Program: BE EXTC Engineering

Curriculum Scheme: Revised – 2016

Examination: Third Year Semester : V

Course Code:ECC503 and Course Name: Electromagnetic Engineering(EE)

Time: 1-hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

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| Q1.  | If a negative charge is absent, then where do the flux lines terminate?  |
| Option A: | At zero |
| Option B: | At unity |
| Option C: | At infinity |
| Option D:  | At radial field |
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| Q2. | Divergence theorem is applicable for  |
| Option A: | Static fields only |
| Option B: | Time varying fields only |
| Option C: | Both static and time varying fields |
| Option D: | Not applicable to any field |
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| Q3. | The capacitance of a material refers to  |
| Option A: | Ability of the material to store magnetic field |
| Option B: | Ability of the material to store electromagnetic field Option |
| Option C: | Ability of the material to store electric field |
| Option D: | Potential between two charged plates |
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| Q4. | Find the characteristic impedance expression in terms of the inductance and capacitance parameters.  |
| Option A: | Zo = sqrt(LC) |
| Option B: |  Zo = LC |
| Option C: | Zo = sqrt(L/C) |
| Option D: | Zo = L/C |
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| Q5. | Copper behaves as a  |
| Option A: | Conductor always |
| Option B: | Conductor or dielectric depending on the applied electric field strength |
| Option C: | Conductor or dielectric depending on the frequency |
| Option D:  | Conductor or dielectric depending on the electric current density |
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| Q6. | Curl (E) = -∂B/∂t is called  |
| Option A: | Maxwell’s equation for static fields |
| Option B: | Maxwell’s equation for time varying fields |
| Option C: | Gauss Law of electrostatics |
| Option D:  | Biot Savart’s law |
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| Q7.  | A boundary of separation between two magnetic materials is identified by which factor?  |
| Option A: | Change in the permeability |
| Option B: | Change in permittivity |
| Option C: | Change in magnetization |
| Option D:  | Conduction |
|  |  |
| Q8.  | Given that the reflection coefficient is 0.6. Find the VSWR |
| Option A: | 2 |
| Option B: | 4 |
| Option C: | 6 |
| Option D:  | 8 |
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| Q9. | The work done in µJ by a charge of 10μC with a potential 4.386 volts is  |
| Option A: | 32.86 |
| Option B: | 43.86 |
| Option C: | 54.68 |
| Option D:  | 65.68 |
|  |  |
| Q10.  | The ratio of conduction to displacement current density is referred to as  |
| Option A: | Attenuation constant |
| Option B: | Propagation constant |
| Option C: | Loss tangent |
| Option D:  | Dielectric constant |
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| Q11.  | If the rotational path of the magnetic field intensity is zero, then the current in the path will be  |
| Option A: | 1 |
| Option B: | 0 |
| Option C: | ∞ |
| Option D:  | 0.5 |
|  |  |
| Q12.  | The SI unit of magnetic field intensity is  |
| Option A: | A/m |
| Option B: | V/m |
| Option C: | C/m |
| Option D: | F/m |
|  |  |
| Q13. | Which component of the electric field intensity is always continuous at the boundary?  |
| Option A: | Tangential |
| Option B: | Normal |
| Option C: | Horizontal |
| Option D:  | Vertical |
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| Q14.  | Which of the following cannot be computed using the Biot-Savart’s law?  |
| Option A: | Magnetic field intensity |
| Option B: | Magnetic flux density |
| Option C: | Electric field intensity |
| Option D:  | Permeability |
|  |  |
| Q15. | Consider a transmission line of characteristic impedance 50 ohm. Let it be terminated at one end by +j50 ohm. The VSWR produced by it in the transmission line will be  |
| Option A: | 1 |
| Option B: | 0 |
| Option C: | Infinity |
| Option D:  | +j |
|  |  |
| Q16.  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ provides a method whereby the potential function can be obtained subject to the conditions on the boundary.  |
| Option A: | Poisson’s Equation |
| Option B: | Faraday’s Law |
| Option C: | Laplace’s Equation |
| Option D:  | Poynting Theorem |
|  |  |
| Q17. | If divergence of a field is positive, then field acts as a  |
| Option A: | Reducing field |
| Option B: | Increasing field |
| Option C: | Converging field |
| Option D: | Diverging field |
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| Q18. | Total magnetic flux crossing a closed surface is  |
| Option A: | Total flux enclosed by the surface |
| Option B: | Total current enclosed by the surface  |
| Option C: | Total charge enclosed by the surface  |
| Option D:  | Zero |
|  |  |
| Q19.  | The open wire transmission line consists of  |
| Option A: | Conductor |
| Option B: | Dielectric |
| Option C: | Both conductor and dielectric |
| Option D:  | Either conductor or dielectric |
|  |  |
| Q20. | The magnitude of the Ex and Ey components are same in which type of polarization?  |
| Option A: | Linear |
| Option B: | Circular |
| Option C: | Elliptical |
| Option D: | Perpendicular |
|  |  |
| Q21. | A bar magnet is divided in two pieces. Which of the following statements is true?  |
| Option A: | The bar magnet is demagnetized |
| Option B: | The magnetic field of each separated piece becomes stronger |
| Option C: | The magnetic poles are separated. |
| Option D:  | Two new bar magnets are created |
|  |  |
| Q22.  | Relationship between Electric and Magnetic field is given by  |
| Option A: | Characteristic Impedance |
| Option B: | Admittance |
| Option C: | Intrinsic impedance |
| Option D:  | Resistance |
|  |  |
| Q23. | One Telsa is equal to  |
| Option A: | 1 Wb/m^2 |
| Option B: | 1 C/m^2 |
| Option C: | 1 Wb/C |
| Option D:  | 1 N/C |
|  |  |
| Q24.  | The property of coil by which a counter e.m.f. is induced in it when the current through the coil changes is known as  |
| Option A: | self-inductance |
| Option B: | mutual inductance |
| Option C: | series aiding inductance |
| Option D:  | capacitance |
|  |  |
| Q25. | Material that exhibits negative refraction is  |
| Option A: | Graphene |
| Option B: | Memristor |
| Option C: | Superconductor |
| Option D:  | Metamaterial |