



MBU-003-027402 Seat No. _____

M. Sc. (ECI) (Sem. IV) Examination

April / May - 2018

Department of Electronics : Paper-14

(Fundamental of Communication Electronics)

Faculty Code : 003

Subject Code : 027402

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions :

- (1) Attempt all questions.
- (2) Make suitable diaaram whenever necessary
- (3) Figure to the right indicate full marks of questions.

1 Answer the following questions (any **Seven** out of **Ten- 2** **14**
marks each)

- a. What is the Energy and Power signal ?
- b. Define probability.
- c. Define Cross-correlation and Auto-correlation ?
- d. Name the singularity function.
- e. Define sampling and Quantization ?
- f. Name the important source of information.
- g. Define an event, and sample space.
- h. Attempt Dirchlet's condition for Fourier series to exists.
- i. Explain gate Function.
- j. What is Modulation and Modulation index of AM ?

2 Answer the following questions : **14**

- a. Explain the process of converting analog into digital. **5**
- b. Two Cards are drawn randomly from an ordinary deck of **5**
52 playing cards. Obtain the probability that one card is a
diamond and the other card is a heart.

- c. State and explain frequency convolution theorem. **4**
- OR**
- c. What do you mean by Singularity function and explain its types ? **4**
- 3** Answer the following questions : (7 marks each) **14**
- a. Explain balanced slope detector method for FM demodulator.
- b. A box contains 5 white, 6 Red and 4 black balls. Three balls are drawn in succession. Find the probability that the balls will be of different colours.
- OR**
- 3** Write short notes on followings : **14**
- a. Single tone amplitude modulation **5**
- b. Need of Modulation **5**
- c. Signal and its types. **4**
- 4** Answer the following questions : 7 marks each) **14**
- a. What is communication and Explain the process of communication in detailed ?
- b. How PM and FM are related and also explain how to generate FM using phase modulator and PM using frequency modulator.
- 5** Answer the followings (any **Two** out of **Four**- 7 marks each) **14**
- a. State and prove frequency shifting property of Fourier transform.
- b. States all Properties of CTFS.
- c. Explain digital communication with neat and clean block diagram.
- d. What is Fourier Transform and find Fourier transform of Gaussian pulse.
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