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DEPARTMENT OF ELECTRICAL ENGINEERING

REV:00	**QUESTION PAPER CLASS TEST 01**	EXM-04 B
CLASS:- TE ELECTRICAL.		SEM:- VI
COURSE:- CONTROL SYSTEM II		DATE:- 16 / 02 / 2019
DURATION:- **60 min.**		MARKS:- **20**

Q1. Attempt ~~any~~ one [8 marks].

a) For the system shown below design an ideal ~~com~~ Integral compensator. [Assume damping ratio $\zeta_p = 0.174$]. [Assume step I/P]. [CO1]

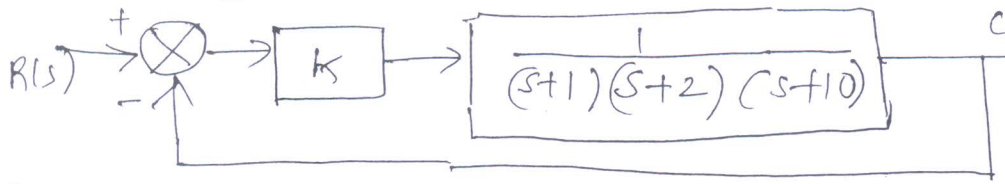
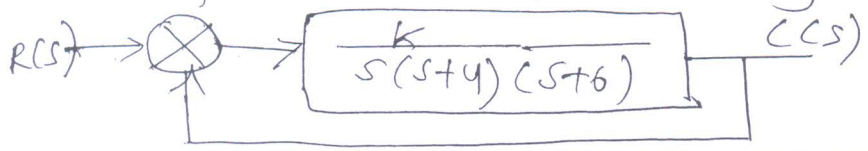


fig.a

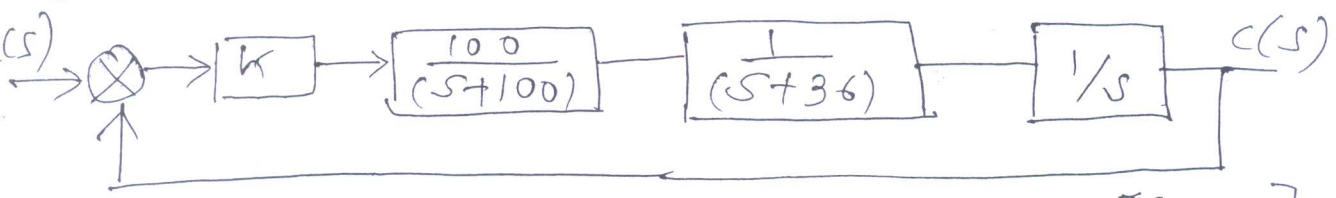
b) For the system shown in fig.a design [CO1] Lag compensator to improve steady state error by a factor of 10. (Assume $\zeta_p = 0.174$).

Q2. Attempt any one [12 marks].

a) For the system shown below design an Ideal Derivative compensator to yield 16% overshoot with three fold reduction in settling time. [CO1]



(b) For the system shown below find the value of gain 'K' to yield 9.5% overshoot. (Assume step I/P).



[CO2]

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REV:00	**QUESTION PAPER CLASS TEST 01**	EXM-04 B
CLASS:**TE Electrical**		SEM:-**VI**
COURSE:-**Electrical Machine-IV**		DATE:- **14 / 02/ 2019**
DURATION:- **60 min.**		MARKS:- **20**

Q.01 Attempt any two: (08 Marks)		Marks	CO
a)	Describe the construction of three phase synchronous machine in brief with neat diagram.	04	CO1
b)	Define armature reaction and explain for unity power factor in brief.	04	CO1
c)	Explain the reason of parallel operation of alternator.	04	CO1
Q.02 Attempt any two: (12 Marks)			
a)	Derive an emf equation of an alternator and hence explain coil span factor and distribution factor.	06	CO1
b)	What is parallel operation of an alternator and gives the necessary conditions.	06	CO1
c)	A 3 phase ,16 pole alternator has resultant air gap flux of 0.06 wb per pole. The flux is distributed sinusoidally over the pole. The stator has 2 slots per pole per phase and 4 conductors per slot are accommodated in two layers. The coil span is 150 electrical degree. Calculate the phase and line induced voltages when machine runs at 375 rpm.	06	CO1

