Reg. No. : | | | | | | | | | | |

Question Paper Code: 31456

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fifth Semester

Electronics and Communication Engineering

01UEC506 – INFORMATION THEORY AND CODING

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define Prefix Code.
2. What is Shannon limit?
3. List the advantages of Dolby AC-3 standard.
4. State the term frequency masking?
5. Compare GIF and TIFF.
6. List the various standards of MPEG.
7. Define Hamming weight.
8. Enumerate the properties of the syndrome.
9. Draw the diagram of Block Encoder.
10. What is the significance of Turbo coding?

PART - B (5 x 16 = 80 Marks)

11. (a) A discrete memory less source has five symbols X1, X2, X3, X4 and X5 with probabilities 0.4, 0.19, 0.16, 0.15 and 0.15 respectively. Calculate a Shanna-Fano code for the source and code efficiency. (16)

Or

(b) Describe the different types of channels used in information coding techniques. (16)

12. (a) Deduce the Dynamic Huffman coding algorithm for the message "Malayalam". (16)

Or

(b) With neat illustrations explain linear predictive coding. (16)

13. (a) Explain about JPEG image compressions in detail. (16)

Or

(b) Explain briefly about I/B/P frames. (16)

14. (a) Show and verify whether $g(x) = 1 + x + x + x$ is a valid generator polynomial for generating a cyclic code for message [111]. (16)

Or

(b) Discuss in detail about cyclic codes. (16)

15. (a) Explain briefly about convolutional codes. (16)

Or

(b) Paraphrase the viterbide coding algorithm with suitable example. (16)