Electrical and Electronics Measurement & Instrumentation Expected MCQ PDF 7 For VIZAG Exam 2017

1) If the quantity to be measured remains constant during the process of taking the repeated measurements then the random errors can be eliminated by

a. Calculating the mean of the number of repeated measurements

b. Calculating the median of the number of repeated measurements

c. Calculating the sum of the numbers of repeated measurements

d. Either (a) or (b)

ANSWER: Either (a) or (b)

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2) The error between mean of finite data set and mean of infinite data set is known as

a. True error of the mean

b. Standard error of the mean

c. Finite error

d. Infinite error

ANSWER: Standard error of the mean

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3) In a measurement system,

a. A single measurement components may have both random errors and systematic errors

b. A measurement system consists of several components with each component having separate errors

c. Both the statement (a) & (b) are true

d. Neither statement (a) nor statement (b) is true

ANSWER: Both the statement (a) & (b) are true

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4) When a 100 V moving iron voltmeter is of accuracy class 1 - 0 is used in a circuit, it reads 50 V. Then the maximum possible percentage error in the reading is

a. 1 %

b. 2 %

c. 2.5 %

d. 3 %

ANSWER: 2 %

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5) If the two voltage measurements are V1 = 150 ± 2% and V2 = 100 ± 4% respectively. Then the maximum percentage error in the sum of two voltage measurements is

a. ± 2.4 %

b. ± 2.6 %

c. ± 2.8 %

d. ± 3.4 %

ANSWER: ± 2.8 %

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6) If the resistance in a circuit is given by 80 Ω ± 0.2% and the current flowing through it is 5A ± 0.1%, then the uncertainty in the power will be

a. ± 0.2 %

b. ± 0.4 %

c. ± 0.6 %

d. ± 0.8 %

ANSWER: ± 0.4 %

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7) While measuring resistance by the voltmeter - ammeter method, the maximum possible percentage error in the voltmeter and ammeter are ± 1.8% and ± 1.2% respectively. Then the maximum possible percentage error in the value of resistance will be

a. ± 3%

b. ± 4%

c. ± 4.2%

d. ± 4.8%

ANSWER: ± 3%

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8) In a Wheatstone bridge, the formula for finding unknown resistance (R_2) is given by $R_2 = (R_2 R_3) / R_1$
Where, $R_1 = 150\Omega \pm 0.1\%$
$R_2 = 250\Omega \pm 0.1\%$
$R_3 = 300\Omega \pm 0.1\%$

a. $R_2 = 250\Omega \pm 0.1\%$

b. $R_2 = 300\Omega \pm 0.3\%$

c. $R_2 = 750\Omega \pm 0.3\%$

d. $R_2 = 500\Omega \pm 0.3\%$

ANSWER: $R_2 = 500\Omega \pm 0.3\%$

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9) If the degree of damping of an instrument should be adjusted to a value which is sufficient to enable the pointer to rise quickly to its deflected position without overshooting is called as

a. Overdamped

b. Dead beat

c. Underdamped

d. None of these

ANSWER: Dead beat

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10) Due to overdamping, the instrument will become

a. Slow

b. Lethargic

c. Fast

d. Both (a) and (b)

ANSWER: Both (a) and (b)

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11) Electrostatic instruments are generally used as

a. Voltmeters

b. Ammeters

c. Wattmeters

d. Watt-hour meters

ANSWER: Voltmeters

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12) In electrostatic voltmeters, the principle of their operation is the force of attraction between electric charges on neighboring plates between which potential difference is maintained. The attracted - disc type electrostatic instruments are used for the measurement of

a. Very low voltages

b. Low voltages

c. High voltages

d. Very high voltages

ANSWER: Very high voltages

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13) A Kelvin's multicellular voltmeter has a torsion head and a coach spring for

a. Protection against accidental fraction of suspension due to vibration

b. For zero adjustment

c. Torsion head for zero adjustment and coach spring for Protection against accidental fraction of suspension due to vibration

d. Torsion head for Protection against accidental fraction of suspension due to vibration and coach spring for zero adjustment

ANSWER: Torsion head for zero adjustment and coach spring for Protection against accidental fraction of suspension due to vibration

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14) Electrostatic voltmeter instruments are suitable for

a. AC work only

b. DC work only

c. Both AC and DC work

d. None of these

ANSWER: Both AC and DC work

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15) If an electrostatic voltmeter is used on AC circuit and has non uniform waves, then it will read

a. Average values

b. RMS values

c. Peak values

d. All of these

ANSWER: RMS values

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16) In electrostatic instruments iron is not used for construction. These instruments are

a. Free from hysteresis and eddy current losses

b. Free from temperature errors

c. Dependent on temperature errors

d. Both (a) and (b)

e. None of the above

ANSWER: Both (a) and (b)

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17) The multiplying factor of electrostatic voltmeters is given by

a. $(C + C_v) / C$

b. $(C + C_v) / C_v$

c. $C / (C + C_v)$

d. $C_v / (C + C_v)$

ANSWER: $(C + C_v) / C$

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18) The range of electrostatic voltmeter can be extended by using

a. Resistance potential divider method

b. Capacitance potential divider method

c. Both (a) and (b)

d. None of these

ANSWER: Both (a) and (b)

