Chap . 3 Theory of travelling waves and standing waves

Multiple Choice Questions

1. Refraction coefficient of current (J_T) is given by
   A. $\frac{2Z_0}{Z_0+Z_t}$
   B. $\frac{Z_0-Z_t}{Z_0+Z_t}$
   C. $\frac{2Z_t}{Z_0+Z_t}$
   D. $\frac{Z_t-Z_0}{Z_0+Z_t}$

ANS: A

2. The velocity of travelling wave through a cable of relative permittivity 9 is
   A. 9×10^8 m/sec
   B. 3×10^8 m/sec
   C. 10^8 m/sec
   D. None of the above

ANS: C

3. Draining of trapped charge of line is done by
   A. Main breaker
   B. Auxiliary breaker
   C. Air circuit breaker
   D. Shunt reactors

ANS: D

4. The crest time of pulse properties for positive cycle is
   A. 20 ns
   B. 30 ns
   C. 40 ns
   D. 50 ns

ANS: D

5. Refraction coefficient of voltage (K_T) for open ended line
   A. +2
   B. 1
   C. -1
   D. 0

ANS: A

6. Reflection coefficient of voltage (K_r) for open circuit is
   A. 0
   B. +2
   C. +1
   D. -1

ANS: C

7. Television and frequency modulation broadcast and reception covers frequencies in the range of
   E. 25 – 100 MHz
   F. 40 – 60 MHz
   G. 50 – 80 MHz
   H. None of the above

ANS: A

8. Transposition of power lines is done to
   A. Reduce copper losses
   B. Prevent short circuit between two lines
   C. Prevent interference with telephone lines
   D. All of these

ANS: C

9. The cause of reflected and refracted wave is
   A. Discontinuity at the junction
   B. Lighting effect
   C. Switching surge
   D. None of these

ANS: A

10. Which of the following transmission line has the reflection coefficient of minus one?
    A. Open circuit transmission line
    B. Short circuit transmission line
    C. Long transmission line
    D. Short transmission line

ANS: B

11. What will be the reflection coefficient of the wave of load connected to transmission line if surge impedance of the line is equal to load?
    A. Unity
    B. Infinity
    C. Zero
    D. 10

ANS: C

12. The velocity of propagation of electromagnetic waves on overhead line is
    A. 3×10^8 m/s
    B. 3×10^8 km/s
    C. 3×10^{10} m/s
    D. 3×10^8 km/hour

ANS: A

13. What does the standing wave ratio (SWR) of unity imply?
    A. Transmission line is open circuited
    B. Transmission line is short circuited
    C. Transmission lines characteristic impedance is equal to load impedance
    D. Transmission lines characteristic impedance is not equal to load impedance

ANS: C

14. In general method of Laplace transform the series and shunt impedance operator per unit length of line is
    A. $z(s) = r + l(s)$
    B. $y(s) = g + c(s)$
    C. Both A & B
    D. None of the above

ANS: C

15. In lossless transmission line theoretically have
    A. $r = l = 0$
    B. $l = g = 0$
    C. $g = c = 0$
    D. $r = g = 0$

ANS: D