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REV:00	**QUESTION PAPER CLASS TEST 01**	EXM-04 B
CLASS:-**TE Electrical**		SEM:-**VI**
COURSE:-**Electrical Machine-IV**		DATE:- **14 / 02 / 2019**
DURATION:- **60 min.**		MARKS:- **20**

Q.01 Attempt any two: (08 Marks)		Marks	CO
a)	Describe the construction of three phase synchronous machine in brief with neat diagram.	04	CO1
b)	Define armature reaction and explain for unity power factor in brief.	04	CO1
c)	Explain the reason of parallel operation of alternator.	04	CO1
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a)	Derive an emf equation of an alternator and hence explain coil span factor and distribution factor.	06	CO1
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c)	A 3 phase ,16 pole alternator has resultant air gap flux of 0.06 wb per pole. The flux is distributed sinusoidally over the pole. The stator has 2 slots per pole per phase and 4 conductors per slot are accommodated in two layers. The coil span is 150 electrical degree. Calculate the phase and line induced voltages when machine runs at 375 rpm.	06	CO1

CRITERION : 2.2.2, 3.2.2.

FILE NO: P36,31

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REV:00	QUESTION PAPER CLASS TEST 01	EXM-04 B
CLASS:-TE		SEM: VI
COURSE:- PSE		DATE:- 14//02 / 2019
DURATION:- 60 min.		MARKS:- 20

	Q.01 Attempt any Two : (08 Marks)	Marks	CO
a)	Explain the working principle of current transformer and potential transformer.	4	CO1
b)	Draw typical protection circuit and explain the phenomenon of fault clearing .	4	CO2
c)	Write a note on isolator.	4	CO1
	Q.02 Attempt any One: (12 Marks)		
a)	Draw single line diagram and show all substation devices and their functions.	12	CO1
B)	Explain different types of circuit breakers in brief.	12	CO2
C)	Write a note on HRC Fuse.	12	CO2

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REV:00	QUESTION PAPER CLASS TEST 01	EXM-04 B
CLASS:-TE		SEM: VI
COURSE:- PSE		DATE:- 14//02 / 2019
DURATION:- 60 min.		MARKS:- 20

	Q.01 Attempt any Two : (08 Marks)	Marks	CO
a)	Explain the working principle of current transformer and potential transformer.	4	CO1
b)	Draw typical protection circuit and explain the phenomenon of fault clearing .	4	CO2
c)	Write a note on isolator.	4	CO1
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CRITERION : 2.2.2, 3.2.2.

FILE NO : P25, P31

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REV:00	QUESTION PAPER CLASS TEST 01	EXM-04 B
CLASS:- THIRD YEAR		SEM:- VI
SUBJECT:- MA		DATE:-15/2/19
DURATION:- 1 HOUR		MARKS:- 20

	Q.01 Attempt any__TWO____: (08 Marks)	Marks	CO
a)	Explain data memory structure.	04	CO2
b)	Explain difference between microprocessor and microcontroller.	04	CO1
c)	Explain status register model.	04	CO2
	Q.02 Attempt any____TWO___: (12 Marks)		
a)	Explain various addressing modes.	06	CO2
b)	Explain Table read and write instruction.	06	CO2
c)	Explain Pipelining.	06	CO2

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REV:00	QUESTION PAPER CLASS TEST 01	EXM-04 B
CLASS:- THIRD YEAR		SEM:- VI
SUBJECT:- MA		DATE:-
DURATION:- 1 HOUR		MARKS:- 20

	Q.01 Attempt any__TWO____: (08 Marks)	Marks	CO
a)	Explain data memory structure.	04	CO2
b)	Explain difference between microprocessor and microcontroller.	04	CO1
c)	Explain status register model.	04	CO2
	Q.02 Attempt any____TWO___: (12 Marks)		
a)	Explain various addressing modes.	06	CO2
b)	Explain Table read and write instruction.	06	CO2
c)	Explain Pipelining.	06	CO2

CRITERION : 2.2.2, 3.2.2.

