B.TECH SEM - IV (2007 COURSE) (E & TC ENGG.) :
SUMMER - 2018
SUBJECT: ANALOG COMMUNICATION

Day : **Tuesday** Time : **10.00 AM TO 01.00 PM**
Date : **05/06/2018** **S-2018-2645** Max. Marks : 80

N. B. :

1) **Q. No. 1 and Q. No. 5** are **COMPULSORY**. Out of remaining attempt **ANY TWO** questions from section – **I** and section – **II**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in the **SEPERATE** answer books.
4) Use of non-programmable calculator is **ALLOWED**.
5) Draw neat and labeled diagram **WHEREVER** necessary.
6) Assume suitable data, if necessary.

SECTION - I

Q. 1 **a)** What are the types of communication channels? Explain any two in detail. **(05)**

b) What are the advantages and disadvantages of SSB-SC? **(05)**

c) What is pre-emphasis? Why it is needed? **(04)**

Q. 2 **a)** With block schematic explain basic communication system. **(07)**

b) What is RF band in communication? **(06)**

Q. 3 **a)** Explain with circuit diagram square law modulator for AM generation. **(07)**

b) What is VSB? Explain with diagram. **(06)**

Q. 4 **a)** Explain the direct method of FM generation. **(07)**

b) Compare PAM,PWM and PPM. **(06)**

SECTION - II

Q. 5 **a)** Derive expression for noise figure. **(06)**

b) Explain the terms sensitivity and selectivity. **(04)**

c) Explain Bandwidth and Beamwidth of antenna **(04)**

Q. 6 **a)** Explain the terms: **(08)**

i) Shot noise
ii) Thermal noise
iii) Signal to noise ratio
iv) Extraterrestrial noise

b) What is noise temperature? Derive expression for equivalent noise temperature. **(05)**

Q. 7 **a)** Draw and explain FM receiver. **(07)**

b) Explain with diagram phase discriminator **(06)**

Q. 8 **a)** Explain ground wave propagation with neat diagram. **(07)**

b) Explain the terms: **(06)**

i) Diversity reception
ii) Fading

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