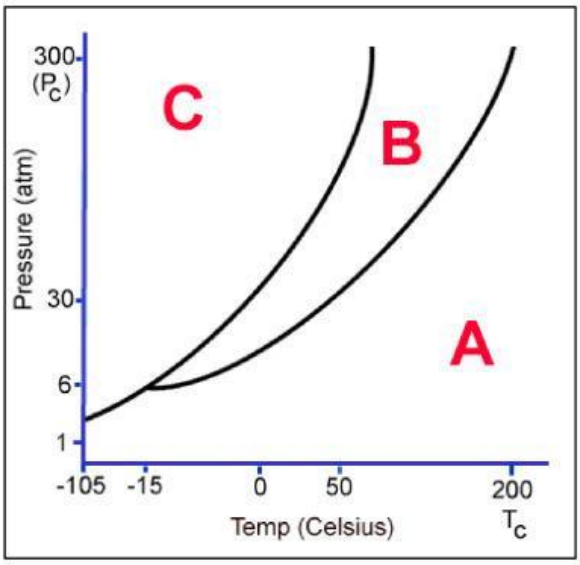
HONORS

Assignment 1 : Phase Diagrams

1. Answer the questions regarding the Phase Diagram below by selecting correct options from the drop-down boxes:



The area of the graph that represents the Liquid Phase is :

The area of the graph that represents the Gas Phase is :

The area of the graph that represents the Solid Phase is :

A Phase Change from A to B is known as :

A Phase Change from B to A is known as :

A Phase Change from C to B is known as :

A Phase Change from B to C is known as :

A Phase Change from A to C is known as :

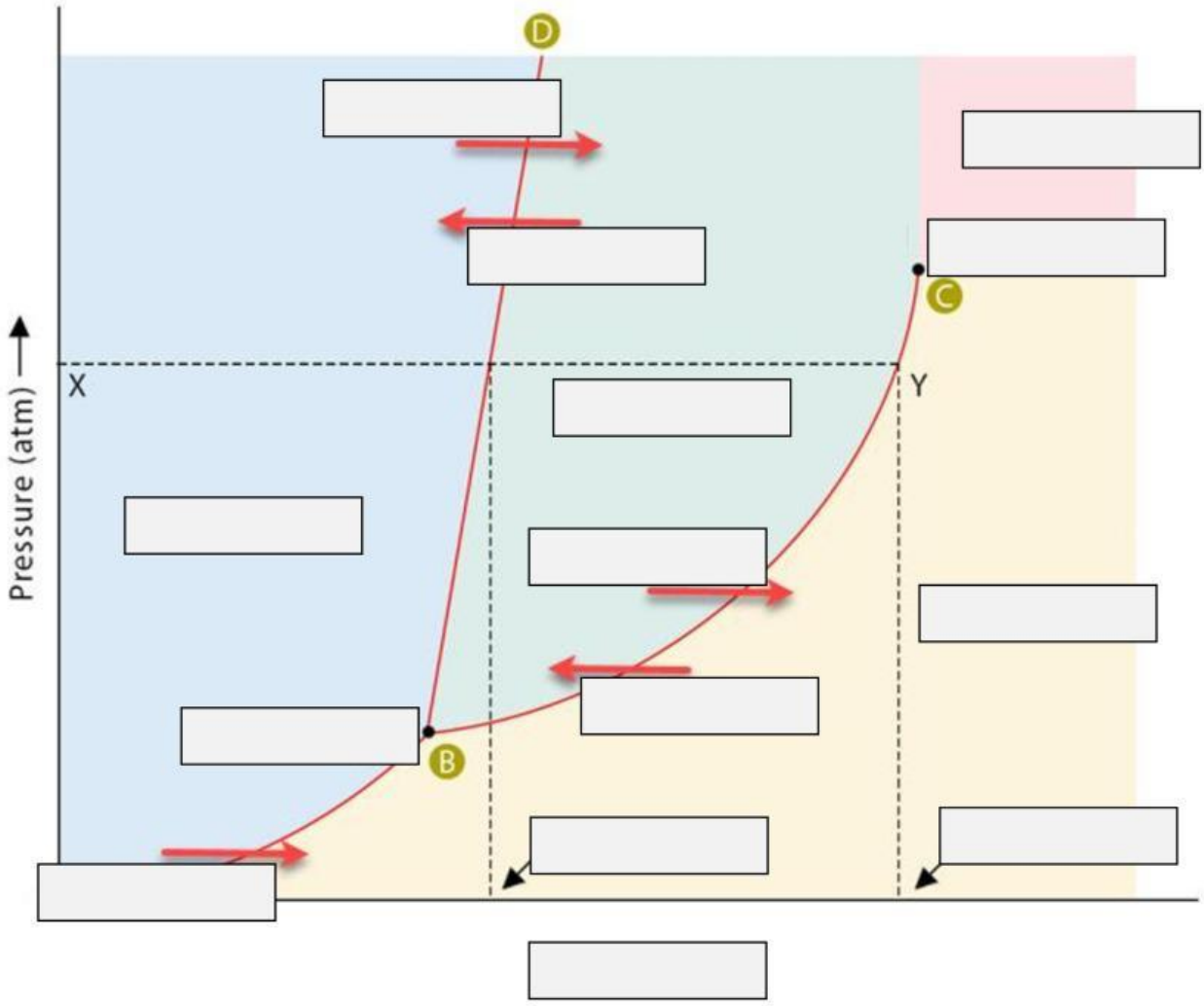
A Phase Change from C to A is known as :