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19) The resistance potential divider method and capacitance potential divider method is used for

a. Both AC and DC

b. Former method can be used for both AC and DC and the later method can be used only for AC

c. Former method can be used for AC only and the later method can be used for both AC and DC

d. Former method can be used for DC only and the later method can be used only for AC

ANSWER: Former method can be used for both AC and DC and the later method can be used only for AC

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20) The indicating instruments with linear scale is

a. PMMC

b. Electrostatic instrument

c. Dynamometer instrument

d. Thermocouple instrument

ANSWER: PMMC

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21) Shielding of the capacitor is done to

a. Make the value of capacitor definite

b. Balance the bridge without any problem

c. Both (a) and (b)

d. None of these

ANSWER: Both (a) and (b)

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22) In AC bridges, the Wagner earth devices are used to

a. Remove all the earth capacitances from the bridge circuit

b. Remove harmonics

c. Reduce error caused by stray electric field

d. All of these

ANSWER: All of these

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23) At 2 MHz, the resonance is obtained with a resonating capacitance value of 12 pF and at 400 kHz, the resonance is obtained with resonating capacitance value of 320 pF. Then the self capacitance of the coil is

a. 0.62 pF

b. 0.83 pF

c. 1.2 pF

d. 1.5 pF

ANSWER: 0.62 pF

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24) When a voltmeter - ammeter method is applied for the measurement of resistance, the voltmeter reads a value of 8.28 V and the ammeter reading is 4.14 mA. Then the value of the resistance will be

a. 2 kΩ

b. 2.0 kΩ

c. 2.00 kΩ

d. 2.000 kΩ

ANSWER: 2.00 kΩ

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25) Electrical equipments are generally earthed through an electrode to avoid shocks when someone touches the body of the equipment. The earth resistance is effected by

a. Depth of electrodes buried in the soil

b. Shape and material of earth electrodes

c. Specific resistance of the soil surrounding the electrode

d. All of these

e. None of these

ANSWER: All of these

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26) The earth resistance can be measured by

a. Fall of potential method

b. Using an earth tester

c. Ducter ohmmeter method

d. Only (a) and (b)

e. All the above

ANSWER: Only (a) and (b)

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27) The electrodynamic frequency meters have

a. Linear scale and their readings does not depends on voltage

b. Linear scale and their readings depends on voltage

c. Non linear scale and their readings does not depends on voltage

d. Non linear scale and their readings depends on voltage

ANSWER: Linear scale and their readings does not depends on voltage

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28) A moving iron frequency meter consists of

a. Two inductive circuits connected in parallel

b. One inductive and one non inductive circuit connected in parallel

c. Two non inductive circuits connected in parallel

d. One inductive and one non inductive circuit connected in series

ANSWER: One inductive and one non inductive circuit connected in parallel

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29) If the frequency of electrodynamic power factor meter is doubled then its reading will become

a. Twice of the original reading

b. Half of the original reading

c. Four times of the original reading

d. Remains unaffected

ANSWER: Remains unaffected

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30) Moving iron power factor meter are suitable for 3 phase balanced circuits. It consists of

a. One control spring

b. Two control spring

c. Three control spring

d. No control spring

ANSWER: No control spring

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31) The nominal ratio for a current transformer is given by

a. (rated primary winding current)/(rated secondary winding current)

b. (number of turns in the primary winding)/(number of turns in the secondary winding)

c. (number of turns in the secondary winding)/(number of turns in the primary winding)

d. (rated secondary winding current)/(rated primary winding current)

ANSWER: (rated primary winding current)/(rated secondary winding current)

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32) The resistances of potential transformer winding is minimized by using

a. Thick conductors and small length of turns

b. Thin conductors and small length of turns

c. Thin conductors and large length of turns

d. Thick conductors and large length of turns

ANSWER: Thick conductors and small length of turns

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33) Bourdon tube is used for the measurement of gauge pressure of

a. Gas

b. Liquid fluid

c. Solid

d. Only (a) and (b)

e. All the above

ANSWER: Only (a) and (b)

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34) Dead weight gauge is used for the measurement of pressure of

a. About 1000 bar

b. About 2000 bar

c. About 5000 bar

d. About 7000 bar

ANSWER: About 7000 bar

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35) The ionization gauge an instrument used for the measurement of

a. Very low pressure

b. Medium pressure

c. High pressure

d. Very high pressure

ANSWER: Very low pressure

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36) Capacitance sensor can measure very small displacement. It can be formed by varying

a. Separation

b. Area

c. Permittivity

d. Either (a) or (b) or (c)

ANSWER: Either (a) or (b) or (c)

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37) Optical sensors used for the displacement measurement works on the principal that

a. Intensity of light increases with distance

b. Intensity of light decreases with distance

c. Intensity of light remains constant with distance

d. Intensity of light increases with time

ANSWER: Intensity of light decreases with distance

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38) The detectors used in optical sensors is

a. Photodiodes

b. Phototransistors

c. Laser

d. Only (a) and (b)

e. All the above

ANSWER: Only (a) and (b)

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39) A liquid crystal display requires

a. An AC drive

b. A DC drive

c. Both AC and DC drive

d. None of these

ANSWER: An AC drive

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40) The full range of audibility in audio frequency oscillator is

a. 0 to 20 Hz

b. 20 Hz to 2 kHz

c. 20 Hz to 20 kHz

d. 20 Hz to 20 MHz

ANSWER: 20 Hz to 20 kHz
