

NAME.....

ROLLNO.....

2008 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

**III B.TECH SUPPLEMENTARY EXAMINATIONS
BIOLOGICAL CONTROL SYSTEMS
(BIO-MEDICAL ENGINEERING)**

AUG/SEP 2008

TIME-3 HOUR
MARK-80

ANSWER ANY FIVE QUESTIONS.ALL QUESTIONS CARRY EQUAL MARKS

1. Given the following system. Find the transfer function (C/R).
2. Consider the unit step response of a unity-feedback control system, whose open loop transfer function is
 $G(S) = \frac{1}{S(S+1)}$
Obtain the rise time, peak time, maximum overshoot and settling time.
3. Draw the root locus for
 $G(S) H(S) = \frac{K}{S(S+1)(S+3)}$
4. Discuss the concept of Bio feedback in detail.
5. Obtain ϕ and ϕ_n for Semi-Circular Canal.
6. Explain how Baroreceptors and Chemoreceptors are helpful in Cardiovascular system?
7. Give a short notes on :
 - (a) Blood cortisol control
 - (b) Blood Thyroxin control
8. Explain Receptor characteristics?