

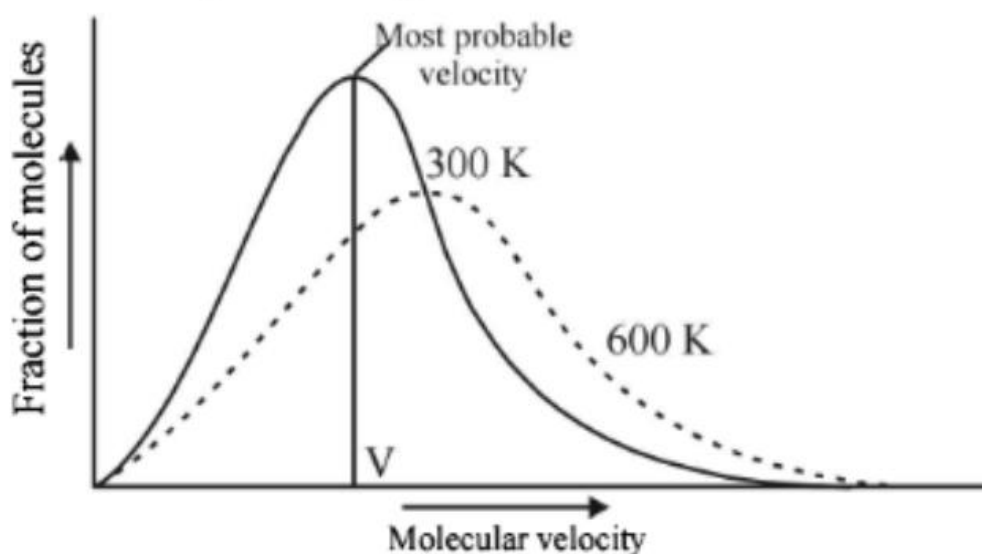
## JEE PREVIOUS YEARS QUESTION-5

Which one of the following statements is NOT true about the effect of an increase in temperature on the distribution of molecular speeds in a gas? [2005]

- (a) The area under the distribution curve remains the same as under the lower temperature
- (b) The distribution becomes broader
- (c) The fraction of the molecules with the most probable speed increases
- (d) The most probable speed increases

Answer:

- (c) Distribution of molecular velocities at two different temperature is given shown below.



**NOTE :** At higher temperature more molecules have higher velocities and less molecules have lower velocities.

As evident from fig. thus it is clear that With the increase in temperature the most probable velocity increase but the fraction of such molecules decreases.