Total No. of Questions : 6]

SEAT No. :

P5809

[Total No. of Pages : 2

B.E/Insem/Oct.-560
B.E. (Electrical)
Control System - II
(2015 Pattern) (Semester - I)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Answer any one question from each pair of questions : Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.***

Q1) a) Draw and explain configuration of Basic Digital Control System. **[6]**

b) What is holding device? Explain the operation of zero order hold circuit. **[4]**

OR

Q2) a) What are the advantages and limitations of Digital Control System? **[6]**

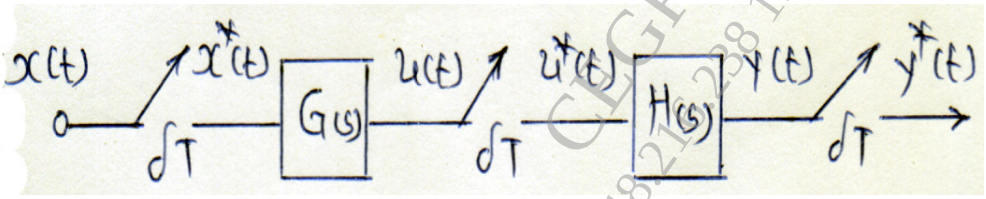
b) Discuss various practical aspects of choice of sampling rate. **[4]**

Q3) a) Calculate y(k) if y(0)=1 and y(1)=0 and y(k) satisfies the difference equation Y(k+2)+3y(k+1)+2y(k)=u(k). Where u(k) is unit step sequence. **[6]**

b) State and prove Linearity and Time shifting property of Z-transform. **[4]**

OR

Q4) a) Find pulse transfer function of cascaded elements shown **[6]**



b) Derive an expression for Pulse Transfer Function of ZOH using transfer function of ZOH. **[4]**

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Q5) a) Explain 'Direct digital programming' of realization of digital controller. **[6]**

b) Illustrate stability analysis of closed loop system in Z-plane using Jury's test. **[4]**

OR

Q6) a) Determine the stability using Bilinear transformation of the system whose characteristic equation is **[6]**

$5Z^2 - 2Z + 2 = 0$

b) Discuss mapping between S-Plane and Z-Plane. **[4]**