

B.Tech DEGREE EXAMINATIONS, NOVEMBER 2011

FOURTH SEMESTER

R - 2004

INFORMATION TECHNOLOGY

IT281: INFORMATION CODING TECHNIQUES

Time: Three Hours

Maximum: 100 Marks

ANSWER ALL QUESTIONS

PART A – (10 X 2 = 20 Marks)

1. What is entropy of a source?
2. Define the term information capacity as discussed in Shannon's third theorem, the information capacity theorem.
3. What is signal-to noise ratio?
4. What is modulation index?
5. What is a parity bit?
6. List the two properties shared by algebraic codes.
7. What is discrete cosine transform used for?
8. What is run-length encoding?
9. What does lossless coding refer to?
10. Where is perceptual audio coding applicable?

PART B – (5 X 16 = 80 Marks)

11. With a relevant example discuss Huffman coding algorithm. (16)
12. a. With relevant examples discuss differential pulse code modulation and adaptive differential pulse code modulation. (16)
(OR)
b. With relevant examples discuss delta modulation and adaptive delta modulation. (16)
13. a. i. Develop an algorithm for error detection using Cyclic Redundancy Check (CRC). (8)
ii. Validate the algorithm for error detection using CRC with a relevant example. (8)
(OR)
b. What is syndrome decoding? Discuss with a relevant example. (16)

14. a. With relevant example discuss Arithmetic Coding Compression algorithm. (16)
(OR)

b. Discuss the JPEG Compression Standard with algorithm. (16)

15. a. With a block diagram discuss Dolby audio coders. (16)
(OR)

b. Perform a comparative study between H.261 and MPEG video standards. (16)
