Assignment 12

Due on 2018-10-23, 23:59 IST.

1) The answer is: c. 1/2, 1/3, 1/4. For reciprocal lattice, it is not valid for a. 1 point

   A. Cc
   B. Othorhombic
   C. Trigonal
   D. Monoclinic
   E. None, the answer is incorrect.
   Answer: C
   Correct Answer: None, the answer is incorrect.

2) Which among the following is true for monoclinic? 1 point

   A. \( l = 1/b \)
   B. \( a^2 = 1/c \)
   C. \( c^2 = 1/a \)
   D. \( b^2 = 1/c \; \sin \alpha \)
   E. None, the answer is incorrect.
   Answer: E
   Correct Answer: None, the answer is incorrect.

3) Matches the following with their respective wavelengths (Å) 1 point

   | Cb | 0.71 |
   | Cr | 0.74 |
   | Fe | 0.74 |
   | Ni | 0.75 |
   | Cu | 1.93 |

   A. Ca, Sr, Al, Si, Mg, Si, V, V,T
   B. Ca, Sr, Al, Si, Mg, Si, V, V,T
   C. Ca, Sr, Al, Si, Mg, Si, V, V,T
   D. Ca, Sr, Al, Si, Mg, Si, V, V,T
   E. None, the answer is incorrect.
   Answer: C
   Correct Answer: None, the answer is incorrect.

4) The total number of reflections \( h, k, l \) and the wavelength are related by: \( \lambda = \frac{c}{4\pi} \) 1 point

   A. \( (0,0,0) \) of direct lattice \( A \)
   B. \( (0,0,0) \) of reciprocal lattice \( A \)
   C. \( (0,0,0) \) of direct lattice \( A \)
   D. \( (0,0,0) \) of reciprocal lattice \( A \)
   E. None, the answer is incorrect.
   Answer: E
   Correct Answer: None, the answer is incorrect.

5) What is the systematic absence condition for a glide perpendicular to \( c^* \)? 1 point

   A. \( k \) odd
   B. \( k \) even
   C. \( h \) odd
   D. \( h \) even
   E. \( k \) odd, \( h \) even
   Answer: D
   Correct Answer: \( h \) even

6) Every plane in the direct lattice is a point in reciprocal lattice 2 points

   A. True
   B. False
   C. Acceptable Answer: True
   D. Acceptable Answer: False
   E. None, the answer is incorrect.
   Answer: A
   Correct Answer: True

7) Large sphere gives access to larger reciprocal lattice 1 point

   A. True
   B. False
   C. None, the answer is incorrect.
   Answer: A
   Correct Answer: True

8) The sphere with smaller wavelength is larger in size 1 point

   A. True
   B. False
   C. None, the answer is incorrect.
   Answer: C
   Correct Answer: None, the answer is incorrect.

9) Lattice sphere is also known as the sphere of reflection 1 point

   A. True
   B. False
   C. None, the answer is incorrect.
   Answer: A
   Correct Answer: True

10) All the options that give within the Bravais lattice of reflection 1 point

    A. True
    B. False
    C. None, the answer is incorrect.
    Answer: C
    Correct Answer: None, the answer is incorrect.