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Bilaspur, Ke. No. 10125

BRAINWARE UNIVERSITY

Term End Examination 2021 - 22

Programme – Bachelor of Technology in Electronics & Communication Engineering

Course Name – Electronic Instrumentation and Measurement

Course Code - OEC601A

(Semester VI)

Time allotted : 1 Hrs.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

- (1) A dynamometer wattmeter can be used for
 - a) D.C. only
 - b) A.C. only
 - c) both D.C. and A.C.
 - d) none of the above
- (2) For measurements on high voltage capacitors, the suitable bridge is
 - a) Wein bridge
 - b) Modified De Santy's bridge
 - c) Schering bridge
 - d) none of the above
- (3) In electrical measuring instruments electrical energy is converted to
 - a) Mechanical energy
 - b) Heat energy
 - c) Chemical energy
 - d) Light energy
- (4) The frequency can be measure by
 - a) wien's bridge
 - b) Schering Bridge
 - c) De Sauty's Bridge
 - d) Anderson's Bridge
- (5) The degree of closeness of the measured value of a certain quantity with its true value is known as
 - a) Accuracy
 - b) Precision
 - c) Standard
 - d) Sensitivity
- (6) 1 Angstrom (Å) = _____
 - a) 10^{-6}m
 - b) 10^{-8}m
 - c) 10^{-10}m
 - d) 10^{-12}m
- (7) At high frequencies the capacitive reactance.
 - a) is constant
 - b) increases

- c) decreases
d) becomes zero
- (8) The commonly used detectors in ac bridges is/are
a) Head phones
b) Vibration galvanometers
c) Tuned amplifiers
d) all
- (9) The scale of PMMC type instruments is
a) Uniform
b) Non-uniform
c) Cramped at the lower ends
d) Crowded in the middle
- (10) A liquid crystal display requires
a) An AC drive
b) Both AC and DC drive
c) Both AC and DC drive
d) None of these
- (11) Which among the following is not the type of digital voltmeters?
a) Ramp type
b) Integrating
c) Potentiometric type
d) None of these
- (12) Vibration galvanometer are generally used
a) For measuring electric charges
b) As null-point detectors in ac bridges
c) As null-point detectors in dc bridges
d) For measuring power
- (13) The dynamometer wattmeter's are
a) More accurate on dc supply
b) More accurate on ac supply
c) Equally accurate on both ac and dc
d) None of these
- (14) The Ac Bridge which is used for the measurement of frequency is
a) Schering bridge
b) Wien bridge
c) Hay's bridge
d) Anderson bridge
- (15) The bridge suitable for the measurement of capacitance is /are
a) Anderson's bridge
b) Hay's bridge
c) Owen's bridge
d) None of These
- (16) Under balanced condition, the current flowing through the detector is equal to
a) 1 A
b) 0 A
c) Sum of the currents flowing in the
d) Difference between the current flowing in the
- (17) The vibration galvanometer used as detector, it responds
a) Only to the fundamental frequency
b) Only to the harmonics frequency
c) Both (a) and (b)
d) Does not respond to any frequency
- (18) Electron beam is deflected in _____
a) 1 direction
b) 4 directions
c) 3 directions
d) 2 directions
- (19) Electron gun section _____
a) Electron gun section _____
b) provides poorly focussed beam
c) doesn't provide any beam
d) provides electrons only
- (20) What determines light intensity in a CRT?
a) voltage
b) current
c) momentum of electrons
d) fluorescent screen
- (21) Focusing and accelerating anodes are _____
a) rectangular
b) cylindrical

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- c) spherical
- (22) What is the role of CRT?
- a) to emit electrons
c) to emit neutrons
- (23) Role of an attenuator is _____
- a) to boost the signal
c) to remove noise
- (24) Phase inverter is used in an amplifier in the CRO because _____
- a) phase inversion is needed
c) it is needed to operate a push pull
- (25) What is the problem with using more than one oscilloscopes?
- a) measuring the signal's parameters
c) supply voltage
- (26) After pre-amplification the signals are fed into
- a) an electronic switch
c) a rectifier
- (27) Electronic switch is controlled by
- a) D flip-flop
c) T flip-flop
- (28) X and Y plates of a CRO are connected to unequal voltages of equal frequency
- a) Circle
c) Ellipse
- (29) Voltage across the shunt is measured by _____
- a) voltmeter
c) thermocouple
- (30) Quantities are digitised using _____
- a) D/A converter
c) amplifier
- (31) Output of a digital multimeter is _____
- a) mechanical
c) optical
- (32) A.C. voltages are measured using _____
- a) oscillators and op amps
c) resistor and capacitor
- (33) Input voltage depends on
- a) resistance
c) current
- (34) What is the effect of clock on the voltage?
- a) voltage doubles with clock input
c) no effect
- (35) Ramp type DVM uses
- a) a linear ramp technique
- d) square
- b) to emit protons
d) to emit alpha particles
- b) to distort the signal
d) to improve the operation
- b) no phase inversion is needed
d) it provides voltage stability
- b) triggering
d) errors in reading
- b) a signal generator
d) a regulator
- b) SR flip-flop
d) JK flip-flop
- b) Straight line
d) Figure of eight
- b) multimeter
d) thermometer
- b) oscillator
d) A/D converter
- b) optical
d) analog
- b) rectifiers and filters
d) inductor and resistor
- b) capacitance
d) time-period
- b) voltage halves with clock input
d) voltage becomes zero with clock input
- b) a non-linear ramp technique

