

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

- In an uniform wave plane the value of $\frac{E}{H}$ is []
 A) $\sqrt{\frac{\mu}{\epsilon}}$ B) $\sqrt{\frac{\epsilon}{\mu}}$ C) 1 D) $\sqrt{\mu\epsilon}$
- _____ is a measure of the depth to which an EM wave can penetrate into the medium []
 A) Skin depth B) Loss depth C) Both A and B D) None of the above
- If the phase velocity of a plane wave in a perfect dielectric is 0.4 times to it's initial value in a free space then what is the relative permittivity of dielectric? []
 A) 4.25 B) 5.25 C) 6.25 D) 7.25
- Reflection co-efficient for a normal incidence at plane conducting medium is []
 A) 1 B) -1 C) -2 D) 0
- Units for pointing vector are []
 A) Watt/length B) Volts C) Power D) Watt/unit area
- Range of VSWR is []
 A) 1 to ∞ B) -1 to 1 C) 0 to ∞ D) -1 to ∞
- A 50Ω characteristic impedance line is connected to load which shows a reflection co-efficient is 0.268. What is terminated load impedance? []
 A) 85Ω B) 86.61Ω C) 88Ω D) 87.12
- Characteristic impedance in terms of primary constants for frequency is _____ []
 A) $\sqrt{\frac{L}{C}}$ B) $\sqrt{\frac{C}{L}}$ C) \sqrt{LC} D) $\sqrt{\frac{1}{LC}}$
- The required condition for distortion less transmission line is []
 A) $RC=LG$ B) $\frac{R}{G} = \frac{L}{C}$ C) Both A and B D) None of the above
- Solutions of Laplace's equation which are continuous through second derivative are called []
 A) Bessel functions B) Odd functions C) Harmonic functions D) Fundamental functions

II Fill in the Blanks:

11. Units for phase constant(β) are_____.
12. When the two components of electric field are of unequal amplitudes which is a constant value and non-zero phase difference between them in an uniform plane wave is said to be_____ Polarization.
13. The angle of incidence at which there is no reflection is known as_____ angle.
14. Reflection co-efficient of a normal incidence at plane dielectric boundary is given by_____ .
15. An Uniform plane wave impinges obliquely on a dielectric – dielectric medium with $\epsilon_{r1}=2$ and $\epsilon_{r2}=1$. Then the angle of incidence for total reflection is _____
16. The primary constants of a Transmission line are_____.
17. In a short circuit load the input impedance is_____.
18. Relation between Z_0 , Z_{oc} and Z_{sc} are_____.
19. Distance of_____ on a line corresponds to a movement of 360° on smith chart.
20. The reflection co-efficient is equal to 1 then the VSWR is_____.

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A) 4.25 B) 5.25 C) 6.25 D) 7.25

II Fill in the Blanks:

11. Reflection co-efficient of a normal incidence at plane dielectric boundary is given by_____.
12. An Uniform plane wave impinges obliquely on a dielectric – dielectric medium with $\epsilon_{r1}=2$ and $\epsilon_{r2}=1$. Then the angle of incidence for total reflection is _____
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18. Units for phase constant(β) are_____.
19. When the two components of electric field are of unequal amplitudes which is a constant value and non-zero phase difference between them in an uniform plane wave is said to be _____ Polarization.
20. The angle of incidence at which there is no reflection is known as _____ angle.

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Code No: 58054

Set No. 3

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

IV B.Tech. II Sem., II Mid-Term Examinations, April-2014

ELECTROMAGNETIC THEORY AND TRANSMISSION LINES

Objective Exam

Name: _____ Hall Ticket No.

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I. Choose the correct alternative:

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A) 1 to ∞ B) -1 to 1 C) 0 to ∞ D) -1 to ∞
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3. Characteristic impedance in terms of primary constants for frequency is _____ []
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4. The required condition for distortion less transmission line is []
A) $RC=LG$ B) $\frac{R}{G} = \frac{L}{C}$ C) Both A and B D) None of the above
5. Solutions of Laplace's equation which are continuous through second derivative are called []
A) Bessel functions B) Odd functions C) Harmonic functions D) Fundamental functions
6. In an uniform wave plane the value of $\frac{E}{H}$ is []
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7. _____ is a measure of the depth to which an EM wave can penetrate into the medium []
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A) 4.25 B) 5.25 C) 6.25 D) 7.25
9. Reflection co-efficient for a normal incidence at plane conducting medium is []
A) 1 B) -1 C) -2 D) 0
10. Units for pointing vector are []
A) Watt/length B) Volts C) Power D) Watt/unit area

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II Fill in the Blanks:

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