Internal Assessment

Time Series Analysis

Full Marks: 20 Time: 1 hour

Pick out your chit from the box. Note your alphabet. Look below for the data you have to search in R repository.

Code Name	Data name	Code name	Data Name
A	fdeaths	E	UKDriverDeaths
B	JohnsonJohnson	F	nhtemp
C	nottem	G	Nile
D	UKgas	H	LakeHuron
I	AirPassengers	J	USAccDeaths

1. What is the name of your data?
2. What is the variable of interest in your data? What is the frequency of this data?
3. Plot your data.
4. Do you think data shows trend stationarity?
5. Is there seasonality in your data? If so, choose a suitable Moving average process for depersonalization and plot the moving average line **with** the original series.

   If not, then also choose a suitable moving average for detrending. Plot the moving average line **with** the original series.
6. Plot the autocorrelation function of the original series.
7. How many autocorrelations are significant?
8. From the autocorrelation plot do you think the given data is random?
9. Plot the periodogram on your data.
10. Can you say something about the period of the underlying cyclic component in the series?