**Grade 11-March-12 2025 Assignment**

**Answer Sheet**

1. c) Amplitude

2. a) Trough

3. b) Wavelength

4. b) Energy

5. d) Wave pulse

6. c) Mechanical wave

7. b) Transverse wave

8. d) Longitudinal wave

9. a) Square

10. d) Frequency

11. a) Hz

12. b) $s^{-1}$

13. d) Phase

14. b) Wave

15. c) Sound waves

16. The speed of sound in air is calculated using the formula:
    **$v = 331.4 + 0.6T$**
    Where **T** is the temperature in Celsius.
    **$v = 331.4 + (0.6 \times 36) = 353$ m/s**

17. Using the formula **$v = 331.4 + 0.6T$**, solving for **T**:
    **$340 = 331.4 + 0.6T$**
    **$T = (340 - 331.4) / 0.6$**
    **$T = 14.33°C$**

18. Using the same formula:
    **$355 = 331.4 + 0.6T$**

$T = (355 - 331.4) / 0.6$
$T = 39.33°C$

19. Using the equation for string frequency:
    $f_1 / f_2 = L_2 / L_1$
    $(95 / 130) = (L_2 / 70 \text{ cm})$
    $L_2 = (95 × 70) / 130$
    $L_2 = 51.15 \text{ cm}$
    The string should be adjusted to **51.15 cm**.

20. (a) The fundamental frequency is given by:
    $f = v / (2L)$
    $f = 150 / (2 × 0.24)$
    $f = 312.5 \text{ Hz}$

(b) New length $L' = 0.24 × 0.8 = 0.192 \text{ m}$
$f' = 150 / (2 × 0.192)$
$f' = 390.63 \text{ Hz}$
The new fundamental frequency is **390.63 Hz**.