**AKGEC/IAP/FM/02**

**Ajay Kumar Garg Engineering College, Ghaziabad**

**Department of ECE**

**Sessional Test-2**

Course: B.Tech Semester: VII

Session: 2017-18 Section: EI-K

Subject: Control System -II Sub. Code: NIC-701

Max Marks: 50 Time: 2 hour

***Note*** : Answer **all** the sections.

**Section-A**

1. Attempt **all** the parts. **(5x2 =10)**
2. State Cayley Hamilton Theorem.
3. Explain pulse transfer function.
4. What are the methods of realization of pulse transfer function?
5. What do you mean by complete state controllability and complete output controllability?
6. Explain Angle and magnitude condition in root locus.

**Section-B**

1. Attempt **all** the parts. **(5x5 = 25)**
2. Check the stability for given discrete data system using Liapunov method.

X1(k+1)= -0.5X1(k)

X2(k+1)= -0.5X2(k)

1. Find inverse Z transform and check stability of system for Matrix A of state equation.



1. State and prove controllability test.
2. Evaluate f(F)=F^K for
3. Explain PID controller.

**Section-C**

1. Attempt **all** the parts. **(2x7.5 = 15)**
2. Explain construction rules of root locus.
3. State and prove Liapunov stability Theorem for linear digital system.

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