Note: 2 marks for each questions only question one carries 6 marks.

Q1) Calculate the specific heat capacity of solid (Fe) by an electrical heating method if you have the following data, if you know ($\Theta i=28$, V=5V , I=2A) and mass of solid is 1000 gm:

Time/minute	Temperature/^{0}C
1	30
2	32
3	33
4	34
5	36
6	37
7	38
8	39
9	40
10	40

Q2) Define the following?

1- **Thermal conductivity.**
2- **Specific heat capacity.**

Q3) Write the statement of Newton's law, and show graphically (step by step) the relation between temperature (Θ) and time?

$\longrightarrow$

Q4) Why in Lee's disk method for calculating thermal conductivity of bad conductor, the disk is
1- Black?
2- thin?

Q5) Write the equation to calculate the coefficient of cubical expansion of water and linear expansion of solid?

Q6) Why γ for H_2 is greater than γ for CO_2 ($\gamma = C_p/C_v$)?

Q7) Write the performance equation, and show the value of refrigerator performance?

Q8) 1- Show the negative point in the measuring of coefficient cubical expansion of water?

2-what is seeback effect?

Good Luck