

Roll No

EI/IC-802 (GS)**B.E. VIII Semester**

Examination, May 2018

Grading System (GS)**Digital Control Systems****Time : Three Hours****Maximum Marks : 70**

- Note:** i) Attempt any five questions.
 ii) All questions carry equal marks.
 iii) Assume any missing data.

1. a) Draw and explain the block diagram of Digital Control System.
 b) Describe the sampling theorem with its application.
2. a) List the advantages and applications of Digital Control Systems.
 b) Explain the principle of digital to analog conversion with suitable diagram.
3. a) Derive the relation between S-plane and Z-plane.
 b) What do you mean by Z-transform? What are the limitations?
4. Find the Z-transform of:
 - a) $f(t) = t^2$
 - b) $f(t) = e^{-at} \sin \omega t$

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5. What is Root Locus analysis? Discuss summary of steps for constructing Root Loci.
6. Explain steady state error analysis for stable and unstable systems. Define Routh's and Jury's test.
7. What is Jordan transformation? Discuss the advantages over other transformation methods.
8. Write short notes on any two:
 - i) Anti Aliasing filter
 - ii) Canonical variables
 - iii) Sampled data control system
