

[Answer Sheet]**Theoretical Question 3*****Thermal Vibration of Surface Atoms***

(1) (a) Wavelength of the matter wave =

(b) Angles of the diffracted beam with the normal of the surface plane =

(2) (a) Frequency of vibration in the direction of surface normal for the surface atoms =

(b) Root-mean-square displacement in the direction of surface normal for the surface atoms =