Freezing occurs by :

Melting occurs by :

2. Drag & Drop each of the following items onto the Phase Diagram :

Temperature (°C)	Solid	Triple Point	Supercritical Fluid
Critical Point	Boiling Point	Melting Point	Sublimation
Vaporization	Melting	Freezing	Liquid
		Condensation	Gas



3. Interpret the Phase Diagram to the right and answer the following questions:

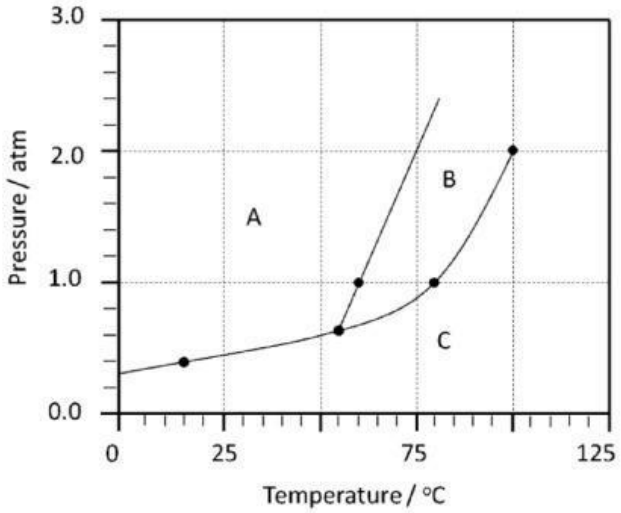
Above 100°C and below 2 atm this substance can ONLY exist as a ...

a) supercritical fluid

b) liquid

c) solid

d) gas



Above 2 atm and below 75°C this substance can ONLY exist as a ...

a) supercritical fluid

b) liquid

c) solid

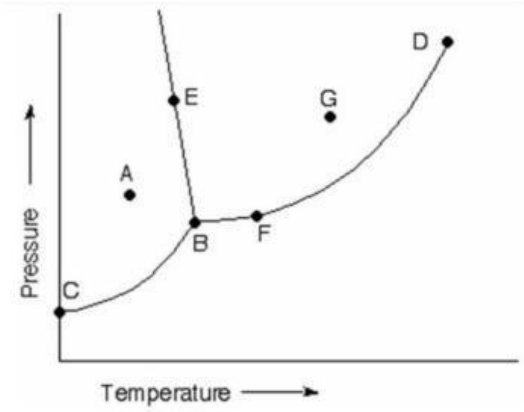
d) gas

4. Interpret the Phase Diagram to the right and answer the following questions:

Which line represents the Sublimation Curve :

