Reg. No. :

Question Paper Code: 35206

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

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. 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.

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) Discuss the encoding procedure of LZW compression. Also construct an encoding table for any sentence.(16)

Or

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

13. (a) With the neat block diagram, explain the working of JPEG encoder and decoder. (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) Describe the principle of turbo coding. (16)

Or

(b) Paraphrase the viterbidecoding algorithm with suitable example. (16)

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