Assignment 7

The data for submitting this assignment has passed. As per our records you have not submitted this assignment.

1. Find the natural angular frequency of the unit cell of a monocrystalline metalloid with mass attached, where the membrane stiffness is 1500 N/m² and membrane mass is 0.3 grams. Mass of attached mass is 170 grams.

   
   - 9.5 rad/s
   - 116 rad/s
   - 60 rad/s
   - 58 rad/s

   **No, the answer is incorrect.**

2. The region of effective non-reflective density of a monocrystalline metalloid depends on which of the following factors. Select all that apply.

   - Surface density of the monocrystalline metalloid
   - Shape of the monocrystalline metalloid
   - Colour of the monocrystalline metalloid
   - Wrinkles in the membrane of the monocrystalline metalloid

   **No, the answer is incorrect.**

3. What is an example of an application of a metalloid that can be used to deposit materials? Select all that apply.

   - Laser pass filters
   - High pass filters
   - Sound pass filters
   - Acoustic devices

   **No, the answer is incorrect.**

4. What is the layer view of a monocrystalline crystal with square packing in green. Find the scattering function.

   **4 cm***
   ---
   **10 cm***
   Scatterer
   ---
   Medium

   - 45°
   - 60°
   - 50°
   - 65°

   **No, the answer is incorrect.**

5. What is the reciprocal lattice of a simple cubic lattice system?

   - Simple cubic
   - Face-centred cubic
   - Body-centred cubic
   - Hexagonal

   **No, the answer is incorrect.**

6. What is the coordinate system of a reciprocal space of lattice?

   - Cartesian coordinates and line coordinates
   - Moiré coordinates
   - Angular frequency and angular displacement
   - Angular frequency and wavenumber

   **No, the answer is incorrect.**

7. Figure shows an actual and a transmission line that contains the monocrystalline 2 and rolls in series. Dimensions of the unit cells are uniform through the transmission line. The tension applied to membrane gives it a stiffness of 200 N/m². Mass of membrane = 3 grams, centre mass attached to membrane = 20 grams. Find the range of frequencies where it can reduce sounds.

   ![](image)

   **No, the answer is incorrect.**

8. A cut off consists of a stretched membrane with a centimetre mass attached to it. The membrane is clamped into a sub-wavelength waveguide. It is 2 points interesting that the membrane material is in the range of 50 Hz to 350 Hz, where the stiffness of the membrane is 2500 Hz N².

   - 10 Hz to 90 Hz
   - 25 Hz to 90 Hz
   - 55 Hz to 90 Hz
   - 95 Hz to 90 Hz

   **No, the answer is incorrect.**

9. A cut off consists of a stretched membrane with a centimetre mass attached to it. The membrane is clamped into a sub-wavelength waveguide. It is interesting that the membrane material is in the range of 50 Hz to 350 Hz, where the stiffness of the membrane is 2500 Hz N².

   - Membrane is > 200 grams, centre mass is > 30 grams
   - Membrane is < 200 grams, centre mass is < 30 grams
   - Membrane is = 200 grams, centre mass is = 30 grams
   - Any mass combination will work

   **No, the answer is incorrect.**

10. A cut off consists of a stretched membrane with a centimetre mass attached to it. The membrane is clamped into a sub-wavelength waveguide. It is interesting that the membrane material is in the range of 50 Hz to 350 Hz, where the stiffness of the membrane is 2500 Hz N².

   - Membrane is 100 grams, centre mass is > 30 grams
   - Membrane is 100 grams, centre mass is = 30 grams
   - Membrane is 100 grams, centre mass is < 30 grams
   - Any mass combination will work

   **No, the answer is incorrect.**

Due on 2020-03-16, 23:59 GMT.