**3 (A) –“ A multiplattered hard disk is divided into 1100 sectors and 40,000 cylinders. There are six platter surfaces. Each block holds 512 bytes. The disk is rotating a rate of 4800 rpm. The disk has an average seek time of msec. What is the total capacity of this disk?”**

1100\*40000\*512\*6 = 135168 \*106 Bytes

**4 (A)- “The average latency on a disk with 2200 sectors is found experimentally to be 110 msec. What is the rotating speed of the disk?**

2200/110\*60 = 1200 rpm

**[I] For a display of 1920 pixels by 1080 pixels at 16 bits per pixel how much memory, in megabytes, is needed to store the image?**

16bits = 2bytes

1920\*1080\*2 = 4147200bytes = 3.955MB  
**[II] What is the average rotational latency of a hard drive rotating at 7,200 RPM or 120 revolutions per second? (Give your answer in milliseconds)**

7200rev/min = 120rev/s

(1/120) /2 = 4.167ms  
**[III] What is the transfer time for a hard drive rotating at 7,200 RPM or 120 revolutions per second? Assume there are 30 sectors per track. (Give your answer in milliseconds)**

1/30/120 = 0.278ms