**Indian Institute of Technology Patna**

**Department of Computer Science and Engg**

**CS575: Applied Time Series Analysis**

**Total marks: 75**

**Instructions**

**Attempt all the questions. Marks are given in [ ].**

**Submit by date: 1st March 2021/ 1145PM. Answers must be unique, shared answers if found (All candidates will be given zero marks)**

**Submissions must be uploaded to the following link in a single zip file ( word/pdf file (answers A1, A2, and S3) and** Rollno\_A3.circ **file) (use roll number as the filename);**

<https://u.pcloud.com/#page=puplink&code=vKi7Z1aP9TxNUoSypWci01QTiIYfr4fGk>

**Make appropriate assumption if required. Do not send any response to the personal emails of the instructor. If you do so, your paper will not be evaluated.**

**Assignments:**

**A1:**  For each of the following, state if it is a stationary process. If so, give the mean and autocovariance

Functions. Where {et} is i.i.d. N(0,1). Generate n = 100 observations of the time series. Plot the time series ACF and PACF for each of the cases

Here, {et} is i.i.d. N(0,1).

1. Yt = et −et−3
2. Yt = Yt-­1­+0.9 Yt-­2­ + et
3. Yt = 0.7Yt-­1­+0.2 Yt-­2­ -0.1 Yt-­3­-0.3 Yt-­4­+ et
4. Yt = t + et
5. Yt = et
6. Xt = etet−2

**[25 Points]**

**A2:**  .Browse dataset folder for Q2

**[25 Points]**

**A3:**  .Browse Metrics Code folder for Q3  **[25 Points]**