- c) an exponential ramp technique
d) an asymptotic ramp technique
- (36) Which is the main device used in the linear ramp technique?
a) exponential ramp
b) asymptotic ramp
c) non-linear ramp
d) linear ramp
- (37) In ramp technique Which determines the rate of measurement cycles?
a) oscillator
b) amplifier
c) mutivibrator
d) oscilloscope
- (38) A successive approximation type DVM makes use _____
a) of a digital divider
b) of an analog divider
c) of an oscillator
d) of a transducer
- (39) Which compares the output in a successive approximation type DVM?
a) op amp
b) diode
c) comparator
d) rectifier
- (40) Resolution of a successive approximation type DVM is given by the relation.
a) $R = 1/10^n$
b) $R = 1/10$
c) $R = 10^n$
d) $R = 10$
- (41) Speed of a successive approximation type DVM can be improved by making use of _____
a) electrical switches
b) mechanical devices
c) solid state devices
d) transformers
- (42) Digital voltmeters can be used to measure _____
a) voltage only
b) voltage, temperature, pressure etc.
c) voltage and current
d) voltage and resistance
- (43) In a DVM, a signal conditioning circuit is used _____
a) to bring current to a suitable limit
b) to bring resistance to a suitable limit
c) to bring resistance to a suitable limit
d) to bring voltage to a suitable limit
- (44) What is the effect of IC chips on DVM?
a) increase in cost
b) increase in power
c) reduction in cost
d) increase in size
- (45) In D.C. circuits, power is measured using _____
a) ohmmeter and galvanometer
b) ohmmeter and voltmeter
c) ammeter and voltmeter
d) ammeter and galvanometer
- (46) In a Dynamometer type wattmeter, the fixed coil is split into _____
a) 4
b) 3
c) 2
d) 1
- (47) When a current carrying coil is placed in the magnetic field.
a) no force is exerted
b) voltage is produced
c) power is generated
d) a force is exerted
- (48) What is the effect of capacitance on wattmeter reading?
a) aiding the inductance
b) opposite to that of inductance
c) aiding the capacitance
d) opposite to that of resistance
- (49) Current in a pressure coil of the Dynamometer type wattmeter

- a) lags the applied voltage
c) is in phase with the applied voltage
- b) leads the applied voltage
d) there is a phase difference of 90 degrees
- (50) What is the effect of frequency on the torque of a moving system?
a) torque is half of the frequency
c) torque is thrice the frequency
b) torque is twice the frequency
d) torque is four times the frequency
- (51) In Wein's bridge, the output frequency is determined by _____
a) RLC combination
c) RC combination
b) LC combination
d) RL combination
- (52) Maxwell's Inductance Capacitance Bridge is used for measuring _____
a) Inductance
c) Frequency
b) Capacitance
d) Mutual Inductance
- (53) In CRO, horizontal deflection is given by _____
a) $x = K$
c) $x = 1$
b) $x = V$
d) $x = K \times V \times$
- (54) In CRO, vertical deflection is given by _____
a) $y = K y V$
c) $x = 1$
b) $y = K y$
d) $y = V y$
- (55) For a series RC circuit, what is δ ?
a) voltage between series RC
c) voltage across C
b) voltage between series RC combination
d) voltage across R
- (56) Quality factor is given by the expression
a) $Q = 1/R$
c) $Q = X/R C$
b) $Q = R$
d) $Q = XR$
- (57) A Schering bridge can be used for the
a) measuring voltages
c) testing capacitors
b) measuring currents
d) protecting the circuit from temperature rises
- (58) Bridge must be balanced for _____
a) magnitude
c) magnitude and angle
b) angle
d) power
- (59) For inductive impedances, the phase angle is _____ for Bridge balance.
a) Positive
c) zero
b) negative
d) exponential
- (60) When bridge is balanced?
a) no voltage drop across the circuit
c) temperature of the circuit is high
b) power dissipation is high
d) no current flows