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| **Course/Branch** : B.E/ECE | **Year / Semester** :IV/VII | Format No. | NAC/TLP-07a.13 |
| **Subject Code** : EC8092 | **Subject Name** :Advanced Wireless Communication | Rev. No. | 02 |
| **Unit No** :02 | **Unit Name :Radio wave propagation** | Date | 30.09.2020 |

**OBJECTIVE TYPE QUESTION BANK**

| S. No. | Objective Questions (MCQ /True or False / Fill up with Choices ) | BTL |
|---|---|---|
| 1 | The ..... of the reflected and transmitted waves may be related to the incident wave in the medium of origin through the Fresnel reflection coefficient.<br><br>a)**Electric field intensity**<br><br>b)Magnetic field intensity<br><br>c)All the mentioned<br><br>d)None of the mentioned | L3 |
| 2 | ..... occurs when electromagnetic waves bounce off objects whose dimensions are large compared with the wavelength of the propagating wave.<br><br>a) Diffraction<br><br>b) **Reflection**<br><br>c) Scattering<br><br>d) All the mentioned | L3 |
| 3 | Reflection coefficient depends on the<br><br>a) None of the mentioned.<br><br>b) **wave polarization, angle of incidence, and frequency of the propagating wave.**<br><br>c) wave polarization and frequency of the propagating wave.<br><br>d) wave polarization and angle of incidence | L3 |
| 4 | .....allows radio signals to propagate around the curved surface of the earth, beyond the horizon, and behind obstructions.<br><br>a) Reflection<br><br>b) **Diffraction**<br><br>c) Scattering<br><br>d) None of the mentioned | L3 |

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|---|---|---|
| 5 | The received field strength..... rapidly as a receiver moves deeper into the obstructed (shadowed) region.<br>a) increases<br>b) **decreases**<br>c) Both increases and decreases<br>d) None of the mentioned. | L3 |
| 6 | The phenomenon of diffraction can be explained by the ..... principle.<br>a) Theodre<br>b) Marconi<br>c) Thompsons<br>d) **Huygens** | L3 |
| 7 | .....states that all points on a wavefront can be considered as point sources for the production of secondary wavelets and that these secondary wavelets combine to produce a new wavefront in the direction of propagation.<br>a) Theodre<br>b) Marconi<br>c) Thompsons<br>d) **Huygens** | L3 |
| 8 | The field strength of a diffracted wave in the shadowed region is the vector sum of the ..... components of all the secondary wavelets in the space around the obstacle.<br>a) Magnetic field<br>b) **Electric field**<br>c) Both magnetic and electric field<br>d) None of the mentioned. | L3 |

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|---|---|---|
| 9 | Objects such as lampposts and trees tend to .....<br><br>energy in all directions, thereby providing additional radio energy at the receiver.<br>a) reflect<br><br>b) diffract<br><br>c) All the mentioned<br><br>d)**scatter** | L3 |
| 10 | Sometimes reflection, diffraction and scattering are collectively referred to as .....<br><br>a) diffraction<br><br>b) **scattering**<br><br>c) reflection<br><br>d) None of the mentioned | L3 |
| 11 | Propagation models based on average-received signal strength at a given distance from the transmitter are useful to estimate a radio coverage area and are called .....<br><br>a) **large-scale propagation models or macroscopic fading models**<br><br>b) small-scale propagation models or microscopic fading models<br><br>c) None of the mentioned<br><br>d) Fleming fading model | L3 |
| 12 | ..... undergo free-space propagation.<br><br>a) None of the mentioned<br><br>b) Microwave line-of-sight radio links<br><br>c) Satellite communication<br><br>d) **Satellite communication systems and microwave line-of-sight radio links** | L3 |

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| **Unit No** :02 | **Unit Name** :**Radio wave propagation** | Date | 30.09.2020 |

**OBJECTIVE TYPE QUESTION BANK**

| S. No. | Objective Questions (MCQ /True or False / Fill up with Choices ) | BTL |
|---|---|---|
| 13 | What is the speed of light in meters/sec?<br>a) $0.3 \times 10^7$ m/sec<br>b) $3 \times 10^9$ m/sec<br>c) **3 ò÷10⁸ m/sec**<br>d) $30 \times 10^{11}$ m/sec | L3 |
| 14 | Effective isotropic radiated power (EIRP) is defined as<br>a) **EIRP = PtGt**<br>b) EIRP = PtGtβ<br>c) EIRP = Pt<br>d) EIRP = Gt | L3 |
| 15 | ---------- is a widely used model for signal prediction in an urban area.<br>a) **Okumura model**<br>b) Hata model<br>c) Rayleigh model<br>d) None of the mentioned. | L3 |
| 16 | ----------refers to the rapid fluctuations of the received signal in space,time, and frequency and is caused by the signal scattering off objects between the<br>transmitter and receiver.<br>a) **Macroscopic fading**<br>b) Microscopic fading<br>c) Space time fading<br>d) Frequency fading | L3 |

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|---|---|---|
| 17 | There are ----------types of microscopic fading.<br>a) Five<br>b) Two<br>c) Four<br>d) **Three** | L3 |
| 18 | Time varying fading due to the motion of a scatterer or the motion of a transmitter or receiver or both results in----------.<br>a) **Doppler spread**<br>b) Delay spread<br>c) Angle spread<br>d) All the mentioned | L3 |
| 19 | The mean excess delay is the ---------moment of the power delay profile<br>a) **first**<br>b) second<br>c) third<br>d) fourth | L3 |
| 20 | Direct Pulse Measurements technique enables engineers to rapidly determine the ----------of the channel<br>a) Current delay profile<br>b) Voltage delay profile<br>c) **power delay profile**<br>d) None of the mentioned. | L3 |

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| S. No. | Objective Questions (MCQ /True or False / Fill up with Choices ) | BTL |
|---|---|---|
| 21 | The advantages of Spread-Spectrum Sliding Correlator Channel Sounding system are<br><br>a) Transmitter and receiver synchronization problem is eliminated by the sliding correlator.<br><br>b) Sensitivity is adjustable by changing the sliding factor and the post correlator filter bandwidth<br><br>c) Required transmitter powers can be considerably lower than comparable direct pulse systems due to the inherent ‘‘processing gain’’ of the spread spectrum systems<br><br>d) **All the mentioned**. | L3 |
| 22 | The disadvantages of Spread-Spectrum Sliding Correlator Channel Sounding system are<br><br>a) The measurements are not made in real time, unlike in direct pulse systems,because they are compiled as the PN codes slide past each other<br><br>b)Time taken to measure the channel is very high<br><br>c) Phase measurement is not possible because the detector is noncoherent<br><br>d) **All the mentioned** | L3 |
| 23 | In Frequency Domain Channel Sounding, a ----------controls a swept frequency synthesizer.<br><br>a) Frequency spectrum analyser<br><br>b) PLL<br><br>c) VCO<br><br>d) **vector network analyzer** | L3 |
| 24 | In Frequency Domain Channel Sounding, a/an ----------test set is used to monitor the frequency response of the channel.<br>a) H-parameter<br>b) **S-parameter**<br>c) R-parameter<br>d) None of the mentioned. | L3 |

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|---|---|---|
| 25 | In----------, the signals from all of the MR branches are weighted according to their individual SNRs and then summed .<br><br>a) All the mentioned<br>b) **Maximal ratio combining (MRC)**<br>c) Selection Combining<br>d) Equal Gain Combining | L3 |