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| **Time Series Analysis** | | |
| Total Marks: 30 | | |
| **Section A** | | |
| 1. | What are the components of a time series? | 2 marks |
| 2. | What is the purpose of using exponential smoothing methods? | 2 marks |
| 3. | What are the two types of moving averages that can be used? | 2 marks |
| 4. | Explain seasonality in a time series. In what ways can it be identified? | 2 marks |
| **Section B** | | |
| 5. | What is a random walk model? How is it related to autocorrelation? | 3 marks |
| 6. | Calculate a 5 year moving average for the following data | 3 marks |
| 7. | What is stationarity? What are the necessary conditions to determine if a series is stationary? | 3 marks |
| 8. | How does the acf and pacf help in fitting an ARIMA model? | 3 marks |
| 9. | What are thevarious measures that can be used for evaluating a time series model? | 3 marks |
| **Section C** | | |
| 10. | Consider the AirPassengers.csv data set, Analyse the data set to perform the expected below tasks.   1. Load Time Series data in Pandas 2. Check the stationarity of Time Series and make the data stationary 3. Implement a ARIMA Time Series Forecasting model. | 7 marks |