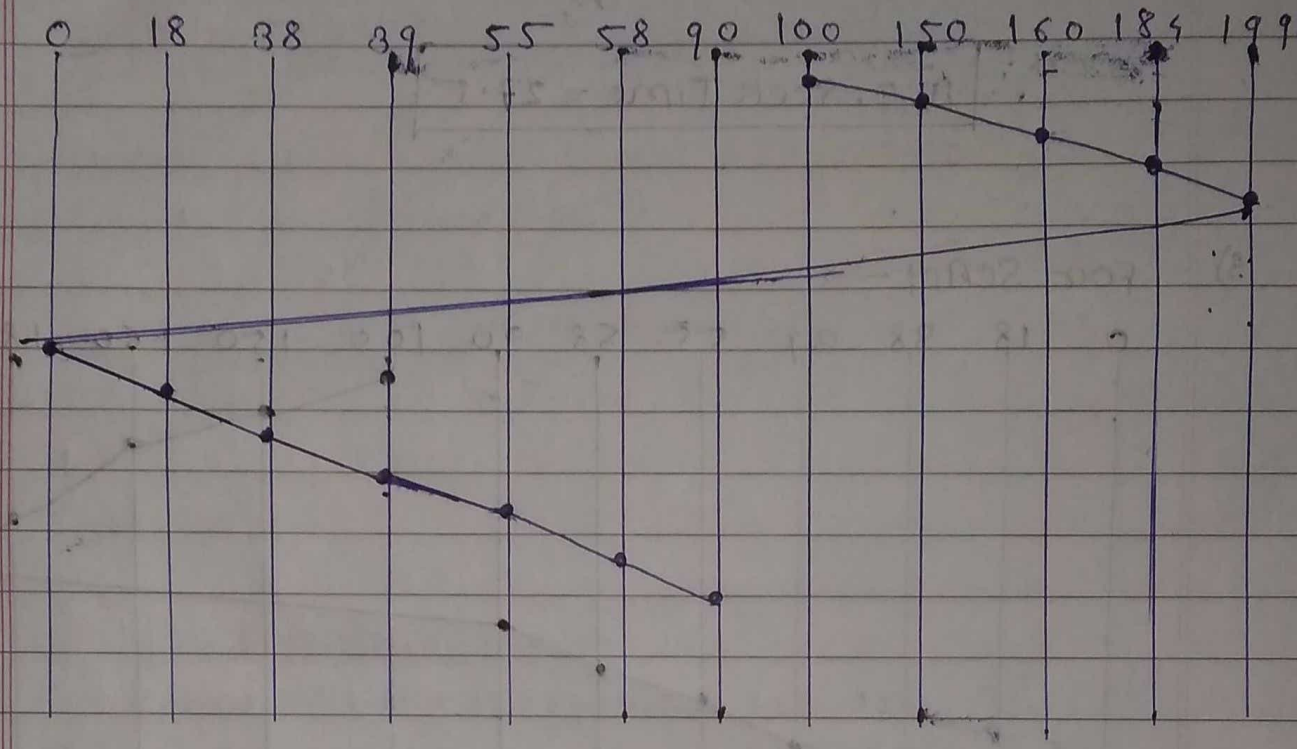
3) FOR SCAN →



Seek Time $= (150-100)+(160-150)+(184-160)+(199-184)$
$+ (199-90)+(90-58)+(58-55)+(55-39)$
$+ (39-38)+(38-18)$
$= 50+10+24+94+32+3+16+1+20$
$= 280$

$\therefore$ Avg Seek time = 27.8

4) For CSCAN →



Seek Time = (150-100) + (160-150) + (184-160) + (199-184) + (199-0) + (18-0) + (38-18) + (39-38) + (55-39) + (58-55) + (90-58)

= 50 + 10 + 24 + 166 + 20 + 1 + 16 + 3 + 32

= 384

∴ Avg Seek time = 384/9 = 35.6

Conclusion → Hence, on all Avg Seek time, SSTF required min average seek time is 27.5