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A TREND MODEL OF COVID-19 SCENARIO IN WEST BENGAL

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Abstract. COVID-19 has become a nightmare to human civilization for the last two years around the world. It really has become a serious public health threat through rapid spreading. The entire world is trying to find some pattern to predict the nature and cause of fatal SARS COV-2. Frequent mutations make it more difficult to predict its behaviour. India, being a developing country is facing severe problems in this issue. In this investigation, we aim to construct a mathematical model to find some pattern in disease spread in different districts of West Bengal, India. This model will primarily be an algebraic equation constructed with least square fitting. A little bit of trial-and-error will determine the most appropriate model both in terms of goodness of fit and prediction accuracy. The goodness of fit has been checked with the corresponding R^2 values. We have used cumulative dataset between 26^{th} April,2020 to 31^{st} October,2021 obtained from github.com to find out a mathematical description of ups and downs of the representing curve. We have drawn trend curves (mostly straight lines) and shown how they may be helpful to forecast the future progress of infection, so that necessary precautions can be taken in advance.

Keywords: COVID-19, Least square method, Trend model, Goodness of fit

1. Introduction. People across the world are facing a hard time due to unexpected outspread of COVID-19. On 11th March, 2020, the World Health Organization (WHO) declared the situation as pandemic due to its devastating and widespread nature. Almost every country in the world have more or less been affected by this calamitous virus. According to worldometer, as on 31st October, 2021, more than 263 million people are infected with the death toll of more than 5.2 million. It is really miserable to experience that millions of people are compelled to die without any treatment, short supply of oxygen, lack of beds in hospitals, insufficiency of doctors, scarcity of medicines etc. Gradually all the affected countries were compelled to go for a complete lockdown. The second wave again pushed the whole world into a complete disaster including India.