The LNM Institute of Information Technology
Digital Image Processing (DIP)
II - Mid Semester Examination, 2013 – 2014

MM: 15 **Duration: 60 Min.**

Q1(a). Encode the following input sequence using LZW compression algorithm: [4]

TOBEORNOTTOBEORTOBEORNOT

The dictionary can contain maximum 64 words. The initial dictionary contents are as follows:

Dictionary Location	**Entry**
0	A
1	B
2	C
…	…
25	Z
26	-
…	…
63	-

Locations 26 – 63 are initially unused.

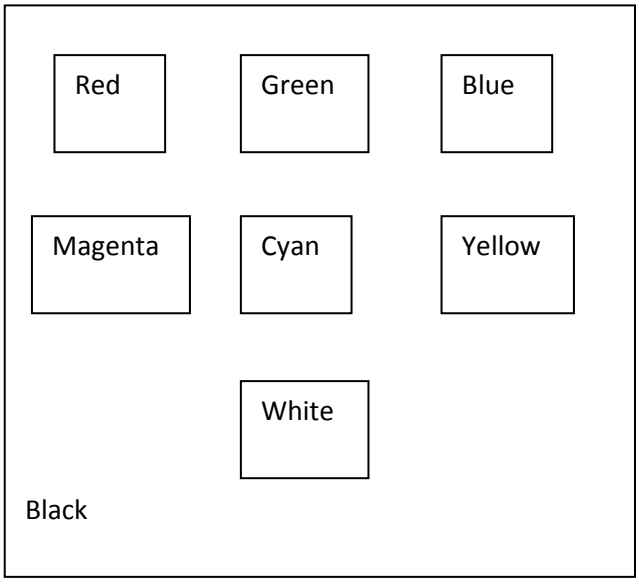
Q1(b). Let each character require 5 bits and each code word requires 6 bits for storage. Compute the compression ratio for the encoded output of the above given string. [1]

NOTE: Write every step very clearly.

Q2. Consider the image composed of solid color squares. Choose a gray scale of eight shades of gray, 0 to 7, where 0 is black and 7 is white. Suppose the image is converted to HSI color space. Answer the following questions using specific numbers for the gray shades. [3]

a) Sketch the hue image.

b) Sketch the saturation image.



Q3. What do you understand by: [5]

a) Trichromatic coefficients

b) Safe RGB colors

c) Pseudocolor image processing

d) Color complement

e) CIELAB

Q4. Explain color slicing of an image using a cube. [2]