

Winmeen Tnpsc Group 1 & 2 Study Materials

Tnpsc Group 2 Complete Syllabus : <https://goo.gl/fNSnMN>

Tnpsc Group 2 Previous Questions : <https://goo.gl/PYqsd7>

Tnpsc Group 2 Model Questions : <https://goo.gl/xQvyTk>

22. Heat and Gas Law

1. What is heat?

“Heat is a form of energy transfer between two systems or between a system and its surroundings due to temperature difference between them”. We represent heat transfer by the symbol Q.

2. What is specific heat capacity?

“Specific Heat Capacity (SHC) is the heat required to raise the temperature of unit mass of a substance through unit temperature”. The symbol for specific heat capacity is c.

3. How is specific heat capacity defined?

“The amount of heat energy required to raise the temperature of 1 kg of a substance through 1 K.” The SI unit of SHC is J kg⁻¹ K⁻¹.

4. What is thermal capacity?

Thermal capacity is the “quantity of heat required to raise the temperature of an object through 1k”. Its unit is joule / kelvin (J/K or JK⁻¹). Thermal Capacity of an object = m x c

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5. What is latent heat?

Early scientists were amazed at the fact that heat energy seemed to be absorbed by the substance without any change in temperature. They therefore, called it “Latent Heat”. The word “latent” means – present but not visible (hidden).

6. What is latent heat of vaporization?

The latent heat required to evaporate a liquid is referred to as the latent heat of vaporization.

7. What is latent heat of fusion?

The latent heat required to melt a substance is referred to as the latent heat of fusion.

8. What is specific latent fusion?

The Specific Latent Heat of Fusion of any substance is the quantity of heat energy required to melt one kilogram of a substance without change in temperature.

9. What is Boyle`s law?

Boyle`s Law states that “Temperature remaining constant, the pressure of a given mass of gas is inversely proportional to its volume”.

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10. Who is Robert Boyle?

Robert Boyle is best known for his work in physics and chemistry. He formulated Boyle's law. He is regarded as the first modern chemist. He described the elements as primitive, simple and perfectly complete bodies. From 1661, the term 'element' has been reserved for material substances.

11. What is Charles law?

Charles' Law states that "Pressure remaining constant, the volume of a given mass of gas is directly proportional to the absolute temperature".

12. Who is Jacques Charles?

Jacques Charles was a French inventor, scientist, mathematician, balloonist and a Professor of Physics in Paris. He found the relation between the temperature and the volume. His experiment revealed that all gases expand and contract to the same extent when heated through the same temperature intervals. He constructed the first hydrogen balloon, which brought him fame and royal patronage. He also invented the hydrometer.

13. What is Kelvin Scale?

The zero of the Kelvin scale corresponds to -273°C and is written as 0K (without the degree symbol). One division on the Kelvin scale has the same magnitude of

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temperature as one division of the Celsius or Centigrade scale. Thus 0°C corresponds to $+273\text{K}$.

Kelvin scale(K) = Celsius scale (0°C) + 273

Celsius scale (0°C) = Kelvin scale (K) – 273

14. Who is Lord Kelvin?

Lord Kelvin was a physicist and an engineer. He is widely known for his significant contribution to thermodynamics. He devised the Kelvin scale of temperature. The unit of temperature was named after him to honour his outstanding contribution and achievements.

15. Who received Nobel Prize in Physics 2015?

The Nobel Prize in Physics, 2015 was awarded jointly to Takaaki Kajita and Arthur B. McDonald “ for the discovery of neutrino oscillations, which shows that neutrinos have mass”.