SUBJECT: PHYSICAL SCIENCE   **Academic Year-(2020-2021)**
CLASS: **X**   **CHAPTER-1: HEAT**
NAME OF THE STUDENT:_____   ROLL NO:_____ MAX.MARKS:20

I. Answer the following questions   2x4=8

1. Explain the procedure of finding specific heat of solid experimentally.
(OR)
   How do you prove average kinetic energy of molecules is directly proportional to the absolute temperature?

2. Observe the table and answer the following questions (AS4)

Substance	Specific heat	
	In cal/g-°C	In J/kg-K
Lead	0.031	130
Mercury	0.033	139
Brass	0.092	380
Zinc	0.093	391
Copper	0.095	399
Iron	0.115	483
Glass(flint)	0.12	504
Aluminum	0.21	882
Kerosene oil	0.50	2100
Ice	0.50	2100
Water	1	4180
Sea water	0.95	3900

   a) Which liquid used as coolant? Why?
   b) Which metal is best for cooking utensils? Why?
   c) How much heat energy is required to rise 1^0 C of water of 1 gram?
   d) Write the formula of specific heat of the substance?
(OR)
Derive $Q = ms\Delta T$

II. Answer the following questions   3x2=6

3. Convert the following temperatures into Kelvin scale (AS1)
   A) 27^0 C   B) 135^0 C
4. Write the difference between heat and temperature
5. How do you appreciate the role of the higher specific heat of water in stabilizing atmospheric temperature during winter and summer seasons?

III. Answer the following questions   3x1=3

6. State the principle of method of mixtures.
7. A samosa appears to be cool outside but it is hot when we eat why?
8. Define specific heat

IV. Answer the following questions   6x1/2=3

9. 1 cal = _____ joule
10. Which device you select to measure the specific heat of a solid in the laboratory?
11. If the temperature of a steel rod is 330K, then its temperature in ^{0}C is_____
    A) 55^0C   B) 57^0C   C) 59^0C   D) 53^0C
12. If initial temperatures of the two samples of masses m1 and m2 be T1 and T2, then what is the final temperature of the mixture (T) is ____
13. What is the S.I unit of specific heat?
14. Convert 1 cal/g- ^{0}C into J/kg-J

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