Program: SE Electronics and Telecommunication

Engineering Curriculum Scheme: Revised 2016

(Choice Based) Examination: Second Year Semester

IV

Course Code: **ECC403** and Course Name: **Linear integrated circuits (LIC)**

Time: **1 hour** Max. Marks: **50**

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Note to the students:- All Questions are compulsory and carry equal marks .

Q1.	In a monostable multivibrator using 555 timer if R= 100K OHMS and T_{ON}=100ms the value of capacitor C is
Option A:	C= 0.9 microfarads
Option B:	C= 1.1 microfarads
Option C:	C= 1.9 microfarads
Option D:	C= 2.9 microfarads
Q2.	In Astable multivibrator duty cycle is given by
Option A:	R_A+R_B / R_A+2R_B
Option B:	R_A / R_A+2R_B
Option C:	R_A+R_B / 2 R_A+R_B
Option D:	R_A+2R_B / R_A+R_B
Q3.	In 555 timer external AC voltage is applied to which pin to obtain pulse width modulation
Option A:	Discharge pin
Option B:	Reset pin
Option C:	Control Pin
Option D:	Threshold Pin
Q4.	In phased locked loop, PLL
Option A:	Lock in range F_L > capture range F_C
Option B:	Lock in range F_L < capture range F_C
Option C:	Lock in range F_L = capture range F_C
Option D:	Lock in range F_L > 2 * capture range F_C
Q5.	In wide band pass filter quality factor Q is
Option A:	Q<10

Option B:	Q>10
Option C:	Q=10
Option D:	Q< 1
Q6.	In voltage controlled oscillator VCO , find free running frequency F_0 . Given R=10K OHMS and C=0.001 microfarads
Option A:	F_0 = 25 KHZ
Option B:	F_0 = 35 KHZ
Option C:	F_0 = 37KHZ
Option D:	F_0 = 37.5 KHZ
Q7.	A filter used for rejecton of single frequency HUM of frequency 50 HZ is
Option A:	All pass filter
Option B:	Notch filter
Option C:	Low pass filter
Option D:	High pass filter
Q8.	In band pass filter F_H=100 KHZ and F_L=1KHZ then the center frequency F_C is
Option A:	F_C=10 KHZ
Option B:	F_C=99 KHZ
Option C:	F_C=101 KHZ
Option D:	F_C=150 KHZ
Q9.	In OPamp maximum rate of change of output voltage per unit time is known as
Option A:	Slew rate

Option B:	Input bias voltage
Option C:	CMRR
Option D:	offset voltage

Q10.	Which of the following is the important characteristics of an ideal OPamp
Option A:	$A_V = \infty$, $R_L = \infty$, $R_0 = 0$
Option B:	$A_V = \infty$, $R_L = 0$, $R_0 = \infty$
Option C:	$A_V = 1$, $R_L = \infty$, $R_0 = 0$
Option D:	$A_V = \infty$, $R_L = \infty$, $R_0 = 1$
Q11.	The ratio of open loop gain A_V to common mode gain A_{CM} is called
Option A:	Slew Rate
Option B:	Inut Biased voltage
Option C:	Differential voltage gain
Option D:	CMRR
Q12.	In an inverting summing amplifier with 2 inputs find the output if V_1=1.5 V , V_2=3.5 V and resistors $R_1=R_2=R_f$ = 5.2 Kohms
Option A:	V_0= -5 V
Option B:	V_0= 5 V
Option C:	V_0= -3 V
Option D:	V_0= -5.2V
Q13.	If we apply square wave at thr input of an integrator its output is
Option A:	Cosine wave
Option B:	Triangular wave
Option C:	Spikes at the edges of the square wave
Option D:	Positive going ramp
Q14.	Which element is used in the feedback path of an ideal differentiator circuit

Option A:	Capacitor
Option B:	Resistor
Option C:	Inductor

Option D:	series combination of capacitor and inductor
Q15.	For inverting schmitt Trigger if R_1=47 Kohms , R_2=150 ohms and V_{sat}= $\pm$ 12V.Find threshold voltages and hystersis voltage V_H.
Option A:	V_{UT} = 38.17mV V_{LT} = -38.17mV V_H = 76.34 mV
Option B:	V_{UT} = 30.17mV V_{LT} = -30.17mV V_H = 60.34 mV
Option C:	V_{UT} = 28.17mV V_{LT} = -28.17mV V_H = 56.34 mV
Option D:	V_{UT} = 48.17mV V_{LT} = -48.17mV V_H = 96.34 mV
Q16.	An amplifier circuit using diode in the feedback path of an operational amplifier is called
Option A:	Antilog amplifier
Option B:	Log amplifier
Option C:	Instrumentaion amplifier
Option D:	Differential amplifier
Q17.	The time period of output waveform of a square wave generator is given by
Option A:	$T= 2RC \log_e(2R_1 + R_2 / R_2)$
Option B:	$T= RC \log_e(2R_1 + R_2 / R_2)$
Option C:	$T= 2RC \log_e(R_1 + R_2 / R_2)$
Option D:	$T= 2RC \log_e(R_1 + R_2 / 2R_2)$
Q18.	For 5 bit R-2R ladder Digital to Analog converter, find full scale output voltage , if Vref= 10 volts.
Option A:	V_0=1.28 V
Option B:	V_0=0.3125 V

Option C:	V_0=0.2225V
Option D:	V_0=1.68 V

Q19.	Output voltage of Three terminal IC regulator 7806 is
Option A:	7 V
Option B:	8 V
Option C:	6 V
Option D:	-6 V
Q20.	In IC 723 used as high voltage reguator ,the output voltage is
Option A:	V_0 > 5V
Option B:	V_0 > 7V
Option C:	V_0 > 8V
Option D:	V_0 > 25V
Q21.	An IC 723 has V_0 = 5V , I_0=50 mA , I_{sc}= -75 mA , V_{sense}=0.6 V at temperature of 26 degree celsius. Then value of resistor R_{SC} is
Option A:	R_{SC}= 8 ohms
Option B:	R_{SC}= 7.8 ohms
Option C:	R_{SC}= 6 ohms
Option D:	R_{SC}= 6.8 ohms
Q22.	A popular Three terminal voltage regulator IC which provides adjustable positive volatage is
Option A:	79 XX
Option B:	78 XX
Option C:	LM317
Option D:	LM399
Q23.	In 3 terminal fixed voltage regulator difference between the unregulated input volatage V_{in} and output voltage V_0 is called
Option A:	Input bias voltage
Option B:	Differential voltage
Option C:	Drop out voltage
Option D:	Drop in voltage
Q24.	In Active RC phase shift oscillator,frequency of oscillation is 5KHZ.IF capacitor value is 0.01microfarads,then value of resistor R is

Option A:	R=2.33kohms
Option B:	R=1.29kohms

Option C:	R=2.83kohms
Option D:	R=4.33kohms
Q25.	The difference between the currents flowing into the inverting and noninverting terminals of Opamp is called
Option A:	Bias current
Option B:	input offset Current
Option C:	drift current
option D:	thermal drift