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Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

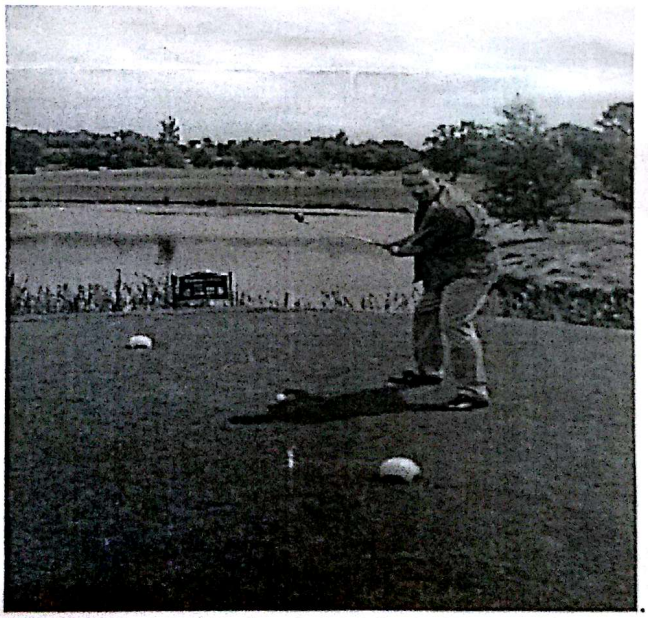
Continuous Assessment Test – II Fall Semester

Course Code	: BCI3005	**Programme**	: B.Tech
Course Name	: Digital Watermarking and Steganography	**Max. Marks**	: 50
Slot	:F2 + TF2	**Duration**	: 90 Minutes.

PART- A **(5 * 10 = 50 Marks)**

Answer ALL Questions

1. Analyse the following image w.r.to flat and non flat regions. Of the substitution methods proposed so far, analyse which method would be suitable in embedding a secret code.



2. How are the differences in the pixel values of an image help in embedding a secret image. Assume that a row of pixels in an image holds the values 52,62,71,90,111,150. How can a secret code "1001101011" be embedded in the PVD method.

3. Analyse in detail the different methods available for Audio Steganography and evaluate each with reference to its Performance after embedding with the secret information

4. With the increasing threat posed on content authentication, identify and analyse the different methods used by the organisations to ensure authenticity of digital content that is made available over the varied online sources.

5. a. Analyse the quality of the video call that has the following performance metric.

   a. Avg. round trip 700 ms
   b. Avg. Jitter 50 ms
   c. Avg. network MOS degradation 3
   d. Avg. concealed samples ratio 5%

b. With the following codebook , demonstrate encoding of vector, v=(159,149,130,142)

cw_1	(184,	192,	193,	197)
cw_2	(34,	50,	43,	47)
cw_3	(191,	198,	190,	188)
cw_4	(77,	83,	84,	65)
cw_5	(63,	70,	94,	98)
cw_6	(23,	29,	16,	19)
cw_7	(210,	213,	192,	230)
cw_8	(151,	153,	169,	171)