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Question Paper Code: 35406

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Fifth Semester

Electronics and Communication Engineering

01UEC506 – INFORMATION THEORY AND CODING

(Regulation 2013)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. Define Prefix Code.
2. What is Shannon limit?
3. What is Dolby AC3?
4. State the term frequency masking?
5. Compare GIF and TIFF.
6. Distinguish between motion compensation and estimation.
7. Define Hamming weight.
8. Give the properties of syndrome polynomial.
9. Draw the diagram of Block Encoder.
10. Define turbo code.
11. Give the Kraft McMillan inequality for instantaneous code.
12. List the properties of mutual information.
13. Compare LZ and LZW coding.

14. What is Dolby AC3?

15. What is TIFF?

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. State and prove Kraft inequality theorem and source coding theorem. (10)

17. Discuss the encoding procedure of LZW compression. Also construct an encoding table for any sentence. (10)

18. With a neat schematic, describe JPEG encoder and decoder. (10)

19. For a (7, 4) code with generator matrix $G = \begin{vmatrix} 1 & 1 & 0 & 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 0 & 1 & 0 & 0 \\ 1 & 1 & 1 & 0 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 & 0 & 0 & 1 \end{vmatrix}$

(i) Find all possible code words. (10)

20. Describe the principle of turbo coding. (10)