Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code and Course Name: ETC505 Integrated Circuits

Time: 1 hour Max. Marks: 50

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

Q1.	The ideal opamp has
Option A:	Infinite voltage gain and zero input impedance
Option B:	Infinite voltage gain and infinite bandwidth
Option C:	Zero voltage gain and infinite CMRR
Option D:	Zero output impedance and zero CMRR
Q2.	The advantages of precision rectifiers are
Option A:	absence of forward voltage drop
Option B:	absence of forward current drop
Option C:	absence of infinite voltage drop
Option D:	present of infinite voltage drop
Q3.	What will be the phase shift of feedback circuit in RC phase shift oscillator?
Option A:	180^o phase shift
Option B:	360^o phase shift
Option C:	90^o phase shift
Option D:	60^o phase shift
Q4.	How many Vcc connections does the 565 PLL use?
Option A:	0
Option B:	2
Option C:	1
Option D:	3
Q5.	Which of this is used as Zero crossing detector
Option A:	inverting or non-inverting comparators
Option B:	inverting and non-inverting comparators
Option C:	inverting or non-inverting amplifier
Option D:	inverting and non-inverting amplifier
Q6.	In the common-mode opamp _____
Option A:	both inputs are grounded
Option B:	the outputs are connected together

Option C:	an identical signal appears on both inputs
Option D:	the output signals are in-phase
Q7.	Quadrature oscillators have signals with
Option A:	Parallel frequency
Option B:	Opposite frequency
Option C:	Same frequency
Option D:	Different frequency
Q8.	Which of the following best describes the output of a 566 voltage-controlled oscillator?
Option A:	Half rectified sine wave
Option B:	Both square- and triangular-wave
Option C:	Abrupt waveform
Option D:	Full rectified Sine-Wave
Q9.	Output of LM317 is adjustable between
Option A:	5 V and 37 V
Option B:	1.2 V and 37 V
Option C:	10 V and 37 V
Option D:	1.5 V and 37 V
Q10.	The 7912 regulator IC provides _____ .
Option A:	12V
Option B:	-12V
Option C:	5V
Option D:	-5V
Q11.	Duty cycle is the ratio of
Option A:	30% of the time a load or circuit is ON compared to the time the load or circuit is OFF.
Option B:	time a load or circuit is OFF compared to the time the load or circuit is ON.
Option C:	time a load or circuit is ON compared to the time the load or circuit is OFF.
Option D:	30 % of the time a load or circuit is OFF compared to the time the load or circuit is ON.
Q12.	In PLL, the capture range is always _____the lock range.
Option A:	greater than
Option B:	equal to
Option C:	less than
Option D:	either greater than or equal to
Q13.	Voltage to current converter is also called as
Option A:	Current series negative feedback amplifier
Option B:	Voltage series negative feedback amplifier
Option C:	Current series positive feedback amplifier

Option D:	Voltage series positive feedback amplifier
Q14.	A negative adjustable voltage regulator produces
Option A:	a regulated negative voltage
Option B:	a regulated positive voltage
Option C:	a regulated negative and positive voltage
Option D:	a regulated positive or negative voltage
Q15.	How much storage capacity does each stage in a shift register represent?
Option A:	One bit
Option B:	Two bits
Option C:	Four bits
Option D:	Eight bits
Q16.	How a triangular wave generator is derived from square wave generator?
Option A:	Connect oscillator at the output
Option B:	Connect integrator at the output
Option C:	Connect differential at the output
Option D:	Connect Voltage follower at the output
Q17.	The maximum modulo number that can be obtained by ripple counter using 5 flipflops is
Option A:	16
Option B:	32
Option C:	5
Option D:	31
Q18.	Switching regulators are series type regulators, which has _____ power dissipation & _____ efficiency.
Option A:	increased, increased
Option B:	increased, reduced
Option C:	reduced, increased
Option D:	reduced, reduced
Q19.	The output voltage of a voltage buffer is _____ with the input voltage.
Option A:	In phase
Option B:	45 degree out of phase
Option C:	90 degree out of phase
Option D:	180 degree out of phase
Q20.	Based on how binary information is entered or shifted out, shift registers are classified into _____ categories.
Option A:	4
Option B:	3
Option C:	2
Option D:	5

Q21.	Why zener diode is used at the output terminal of square wave generator?
Option A:	To reduce both output and capacitor voltage swing
Option B:	To reduce capacitor voltage swing
Option C:	To reduce input voltage swing
Option D:	To reduce output voltage swing
Q22.	For a summing amplifier if V_1 = -0.2 V , V_2 = 0V, R_1 = 33 kΩ, R_2 = 10 kΩ and R_F = 330 kΩ, calculate the output voltage.
Option A:	0 V
Option B:	- 6.6 V
Option C:	- 4 V
Option D:	2 V
Q23.	A circuit used for counting pulses is called as
Option A:	Shift register
Option B:	ALU
Option C:	Counter
Option D:	Regulator
Q24.	Ripple Counters are also known as
Option A:	asynchronous counters
Option B:	SSI counters
Option C:	synchronous counters
Option D:	VLSI counters
Q25.	Calculate the cut-off frequency of a first-order low-pass filter for R_F = 2.5 kΩ and C_1 = 0.05 µF.
Option A:	1.273 kHz
Option B:	12.73 kHz
Option C:	127.3 kHz
Option D:	127.3 Hz