F 3003 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, DECEMBER 2012

Third Semester

Branch : Information Technology

IT 010 305 – PRINCIPLES OF COMMUNICATION ENGINEERING (IT)

(New Scheme – Regular / Improvement / Supplementary)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

Part A

Each question carries 3 *marks.*

1. What are the limitations of TRF receivers?
2. Define modulation factor in the case of AM.
3. What are pre-emphasis and de-emphasis?
4. What is double spotting?
5. Define Sampling theorem for pass band signals.

(5 × 3 = 15 marks)

Part B

Each question carries 5 *marks.*

6. Compare the characteristics of different channels used for communication.
7. What are high level and low level modulations? Compare their characteristics.
8. Differentiate between Narrow band FM and Wide band FM.
9. Calculate the overall noise figure of a three-stage cascaded amplifier, each stage having a power gain of 15 dbs and a noise figure of 8 dbs.
10. Explain how PPM signals are generated.

(5 × 5 = 25 marks)

Part C

Each question carries 12 *marks.*

11. Explain with a block diagram, the principles of microwave communication system.

Or

12. Draw and explain the functional block diagram of a double superheterodyne receiver.

Turn over

13. Explain with a circuit diagram the working of a SSB modulator.

Or

14. Draw and explain the circuit of a VSB modulator.

15. Explain with a circuit diagram, the principle of operation of an FM transmitter.

Or

16. Compare the characteristics and uses of AM, FM and PM.

17. Discuss the methods of noise calculation in radio receivers.

Or

18. Explain the characteristics of receivers.

19. Explain with circuit diagrams the generation and demodulation of PWM waves.

Or

20. Discuss on the spectra of pulse modulated signals.

(5 × 12 = 60 marks)