COLLEGE OF ENGINEERING & TECHNOLOGY

Department : Electrical & Computer Control Engineering
Lecturer : Prof. Ahmed F. Amer
Course : Electrical Engineering II
Course Code : EE 326 **Marks**: 40
Date : 23 / 5 / 2015 **Time** : 2:0-4:0

Answer Four Questions Only:

Question One:

(a) Find the overall transfer function C(s)/R(s) for the given closed-loop system shown in Fig.1 below.

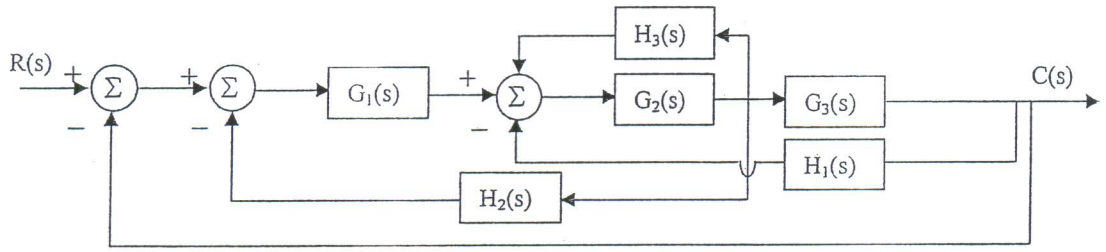

Fig.1

Question Two:

(a) An R-C circuit has a resistance of 600 kΩ and a capacitor of 100 μF is shown in the circuit given below, determine:

i) The circuit transfer function $V_o(s)/V_i(s)$.

ii) Circuit time constant.

iii) Draw the output voltage for a step input voltage of 100V.

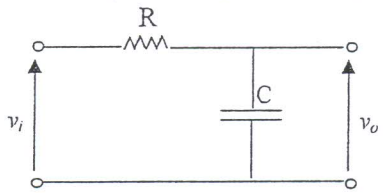

Fig.2 R-C electric circuit

(b) The transfer functions of the main components of the viscosity of a fuel oil control loop are shown in the figure below.

i) Derive the closed loop transfer function of the system.

ii) Determine the time domain parameters of the control loop.

Members of course Examination Committee:	Signature:	Date:
Lecturer: Prof. Ahmed Fouad M. Amer		18/5/2015
Course Coordinator : Dr. Ahmed Khadry		18/5/2015
Head of Department: Prof. Hamdy Ashour		18/5/2015