Mini Test: Electromagnetic Field Theo... (5th Sem ECE Class (July-Dec 2021 Academic Year 2021-2022))

1. Scholar Number (eg., 19U010**) *

19U01017

2. The distortionless line is one in which the attenuation constant and phase constant are independent of the frequency. State true/false.
(1 Point)

- True
- False

3. Standing wave ratio is defined as the
(1 Point)

- Ratio of voltage maxima to voltage minima
- Ratio of current maxima to current minima
- Product of voltage maxima and voltage minima
- Product of current maxima and current minima

4. The input impedance of a lossless transmission line is 100 ohm when terminated in a short-circuit, and 64 ohm when terminated in an open circuit. The characteristic impedance of the line is
(2 Points)

- 64 ohm
- 36 ohm
- 80 ohm
- 100 ohm

5. For R= 20 ohm and G= 0.8 mho, the attenuation constant for distortionless line will be
(2 Points)

- 32
- 4
- 2
- 16

6. The condition that holds good in a distortionless transmission line is
(1 Point)

- RG = LC
- RG/LC
- R/L = G/C
- R/C = L/G

7. Example of a spherical system in the following is
(1 Point)

- Charge in dielectric
- Charge in box
- Uncharged system
- Charge in space

8. Given that the reflection coefficient is 0.6. Find the SWR.
(2 Points)

- 6
- 4
- 8
- 2

9. The open circuit impedance of the transmission line is given by
(1 Point)

- Zoc = j Zo cot βl
- Zoc = j Zo tan βl
- Zoc = - j Zo cot βl
- Zoc = - j Zo tan βl

10. For an infinite transmission line, the characteristic impedance is given by 50 ohm. Find the input impedance.
(2 Points)

- 50
- 100
- 2500

25

11. Find the characteristic impedance expression in terms of the inductance and capacitance parameters.
(1 Point)

- Zo = √(LC)
- Zo = √(L/C)
- Zo = L/C
- Zo = LC

12. Convert the point (3,4,5) from Cartesian (x,y,z) to spherical (r,Θ,Φ) coordinates
(2 Points)

- $(0.707,54^0,63^0)$
- $(7.07,45^0,53^0)$
- $(7.07,54^0,63^0)$
- $(0.707,45^0,53^0)$

13. The purpose of the transmission line equation is to
(1 Point)

- Find the reflection cofficient
- Impedance matching
- Find primary parameters
- Find secondary parameters

14. A charge is placed in a square container. The position of the charge with respect to the origin can be found by
(1 Point)

- Circular system
- None of the above
- Spherical system
- Cartesian system

15. The resistance of a lossless transmission line is
(1 Point)

- -1
- Infinity
- 0
- 1

16. In the matched line, the transmission coefficient is
(1 Point)

- Infinity
- 1
- 0
- -1

password.