

The Particulate nature of matter – 2019 Nov

1. 0620/11,12,13/O/N/19/No.1

The diagram shows a cup of hot tea.



Which row describes the water particles in the air above the cup compared with the water particles in the cup?

	moving faster	closer together
A	✓	x
B	✓	✓
C	x	x
D	x	✓

2. 0620/21/O/N/19/No.1

Samples of four gases are released in a room at the same time.

The gases are carbon dioxide, CO_2 , hydrogen chloride, HCl , hydrogen sulfide, H_2S , and nitrogen dioxide, NO_2 .

Which gas diffuses fastest?

- A** carbon dioxide
- B** hydrogen chloride
- C** hydrogen sulfide
- D** nitrogen dioxide

3. 0620/22/O/N/19/No.1

The rate of diffusion of a gas depends on its molecular mass and the temperature.

Which combination of molecular mass and temperature gives the slowest rate of diffusion?

	molecular mass	temperature
A	high	high
B	high	low
C	low	high
D	low	low

4. 0620/23/O/N/19/No.1

Which two gases will diffuse at the same rate, at the same temperature?

- A carbon monoxide and carbon dioxide
- B carbon monoxide and nitrogen
- C chlorine and fluorine
- D nitrogen and oxygen

