

Revision Thermodynamics :-

Q 1. Electrical temperature measuring indication is

Electrical resistance thermometer and Ratio meter electrical resistance thermometer.

Q 2. in thermocouple :

A voltmeter is placed across the colder of the two junctions of the thermocouple.

Q 3. internal structure of an electric thermometer indicator features a bridge circuit, galvanometer, and variable resistor

bridge circuit, galvanometer and variable resistor

Q 4. Direct reading bimetallic temperature gauge are often used in :

light aircraft to measure free air temperature or outside air temperature (OAT)

Q 5. the ratio meter electrical resistance thermometer measures a :

ratio of current flows

Q 6. if you wanted to know how much the temperature of a particular piece of material would rise when a known amount of heat was added to it, which of the following the most helpful to know ?

Specific heat

Q 7. the temperature change from 35°F during night to 75°F during the day. what is the temperature change on the Celsius scale ?

We will gonna use $\frac{F^{\circ} - 32}{1.8}$ to convert $^{\circ}\text{F} \rightarrow ^{\circ}\text{C}$

II $35^{\circ}\text{F} \rightarrow ^{\circ}\text{C}$

$$\frac{35 - 32}{1.8} \rightarrow \frac{3}{1.8}$$

$$= 1.66666^{\circ}\text{C}$$

$$\frac{3}{1.8}$$

$$\begin{array}{r} 1.6666 \\ 18 \overline{) 30.0} \\ \underline{18} \\ 120 \\ \underline{108} \\ 120 \end{array}$$

II $75^{\circ}\text{F} \rightarrow ^{\circ}\text{C}$

$$\frac{75 - 32}{1.8} = \frac{43}{1.8}$$

$$= 23.8888^{\circ}\text{C}$$

$$\frac{43}{1.8}$$

$$\begin{array}{r} 23.8888 \\ 18 \overline{) 43.0} \\ \underline{36} \\ 70 \\ \underline{54} \\ 160 \\ \underline{144} \\ 160 \end{array}$$

Q 8. Platinum temperature measuring system are used to measure temperature in :

Engine oil, outside air, Carburetor air

Q 9. Which two temperature changes are equivalent

$$1^{\circ}\text{C} = 1\text{K}$$

Q 10. The Wheatstone bridge meter operates on the principle of

balancing one unknown resistor against other known resistance

Q 11. View the Q from the revision

curve downward

Q 12. Non-electric temperature indicator is ?

Bimetallic thermometer

Q 13. Express -40°C in $^{\circ}\text{F}$

$$^{\circ}\text{C} \rightarrow ^{\circ}\text{F} \Rightarrow (1.8 \times ^{\circ}\text{C}) + 32$$

$$= (1.8 \times -40) + 32$$

$$(-72.0) + 32$$

$$-72 + 32$$

$$= -40^{\circ}\text{F}$$

$$\begin{array}{r} 1.8 \\ \times 40 \\ \hline 720 \\ - 720 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 18 \\ \times 3 \\ \hline 54 \\ 618 \\ \hline 144 \end{array}$$

The temperature change in $^{\circ}\text{C}$ is

$$23.8888 - 1.6666 =$$

$$22.2222^{\circ}\text{C}$$

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this is the final answer

$$\begin{array}{r} 23.8888 \\ - 1.6666 \\ \hline 22.2222 \end{array}$$

Q 14. A bimetallic temperature gauge works because of

dissimilar coefficient of expansion of two metals bonded together

Q 15. Nitrogen boils at -196°C what is the corresponding temperature in the $^{\circ}\text{F}$ scale?

$$^{\circ}\text{C} \rightarrow ^{\circ}\text{F} \Rightarrow (1.8 \times ^{\circ}\text{C}) + 32$$

$$= (1.8 \times -196) + 32$$

$$-352.8 + 32$$

$$= -320.8$$

$$\begin{array}{r} 1.8 \\ \times -196 \\ \hline 1108 \\ 1620 \\ 01800 \\ \hline -352.8 \end{array}$$

$$\begin{array}{r} -352.8 \\ + 32.0 \\ \hline -320.8 \end{array}$$

$$\approx -321^{\circ}\text{F}$$

الدرجة فهرنهايت

$$= -72.0 - \frac{-72}{32} = -40$$

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Q16. A thermocouples is a circuit or a connection of two unlike metals

Q17. A temperature change of 20°C corresponds to a $^{\circ}\text{F}$ temperature change of

$$^{\circ}\text{C} \rightarrow ^{\circ}\text{F} \Rightarrow (1.8 \times ^{\circ}\text{C}) + 32$$

$$= (1.8 \times 20) + 32$$

$$36 + 32 =$$

$$68^{\circ}\text{F}$$

$$\begin{array}{r} 1.8 \\ \times 20 \\ \hline 18 \\ \times 20 \\ \hline 00 \\ 360 \\ \hline 36.0 \end{array} \quad \begin{array}{r} 36 \\ + 32 \\ \hline 68 \end{array}$$

Q18. the temperature sensing element of a bimetallic thermometer is made of:

two dissimilar metals strips bonded together

Q19. What is thermodynamic?

is the branch of physics science that deals with the relation between heat and other form of energy

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Q20. Express a body temperature 98.6°F in $^{\circ}\text{C}$

$$^{\circ}\text{F} \rightarrow ^{\circ}\text{C} \Rightarrow \frac{^{\circ}\text{F} - 32}{1.8}$$

$$\frac{98.6 - 32}{1.8} \Rightarrow \frac{98.6 - 32.0}{1.8}$$

$$\frac{66.6}{1.8} \Rightarrow$$

$$= 37^{\circ}\text{C}$$

$$\begin{array}{r} 1.8 \overline{) 66.6} \\ 36 \\ \hline 30.6 \\ 18 \overline{) 30.6} \\ 18 \\ \hline 12.6 \\ 12.6 \\ \hline 0.0 \end{array} \quad \begin{array}{r} 2 \overline{) 12} \\ 6 \\ \hline 0 \end{array}$$

Q21. view the Q from the revision

always expand with the plate

Q22. in thermocouples temperature indicators :-

The hotter the high temperature junction (hot junction) become, the greater the electromotive force produced, and the higher the temperature indication on the meter