Exercise 1:

Setup : Client and server are personal laptops connected with LAN cable.

Spec of server:
Processor : intel core i5
Ram : 8 GB
Ethernet card :
Ethernet controller: Realtek Semiconductor Co., Ltd. RTL8101E/RTL8102E PCI Express Fast
Ethernet controller (rev 08)
        Subsystem: Hewlett-Packard Company Device 2281
        Kernel driver in use: r8169

Spec of client:
Processor : intel core i7
Ram : 8 GB
Ethernet card :
Ethernet controller: Realtek Semiconductor Co., Ltd. RTL8101E/RTL8102E PCI Express Fast
Ethernet controller (rev 08)
        Subsystem: Hewlett-Packard Company Device 2281
        Kernel driver in use: r8169

i)Maximum read bandwidth of the disk : 43.05MBps
Which translates to 22.57 reqs/sec(43.05*1024*1024/2*1000000)

ii)Maximum network bandwidth: 11.75 MBps
Which translates to 6.1 reqs/sec (11.75*1024*1024/2*1000000)

Exercise 2:
Case: Random, Sleep time = 0
a) N=2

b) In graph

c) Network bandwidth is the bottleneck resource.
Throughput(req/sec) multiplied by file size equals network bandwidth(found by iperf). But rate at
which data was read from the disk was far more than this speed and cpu utilisation was not
100%

d) Number of requests per second = 6.000(approx)
File size = 20,00,000 bytes
Throughput = 11.5MBps which is approximately equal to the network bandwidth

Exercise 3:

Case: Random, Sleep time = 1

a) N=10

b) In graph

c) Network bandwidth is the bottleneck resource.
Throughput(req/sec) multiplied by file size equals network bandwidth(found by iperf). But rate at which data was read from the disk was far more than this speed and cpu utilisation was not 100%

d) Number of requests per second = 6.000(approx)
File size = 20,00,000 bytes
Throughput = 11.5MBps which is approximately equal to the network bandwidth

Exercise 4:

Case: Random, Sleep time = 0

a) N=2

b) In graph

c) Network bandwidth is the bottleneck resource.
Throughput(req/sec) multiplied by file size equals network bandwidth(found by iperf). But rate at which data was read from the disk was far more than this speed and cpu utilisation was not 100%

d) Number of requests per second = 6.000(approx)
File size = 20,00,000 bytes
Throughput = 11.5MBps which is approximately equal to the network bandwidth