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Solution: 1
373 K.
Solution: 2
270 - 273 = -3°C.
Solution: 3
573 - 273 = 300°C.
Solution: 4
373 + 273 = 646 K.
Solution: 5
273 + 78 = 351 K
Solution: 6
-273°C
Solution: 7
Latent heat.
Solution: 8
(a) Degree Celsius - °C
(b) Kelvin - K.
Solution: 9
Temp. on Kelvin scale = Temp. on Celsius scale + 273
Solution: 10
273.
Solution: 11
It means that 3.34×10^5 J of heat has to be supplied to change 1 Kg of ice (at its melting point, 0°C) into water at the same temperature of 0°C.
Solution: 12
It means that 22.5×10^5 J of heat is required to change 1 Kg of water (at its boiling point, 100°C) into steam at the same temperature of 100°C.
Solution: 13
(a) Boiling point.
(b) Melting point.
Solution: 14
Water.
Solution: 15
(a) Sublimation.
(b) Sublimation.
Solution: 16
Sublimation.
Solution: 17
Sublimation.
Solution: 18
Dry ice.
Solution: 19
Since solid carbon dioxide directly changes into carbon dioxide gas (or sublimes), and does not melt to produce a liquid (like ordinary ice), it is called dry ice.
Solution: 20
Lowering temperature (or cooling)
Solution: 21
False.
Solution: 22
Carbon dioxide (solid).
Solution: 23

(a) Pressure; temperature.
(b) Released.
(c) 273.
(d) Plasma; Bose-Einstein Condensate (BEC).
(e) Plasma
Solution: 24
The heat energy that has to applied to change the state of a substance is called 'latent heat'. They are of two types:
(i) Latent heat of fusion and (ii) Latent heat of vaporization.
Solution: 25
When a solid is heated, the heat energy makes its particles vibrate more vigorously. At the melting point, the particles of solid have sufficient energy to overcome the strong forces of attraction holding them in fixed positions and break to form small groups of particles. This heat energy is kinetic energy.
Solution: 26
When a change of state of a substance has to take place the heat given would not raise the temperature.

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Solution: 27
The heat energy supplied to ice during the change of state (at its melting point) is all used up in overcoming (or breaking) the force of attraction between its particles without increasing its kinetic energy. Since the heat (or latent heat) supplied during the change of state does not increase the kinetic energy of the ice cubes, therefore no rise in temperature takes place. The temperature remains constant.
Solution: 28
The heat energy supplied to water during the change of state (at its boiling point) is all used up in overcoming (or breaking) the force of attraction between its particles without increasing its kinetic energy. Since the heat (or latent heat) supplied during the change of state does not increase the kinetic energy of the water, therefore no rise in temperature takes place. The temperature remains constant.
Solution: 29
This is due to the fact that for melting, each kilogram of ice takes its latent heat of 3.34×10^5 joules from the substance and hence cools the substance more effectively. On the other hand, water at 0° cannot take any such latent heat from the substance.
Solution: 30
We would place ice in the water to cool it more quickly because the ice takes its latent heat from the water and hence cools it more effectively. On the other hand, if we keep the water on ice then the latent heat would be taken from the surrounding air hence releasing its coolness to the surrounding and not the water.

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