$\frac{\lambda}{2}$ (Or) half of the wavelength

28. **How much is the distance between a node and its neighbouring antinode?**
    $\frac{\lambda}{4}$.
29. **How much is the distance between a node and its neighbouring node.**
    $\frac{\lambda}{2}$.
30. **What happens to a wave, if it meets a rigid boundary?**
    The waves gets reflected (assuming that there is no absorption of energy by the boundary)
31. **What happens to a wave, if it meets a boundary which is not completely rigid?**
    A part of the incident wave gets reflected and part of incident wave gets transmitted into the other medium (assuming that boundary)
32. **What is the phase angle between the incident wave and the wave reflected at a rigid boundary?**
    p radian (or) 180 degree
33. **What is the phase angle between the incident wave and the wave reflected at an open boundary?**
    No phase change (or) zero.
34. **Give the relation between phase difference and path difference.**
    Phase difference = $\frac{2\pi}{\lambda}$ path difference, Where l is the wavelength of the wave.
35. **What are normal modes of oscillation in a stationary wave?**
    In a stationary wave, the possible frequency of oscillation of the system is characterized by a set of natural frequencies called as normal modes of oscillation.
36. **What is the meaning of the fundamental mode (or) first harmonic of oscillation in a stationary wave?**
    In a stationary wave, the oscillation of the system with lowest possible natural frequency is called as fundamental frequency (or) first harmonic.
37. **What are harmonics in a stationary wave?**
    For a vibrating system the frequencies which are integral multiples of fundamental frequency are called harmonics.
38. **What are overtones in a stationary wave?**
    For a vibrating system, frequencies greater than fundamental frequencies are called overtones.
39. **What is resonance?**
    In case of forced vibration, when the frequency of the external agent causing vibration (applied force) becomes equal to natural frequency of the vibrating body.
    The body vibrates with maximum amplitude. This phenomena is called "Resonance"
40. **What are beats?**
    The periodic waxing (increase (or) rise) and waning (decrease (or) fall) in the intensity of sound due to superposition of two sound waves of nearly same frequencies traveling in same direction are called beats.
41. **What is beat period?**
    The time interval between two consecutive waxing (or) waning is called as beat period.
42. **What is Doppler Effect?**
    The apparent change in the frequency (pitch) of sound heard by the listener due to relative motion between the source producing the sound and the listener is called as Doppler Effect.
43. **Which harmonics are absent in a closed organ pipe?**
    Even harmonics
44. **Give the formula for speed of transverse wave on a stretched string.**
    $v = \sqrt{\frac{T}{\mu}}$. Where T is the tension in the string
    μ is the linear mass density
45. **What is the increase in the speed of sound in air when the temperature of the air rises by 1°C?**
    The speed of sound increase approximately by 0.61 ms^{-1} per degree centigrade rise in temperature
46. **Why a transverse mechanical wave cannot travel in gases?**
    Shear modulus of elasticity is absent in gaseous medium, which is necessary for the propagation of transverse wave.
47. **How does the velocity of sound in air vary with temperature?**
    $V\ a\ \sqrt{T}$ i.e. velocity of sound in air is directly proportional to square root of its absolute temperature
48. **How does the velocity of sound in air vary with pressure?**
    Velocity of sound in air is independent of pressure provided temperature remains constant.
49. **Give the dimensional formula for propagation constant.**
    $[M^0 L^{-1} T^0]$
50. **The fundamental frequency of a closed pipe is 80Hz. What is the frequency of first overtone?**
    Frequency of I overtone in closed pipe
    = 3 (fundamental frequency)
    = 3 x 80 = 240 Hz