300813(33)

B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(AEI, Bio Tech, Chem., Civil, CSE, Elect., EEE, EI, ET & T, IT, Mech., Mining, Metallurgy, Mechatronics, Prod., Automobile Engg. Branch)

INFORMATION THEORY and CODING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : All questions are compulsory and carry equal marks. Part (a) is compulsory in each question and solve any two parts from (b), (c) and (d) of each question. Draw diagram wherever necessary.

Unit-I

1. (a) What is Bandwidth?   2

    (b) Explain information measures with an example.   7

(c) Discuss the source coding theorem model.   7

(d) What is communication system? Explain channel coding its detail.   7

Unit-II

2. (a) Define parity check codes.   2

(b) Explain error detection and error correction with an example.   7

(c) Discuss the linear block code by matrices in detail.   7

(d) Write short notes on :   7

   (i) Block codes

   (ii) Hamming codes

Unit-III

3. (a) What is CCITT?   2

(b) Explain binary image compression schemes in detail.   7

(c) Explain Huffman codes with an example.   7

(d) Compare between lossless and lossy compression.   7

Unit-IV

4. (a) What is image compression?   2

(b) Explain CCITT H 261 video coding algorithm.   7

(c) Discuss MPEG-2 compression in detail.   7

(d) Write short notes on :   7

   (i) Speech compression

   (ii) MPEG compression

Unit-V

5. (a) What is Cryptography?   2

(b) Explain R-S-A. Algorithm with an example.   7

(c) Describe the DES and explain in detail.   7

(d) Write short notes on :

   (i) Block cipher code   4

   (ii) Digital signature   3