Practical 9

Q2

BINARY COMPRESSION

1. Number of bits in 4runs.bin = 40 bits
2. Number of bits after compression in 4runs.bin = 32 bits
   Compression Ratio = 32/40 = 0.8 : 1
3. New file contains 32 bits

ASCII COMPRESSION

1. Number of bits in abra.txt = 96 bits
2. Number of bits after compression = 416
   Compression Ratio = 416/92 = 4.52 : 1
   The compression ratio is so big as the .txt file does not contain any runs which increases the amount of data after compression.
3. Created text.txt containing runs
   Text.txt before compression = 240 bits
   After compression = 960 bits
   Compression ratio = 960/240 = 4

BITMAP COMPRESSION

1. Number of bits in q32x48.bin = 1536 bits
2. Number of bits in q32x48.bin after compression = 1144 bits
   Number of bits in q32x48rle.bin = 1144 bits
3. Compression Ratio = 1144/1536 = 0.74 : 1

Q3

1. Number of bits in q64x96.bin = 6144 bits
2. Number of bits in q64x96.bin after compression = 2296 bits
   Number of bits in q64x96rle.bin = 2296 bits
   Compression Ratio = 2296/6144 = 0.37 : 1

The compression ratio of the first bitmap image is twice that of the second bitmap image. This could be due to both the resolution and depth of the bitmap image.