

Q 2a
Sol

while
Recording

Sampling rate of Audioland = 48000 samples/sec

Each takes 2 bytes of memory.

$$\therefore \text{memory takes while recorded} = 48000 \times 2 \\ = 96 \times 10^3 \text{ bytes/sec}$$

Given Total file size = 96×10^6 bytes

$$\text{Total time taken to record} = \frac{96 \times 10^6 \text{ bytes}}{96 \times 10^3 \text{ bytes/sec}} \\ = 1000 \text{ sec.}$$

while played:

Audio card takes 32000 samples/sec

$$\text{memory processed while played} = 32000 \times 2 \\ = 64 \times 10^3 \text{ bytes/sec}$$

\therefore Total time taken to play the file =

$$\frac{96 \times 10^6 \text{ bytes}}{64 \times 10^3 \text{ bytes/sec}} \\ = \underline{\underline{1500 \text{ sec}}}$$