Prediction of upcoming solar cycle characteristics like solar maximum, ascent time and duration of cycle is becoming important day by day as we are relying more on satellites. Numbers of models are available at present for the forecast of solar activity; however the reliability of these models needs to be check before practicing them for the predictions. In the present study, empirical model is developed using precursors in the preceding solar cycle, which can be used to forecast the peak and the ascent time of succeeding solar cycle. Statistical parameters are derived for each solar cycle using "Monthly" and "Monthly smoothed" (SSN) data of international sunspot number (Ri). Primarily the variability in monthly sunspot number during different phases of the solar cycle is considered along with other statistical parameters that are computed using solar cycle characteristics. Using these statistical parameters, two mathematical formulae are developed to compute quantities \( Q_C^n \) and \( L_n \) for each \( n^{th} \) solar cycle. It is found that the peak sunspot number and ascent time of the \( n+1^{th} \) solar cycle correlates well with the parameters \( Q_C^n \) and \( L_n / S_{\text{Max}}^{n+1} \) and gives a correlation coefficient of 0.97 and 0.92 respectively. Empirical relations are obtained using least square fitting that relates \( S_{\text{Max}}^{n+1} \) with \( Q_C^n \) and \( T_a^{n+1} \) with \( L_n / S_{\text{Max}}^{n+1} \). These relations predict a peak of 74±10 in monthly smoothed sunspot number and an ascent time of 4.9±0.4 yrs for solar cycle 24, when November 2008 is considered as start time for solar cycle 24.