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| Question  No | WRT | **1 Mark Questions** | 7 | 5 |  |
| 1 |  | What is noise in electronic communication systems? |  | 1 | CO-1 |
|  |  |  |  |  |  |
| 2 |  | What causes shot noise in electronic circuits? |  | 1 | CO-2 |
|  |  |  |  |  |  |
| 3 |  | Which physical phenomenon is responsible for generating thermal noise? |  | 1 | CO-2 |
|  |  |  |  |  |  |
| 4 |  | What is typically used to represent noise in the frequency domain? |  | 1 | CO-2 |
|  |  |  |  |  |  |
| 5 |  | What does the power spectral density (PSD) of a signal represent? |  | 1 | CO-1 |
|  |  |  |  |  |  |
| 6 |  | List the external sources of noise. |  | 1 | CO-2 |
|  |  |  |  |  |  |
| 7 |  | What is the PSD of white noise? |  | 1 | CO-1 |
|  |  |  |  |  |  |
| 8 |  | How can you classify the noise? |  | 1 | CO-2 |
|  |  |  |  |  |  |
| 9 |  | What is internal noise? |  | 1 | CO-2 |
|  |  |  |  |  |  |
| 10 |  | What are the natural sources of noise? |  | 1 | CO-2 |
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| Question  No | WRT | **2 Mark Questions** | 4 | 2 |  |
| 1 |  | Explain noise temperature with the required formulas. |  | 2 | CO-2 |
|  |  |  |  |  |  |
| 2 |  | What is white noise, and why is it called 'white'? |  | 2 | CO-2 |
|  |  |  |  |  |  |
| 3 |  | Define noise equivalent bandwidth. |  | 2 | CO-2 |
|  |  |  |  |  |  |
| 4 |  | Define the noise figure of a system. |  | 2 | CO-2 |
|  |  |  |  |  |  |
| 5 |  | Write the relationship between noise figure and equivalent noise temperature. |  | 2 | CO-2 |
|  |  |  |  |  |  |
| 6 |  | Define power spectral density. What is the unit of power spectral density? |  | 2 | CO-1 |
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| Question  No | WRT | **5 Mark Questions** | 4 | 2 |  |
| 1 |  | What is thermal noise, and derive its noise power? |  | 5 | CO-3 |
|  |  |  |  |  |  |
| 2 |  | Derive the mathematical model for noise. |  | 5 | CO-2 |
|  |  |  |  |  |  |
| 3 |  | Explain the superposition of noises. |  | 5 | CO-2 |
|  |  |  |  |  |  |
| 4 |  | Explain equivalent noise temperature and noise figure in cascade communication systems. |  | 5 | CO-2 |
|  |  |  |  |  |  |
| 5 |  | Define noise in electronic systems. Explain why understanding noise is essential in communication systems. |  | 5 | CO-2 |
|  |  |  |  |  |  |
| 6 |  | Derive the overall noise figure for a cascade of two two-port networks using Friis’ formula. |  | 5 | CO-2 |
|  |  |  |  |  |  |
| 7 |  | Define equivalent noise temperature. How is it related to the noise figure? |  | 5 | CO-2 |
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| Question  No | WRT | **12 Mark Questions** | 4 | 2 |  |
| 1 |  | What is external noise, and explain the different types of external noise? |  | 12 | CO-2 |
|  |  |  |  |  |  |
| 2 |  | What is internal noise, and explain in detail about short noise? |  | 12 | CO-2 |
|  |  |  |  |  |  |
| 3 |  | Derive the noise power when it is transmitted through the linear bandwidth system. |  | 12 | CO-3 |
|  |  |  |  |  |  |
| 4 |  | Derive the equation for noise voltage for thermal noise and draw its Thevenin’s and Norton equivalent circuits. |  | 12 | CO-3 |
|  |  |  |  |  |  |
| 5 |  | What is white noise? Draw its power spectrum density, and what is the power when white noise is transmitted through the narrowband filter? |  | 12 | CO-1 |
|  |  |  |  |  |  |
| 6 |  | 1. Define the figure of merit 2. Draw the power spectral density in terms of noise magnitude Ck 3. Explain the relation between power spectral density and power with an equation |  | 12 | CO-2 |
|  |  |  |  |  |  |