**NRU HSE-2020, Microeconomics Class-08**

# Perfect competition

Consider a firm with the following cost function .

**(a)** Find the long-run supply and the short-run supply of the firm, under the assumptions that the total cost function is the same in the long and in the short run, but the fixed cost is sunk in the short run and is not sunk in the LR.

**(b)** Suppose that every firm in the economy has access to the technology described above. The inverse demand function for the product of a perfectly competitive industry is given by *,* where *Q* is the total quantity. Find the long-run equilibrium.

**(c)** Suppose that a subsidy of $4 per unit is provided. Calculate the deadweight loss from the subsidy assuming that the number of firms in this industry stays at the level found in (b) i.e. look at the SR.

**(d)** Repeat part (c) for the LR. Explain the difference between the SR and the LR DWL.

**(e)** Now, suppose instead of the per-unit subsidy every active firm (firm that produces positive output) gets a lump sum subsidy . Using side-by-side graph identify the value of deadweight loss in the SR and in the LR. Explain the difference b/w SR and LR DWL.