

Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: BMC 502 and Course Name: Analog and Digital Circuit Design

Time: 1 hour

Max. Marks: 50

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

Q1.	Which characteristic of PLL is defined as the range of frequencies over which PLL can acquire lock with the input signal?
Option A:	Free-running state
Option B:	Pull-in time
Option C:	Lock-in range
Option D:	Capture range
Q2.	Astable mode is also called as
Option A:	bounded mode
Option B:	free running mode
Option C:	one shot mode
Option D:	neutral mode
Q3.	For PWM applications, which pin of IC555 can be used
Option A:	Pin 4
Option B:	Pin 2
Option C:	Pin 6
Option D:	Pin 5
Q4.	Output of 555 is tapped from pin no
Option A:	4
Option B:	8
Option C:	3
Option D:	10
Q5.	Time period of VCO depends on
Option A:	Supply Voltage VCC
Option B:	Resistance
Option C:	Flip-flop output
Option D:	Filter output
Q6.	In Astable multivibrator, T-ON time depends on
Option A:	Time taken by the capacitor to discharge

Option B:	Time taken by the capacitor to charge
Option C:	Input at pin number 5
Option D:	Input at pin number 8
Q7.	Frequency to voltage converter internally contains
Option A:	a comparator, delay network, opamp
Option B:	2 comparators, flipflop
Option C:	current source, Schmitt trigger, buffer amplifiers
Option D:	Phase detector, VCO, lowpass filter
Q8.	Isolation amplifier is also known as
Option A:	unity gain amplifier
Option B:	Timer
Option C:	Opto coupler
Option D:	Pulse width modulator
Q9.	The gain in AD620 is as follows
Option A:	$G = ((R_1 + R_2)/R_G) + 1$
Option B:	$G = (R_1/R_G) + 1$
Option C:	$G = ((R_1 + R_2)/R_G)$
Option D:	$G = (R_2/R_G) + 1$
Q10.	When used as Frequency to voltage converter, IC 940 generates an output voltage that is linearly proportional to
Option A:	input voltage
Option B:	amplitude of the input
Option C:	input current
Option D:	input frequency waveform
Q11.	The problem of passive filters is overcome by using
Option A:	Analog filter
Option B:	Active filter
Option C:	LC filter
Option D:	A combination of analog and digital filters
Q12.	Narrow band-pass filters are defined as
Option A:	$Q < 10$
Option B:	$Q = 10$
Option C:	$Q > 10$
Option D:	$Q = 0$
Q13.	Which filter type is called a flat-flat filter?
Option A:	Cauer filter
Option B:	Butterworth filter
Option C:	Chebyshev filter
Option D:	Band-reject filter

Q14.	Which filter is used to remove 50Hz noise
Option A:	Low pass filter
Option B:	High pass filter
Option C:	Notch filter
Option D:	No filter
Q15.	The V-I characteristics for a triac in the first and third quadrants are essentially identical to those of in its first quadrant
Option A:	Transistor
Option B:	SCR
Option C:	UJT
Option D:	JFET
Q16.	A diac has semiconductor layers
Option A:	Three
Option B:	Two
Option C:	Four
Option D:	Five
Q17.	A UJT is sometimes called diode
Option A:	Low resistance
Option B:	High resistance
Option C:	Single-base
Option D:	Double-base
Q18.	In LM317 voltage regulator, what is the minimum value of voltage required between its input & output in order to supply power to an internal circuit
Option A:	1V
Option B:	5V
Option C:	3V
Option D:	10V
Q19.	In a linear IC voltage regulator, series pass transistor always operates in
Option A:	Saturation region
Option B:	Cut-off region
Option C:	Active region
Option D:	Passive region
Q20.	Switching regulators are series type regulators, which has
Option A:	Low CMRR
Option B:	reduced power dissipation & increased efficiency
Option C:	increased power dissipation
Option D:	reduced efficiency
Q21.	Which type of IC voltage regulator exhibits continuous variation in the

	impedance of transistor in order to supply the desired load current
Option A:	Switching regulators
Option B:	Power Transistors
Option C:	Current regulator
Option D:	Linear regulators
Q22.	The rotational speed of a given stepper motor is determined solely by the
Option A:	Shaft load
Option B:	Step pulse frequency
Option C:	Polarity of stator current
Option D:	Magnitude of stator current.
Q23.	In a three-stack 12/8-pole VR motor, the rotor pole pitch is
Option A:	15°
Option B:	30°
Option C:	45°
Option D:	60°
Q24.	A stepping motor is a
Option A:	Decremental device
Option B:	Digital device
Option C:	Analogue device
Option D:	Incremental device
Q25.	Operation of stepping motors at high speeds is referred to as
Option A:	Fast forward
Option B:	Slewing
Option C:	Inching
Option D:	Jogging

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	B
Q3.	D
Q4	C
Q5	A
Q6	B
Q7	A
Q8.	A
Q9.	A
Q10.	D
Q11.	B
Q12.	C
Q13.	B
Q14.	C
Q15.	B
Q16.	A
Q17.	D
Q18.	C

Q19.	C
Q20.	B
Q21.	D
Q22.	B
Q23.	C
Q24.	D
Q25.	B