

विध्न विचारत भीरु जन, नहीं आरम्भे काम,  
विपति देख छोड़े तुरंत मध्यम मन कर श्याम।  
पुरुष सिंह संकल्प कर, सहते विपति अनेक,  
‘बना’ न छोड़े ध्येय को, रघुबर राखे टेक।।

रचित: मानव धर्म प्रणेता

सद्गुरु श्री रणछोड़दासजी महाराज

## SURFACE TENSION

Some questions (Assertion–Reason type) are given below. Each question contains STATEMENT – 1 (Assertion) and STATEMENT – 2 (Reason). Each question has 4 choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct. So select the correct choice :

**Choices are :**

- (A) Statement – 1 is True, Statement – 2 is True; Statement – 2 is a correct explanation for Statement – 1.
- (B) Statement – 1 is True, Statement – 2 is True; Statement – 2 is **NOT** a correct explanation for Statement – 1.
- (C) Statement – 1 is True, Statement – 2 is False.
- (D) Statement – 1 is False, Statement – 2 is True.

**245. STATEMENT – 1**

At critical temperature, surface tension of liquid becomes zero.

**STATEMENT – 2**

At this temperature, intermolecular forces for liquids and gases become equal. Liquid can expand without any restriction.

**246. STATEMENT – 1**

A thin stainless steel needle can lay floating on a still water surface.

**STATEMENT – 2**

Any object floats when buoyancy force balances the weight of the object.

**247. STATEMENT – 1**

A needle placed over the surface of the water may float, whereas a ball of same material will sink.

**STATEMENT – 2**

The buoyancy of an object depends on the material and shape of the object.

**248. STATEMENT – 1**

When a large soap bubble and a small soap bubble are connected by a capillary tube, the large bubble expands and while the small bubble shrinks.

**STATEMENT – 2**

The excess pressure inside a bubble is inversely proportional to radius.

### Hint & Solution

245. (A)                      246. (B)                      247. (C)                      248. (A)  
245. Zero surface tension means no opposition to expansion.

246. A thin stainless steel needle floats on still water due to surface tension. The upward force on the needle due to surface tension balances the weight of the needle.