FILE NO : P25, P31

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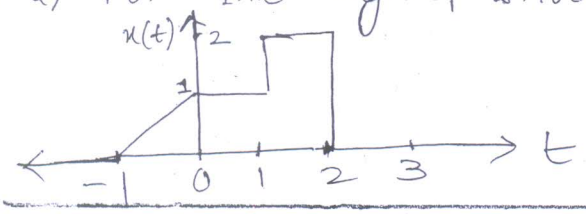
REV:00	**QUESTION PAPER CLASS TEST 01**	EXM-04 B
CLASS:- TE ELECTRICAL		SEM:- VI
COURSE:- SIGNAL PROCESSING.		DATE:- 15/ 02/ 2019
DURATION:- **60 min.**		MARKS:- **20**

Q1. Attempt any two [8 marks]

a) For the signal shown below, sketch the following. [CO1]



(1) $x(t+2)$ (2) $x(t-1)$.
(3) $x(2t)$ (4) $x(t/3)$
(5) $x(2t-1)$ (6) $x(t/2+1)$

b) sketch the signal with respect to time. [CO1]

(1) $x(t) = u(t) + r(t-1) + 2r(t-2) - r(t-3) + u(t-4) - 2u(t-5)$

(2) $x(t) = 2u(t) + tu(t) - (t-1)u(t-1) - 3u(t-2)$.

c) Find sequence For [CO1]

(1) $x(n) = 3\delta(n+2) + \delta(n+1) + 2\delta(n) + \delta(n-1)$.

(2) sketch discrete signal For given sequence

$x(n) = \{-7, 6, -3, \underset{\uparrow}{1}, 2, -5\}$.

Q2. Attempt any two [6 marks].

(1) state condition For periodicity of continous time & discrete time signals and check whether the following signals are periodic or not. [CO1]

→ $3\sin\left(\frac{5\pi}{2}t\right) + 2\cos(3t)$

→ $\cos\left(\frac{n}{8} - \pi\right)$

(2) Check whether the given system For (Linearity, causality Time Variance, static/Dynamic). [CO1]

→ $y(n) = x(n^2)$ → $y(n) = nx(n)$.

(3) Determine whether the given signal is Energy or power

→ $x(t) = e^{-at}u(t)$

→ $x(n) = u(n)$.

CRITERION : 2.2.2, 3.2.2.

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REV:00	**QUESTION PAPER CLASS TEST 01**	EXM-04 B

CLASS:- **TE**	SEM:- **VI**
COURSE:- **MICROGRID**	DATE:- **16/02/19**
DURATION:- **60 min.**	MARKS:- **20**

	Q.01 Attempt any TWO: (08 Marks)	**Marks**	**CO**
a)	Define microgrid with neat schematic. Explain its merits.	4	CO1
b)	What are some of the power quality issues in microgrid.	4	CO2
c)	What is the significance of storage systems in microgrid?Give the types of electric and non-electrical storages in microgrid.	4	CO2
	Q.02 Attempt any TWO: (12 Marks)		
a)	Explain Hybrid (AC/DC) Microgrid (both structures).	6	CO1
b)	Explain the various types of market model for microgrid.	6	CO1
c)	Explain with diagram the various protection issues in smartgrid.	6	CO2

CRITERION : 2.2.2, 3.2.2.

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REV:00	**QUESTION PAPER CLASS TEST 01**	EXM-04 B

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DURATION:- **60 min.**	MARKS:- **20**

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CRITERION : 2.2.2, 3.2.2.

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