

## **Experiment No. 8 – Summation of Stimuli and Effects**

**1. What is the effect of two subminimal stimuli when the second follows the first to quick succession?**

**Ans:** When the second subminimal stimulus follows the first subminimal stimuli in quick response than the two together would produce a response. This is called summation of effects.

**2. Why is the peak of second curve higher than the first?**

**Ans:** The peak of second curve is higher than the first due to beneficial effect on the irritability of tissue by perhaps:

- Rise in temperature
- Collection of metabolites and liberation of  $\text{Ca}^{+2}$ .

These factors reduce the viscosity of muscles.

**3. Define refractory period.**

**Ans:** The period during the action potential where the nerve cannot respond to a second stimulus is referred to as refractory period.

**4. What is the duration of refractory period in skeletal muscles?**

**Ans:** The duration of refractory period in skeletal muscles is 1-3 ms.

**5. What do you expect to find if the second stimulus falls in the refractory period?**

**Ans:** If the second stimulus falls in the refractory period than no response would be produced.

### **6. What is Adequate Stimulus?**

**Ans:** Minimum stimulus required to change the potential across the membrane from resting state to threshold potential is referred to as adequate stimulus.

### **7. What is All or None Law. How it is proved?**

**Ans:** All or None Law states that under the same condition of a muscle fibers contract at all it does so to its maximum irrespective of strength of stimulus.