Total No. of printed pages = 3

Et-401/CE-I/4th Sem/ETC/2017/M

COMMUNICATION ENGINEERING – I

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) How is the spectrum of E.M wave classified ? Give the classification in details.

   (b) With the help of a block diagram, explain a communication system in detail. 8+6=14

2. (a) What is modulation ? Why do we do modulation ? Explain the different types with wave forms. 1+2+6=9

   (b) Define high level and low level modulation. 5

[Turn over

3. (a) Derive the relation between carrier power and the transmitted power in an A.M wave. 8

(b) Prove that an A .M wave consists of a carrier, an upper side band (USB) and a lower side band (LSB). 6

4. (a) What is VSB ? 7

(b) Explain with simple expression modulation index in FM. 7

5. (a) What are the different ionospheric layers in day time and night time ? 5

(b) Discuss about ground wave, sky wave and space wave wave propagation of waves in detail. 9

6. (a) Discuss about different transmission lines and their losses. 8

(b) Explain standing waves and SWR. 6

7. Explain in detail about pulse modulation and its types. 14

8. Compare and contrast : 7+7=14

(a) AM and FM

(b) Resonant and non-resonant antennas.

9. Write notes on any *two* : 7×2=14

(a) Balanced modulator

(b) LOS propagation

(c) Telephone components and exchange.