In this paper, we analyze a cosmological situation proposing a variation law in which the deceleration parameter is assumed to be a simple linear function of Hubble’s parameter, which yields scale factor $a = e^{\frac{1}{\beta} \sqrt{2\pi t + k}}$ (where $\beta, k$ are constants). We have gotten the cosmological models in which the Universe begins from a non-solitary state and grows exponentially with infinite time $t$ till late occasions. The deceleration parameter in the model is found to be time dependent. It is seen that this parameter shows a transition from initial decelerating phase to the present accelerating phase of expansion and supplies the largest value and the fastest rate at which the universe is expanding. Same is also observed by the researchers. The cosmological term $\Lambda$ approaches to zero as $t$ tends to infinite also shown by recent observations. (Received September 17, 2019)