

**M. TECH.-III (INFORMATION TECHNOLOGY) (CBCS – 2015
COURSE) : SUMMER - 2018**
**SUBJECT : SELF STUDY PAPER – I: INFORMATION THEORY CODING &
CRYPTOGRAPHY**

Day : **Saturday**
Date : **02/06/2018**

S-2018-3104

Time : **11.00 AM TO 02.00 PM**
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labeled diagram **WHEREVER** necessary.
 - 4) Answers to both the section should be written in the **SEPARATE** answer books.
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SECTION – I

Q.1 Define Entropy. Explain the principle of uncertainty in detail. (10)

OR

Q.1 Explain the concept of joint and conditional entropy. (10)

Q.2 State and explain Fermat's Little theorem. (10)

OR

Q.2 Explain the algorithm for random number generation with suitable example. (10)

Q.3 What are various error detecting codes? What is their purpose? Explain with example. (10)

OR

Q.3 What are various methods for generating cyclic codes? Explain any one. (10)

SECTION – II

Q.4 What are BCH Codes? What is their purpose? Explain with example. (10)

OR

Q.4 What are convolution codes? Explain with suitable example. (10)

Q.5 What are various encryption techniques? Explain IDEA in detail. (10)

OR

Q.5 What is quantum cryptography? Explain in detail. (10)

Q.6 Explain the Huffman coding method of data compression with example. (10)

OR

Q.6 Explain any one image compression algorithm. (10)

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