Which line represents the Vaporization Curve :

Which line represents the Fusion Curve (interface between the Liquid and Solid Phases) :



Which point represents the Triple Point :

Which point represents the Critical Point :

5. Identify the following lines or points on the Phase Diagram below :

fa :

bf :

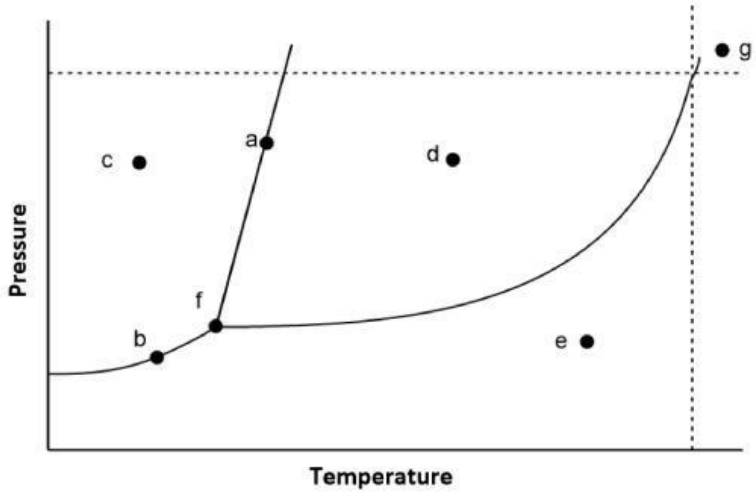
f :

c :

d :

g :

e :



6. Interpret the Phase Diagram to the right and answer the following questions:

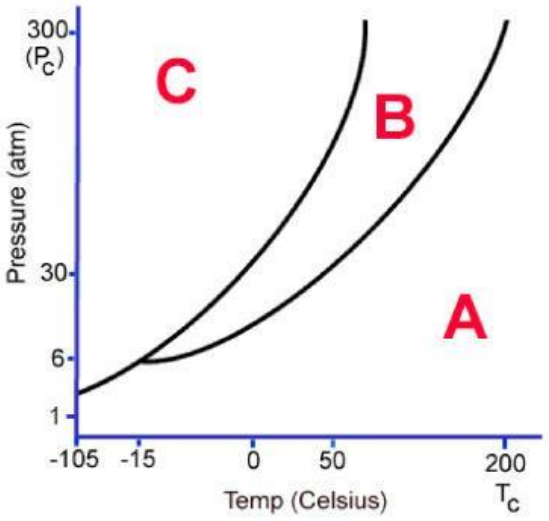
The Triple Point of this substance occurs at :

a) -15°C and 6atm

b) 200°C and 300atm

c) 0°C and 6 atm

d) -15°C and 1 atm



At 30 atm, the melting Point of this Substance is :

a) -105°C

b) 50°C

c) 0°C

d) -15°C

At 30 atm, the Boiling Point of this Substance is :

a) 200°C

b) -15°C

c) 50°C

d) 0°C

e) -105°C

At 1 atm and 0C, this substance can exist as :

a) a Gas only

b) a Liquid Only

c) a Solid Only

d) a Solid and a Gas

e) a Liquid and a Gas

If the temperature of the substance is held constant at -15 °C, the phase change that would occur with a pressure increase from 1 atmosphere to 30 atmospheres is:

a) Sublimation

b) Freezing

c) Vaporization

d) Condensation

e) Melting

f) Deposition

Above 200 °C , this substance can **only** exist as:

a) Solid

b) Liquid

c) Gas