These are sample MCQs to indicate pattern, may or may not appear in examination

University of Mumbai
Online Examination 2020

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: ETC505 and Course Name: Integrated Circuits

Time: 1hour Max. Marks: 50

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

Q1.	An ideal op-amp requires infinite bandwidth because
Option A:	Signals can be amplified without attenuation
Option B:	Output common-mode noise voltage is zero
Option C:	Output voltage occurs simultaneously with input voltage changes
Option D:	Output can drive infinite number of device
Q2.	In the common mode,……
Option A:	Both inputs are grounded
Option B:	The outputs are connected together
Option C:	An identical signal appears on both the inputs
Option D:	The output signal are in-phase
Q3.	In which type of amplifier, the input voltage is amplified by a scaling factor
Option A:	Summing amplifier
Option B:	Averaging amplifier
Option C:	Weighted amplifier
Option D:	Differential amplifier
Q4.	What is a key characteristic of an instrumentation amplifier?
Option A:	High CMRR
Option B:	High output offset
Option C:	High output impedance
Option D:	None of the above
Q5.	The frequency transfer function of a differentiator is given by
Option A:	JωCR
Option B:	1/jωCR
Option C:	- jωCR
Option D:	-(1/jωCR)

Q6.	What is Barkhausen criterion for oscillation?
Option A:	Aß> 1
Option B:	Aß< 1
Option C:	Aß = 1
Option D:	Aß ≠ 1
Q7.	What will be the phase shift of feedback circuit in RC phase shift oscillator?
Option A:	360^0phase shift
Option B:	90^0phase shift
Option C:	60^0phase shift
Option D:	180^0phase shift
Q8.	Which of the following is a stable sine-wave audio-generator?
Option A:	Wein-bridge oscillator
Option B:	Hartley oscillator
Option C:	Armstrong oscillator
Option D:	None of the above
Q9.	The resistor in the peak detector are used to
Option A:	To maintain proper operation
Option B:	Protect op-amp from damage
Option C:	To get shaped non-sinusoidal waveform
Option D:	None of the mentioned
Q10.	How a triangular wave generator is derived from square wave generator?
Option A:	Connect oscillator at the output
Option B:	Connect Voltage follower at the output
Option C:	Connect differential at the output
Option D:	Connect integrator at the output
Q11.	A Schmitt trigger is
Option A:	a comparator with only one trigger point
Option B:	a comparator with hysteresis
Option C:	a comparator with three trigger points
Option D:	none of the above
Q12.	What is the drawback in zero crossing detectors?
Option A:	Low frequency signal and noise at output terminal
Option B:	High frequency signal and noise at input terminal
Option C:	Low frequency signal and noise at input terminal
Option D:	High frequency signal and noise at output terminal
Q13.	Which circuit converts irregularly shaped waveform to regular shaped waveforms?
Option A:	Schmitt trigger
Option B:	Voltage limiter

Option C:	Comparator
Option D:	None of the mentioned
Q14.	Determine the time period of a monostable 555 multivibrator.
Option A:	T = 0.33RC
Option B:	T = 1.1RC
Option C:	T = 3RC
Option D:	T = RC
Q15.	Free running frequency of Astable multivibrator?
Option A:	$f=1.45/(R_A+2R_B)C$
Option B:	$f=1.45(R_A+2R_B)C$
Option C:	$f=1.45C/(R_A+2R_B)$
Option D:	$f=1.45\ RA/(R_A+R_B)$
Q16.	The change in output voltage for the corresponding change in load current in a 7805 IC regulator is defined as
Option A:	Output Regulation
Option B:	Line Regulation
Option C:	Load regulation
Option D:	Input regulation
Q17.	A series switching regulators
Option A:	Improves the efficiency of regulators
Option B:	Improves the flexibility of switching
Option C:	Enhance the response of regulators
Option D:	Improves power Consumption
Q18.	What is the conversion ratio of the phase detector in 565 PLL?
Option A:	0.14
Option B:	0.35
Option C:	0.4458
Option D:	0.7
Q19.	Voltage to frequency conversion factor for VCO is
Option A:	$Kv = \triangle Vc/\triangle fo$
Option B:	$Kv = \triangle fo/\triangle Vc$
Option C:	$Kv = \triangle fo \times \triangle Vc$
Option D:	$Kv = 1/(\triangle fo \times \triangle Vc)$
Q20.	What happens when VCO output is 90% out of phase with respect to input signal?
Option A:	Perfect lock
Option B:	Attenuation
Option C:	Shift in phase of comparator
Option D:	Error signal is removed

Q21.	What is the difference between a 7490 and a 7493?
Option A:	7490 is a MOD-10, 7493 is a MOD-16
Option B:	7490 is a MOD-16, 7493 is a MOD-10
Option C:	7490 is a MOD-12, 7493 is a MOD-16
Option D:	7490 is a MOD-10, 7493 is a MOD-12
Q22.	Which of the following is MOD-12 counter?
Option A:	IC 7493
Option B:	IC 7490
Option C:	IC 7491
Option D:	IC 7492
Q23.	The 'heart' of the processor which performs many different operations _____
Option A:	Arithmetic and logic unit
Option B:	Motherboard
Option C:	Control Unit
Option D:	Memory
Q24.	Reset inputs are used in IC 7490, why?
Option A:	For increment of bit by 1
Option B:	For decrement of bit by 1
Option C:	For reset the counter
Option D:	For setting the counter
Q25.	A certain non-inverting amplifier has R_i of 1 kΩ and R_f of 100 kΩ. The closed-loop voltage gain is ……
Option A:	100,000
Option B:	1000
Option C:	101
Option D:	100