

ELECTRICAL TEST PAPER

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1. In a single – phase power factor meter, the controlling torque is
 - a) Provided by spring control
 - b) Provided by gravity control
 - c) Provided by stiffness of suspension
 - d) Not required
2. An ac voltmeter using full-wave rectification and having a sinusoidal input has an ac sensitive equal to
 - a) 1.414 times dc sensitivity
 - b) Dc sensitivity
 - c) 0.90 times dc sensitivity
 - d) 0.707 times dc sensitivity
3. The total current $I = I_1 + I_2$ in a circuit is measured as $I_1 = 150 \pm 1$ A, $I_2 = 250 \pm 2$ A, where the limits of error are given as standard deviations. I is measured as
 - a) (400 ± 3) A
 - b) (400 ± 2.24) A
 - c) $(400 \pm 1/5)$ A
 - d) (400 ± 1) A
4. In electrodynamic type wattmeters, the inductance of pressure coil produces error. The error is
 - a) Constant irrespective of the power factor of the load
 - b) Higher at higher power factor loads
 - c) Higher at lower power factor loads
 - d) Highest at unity power factor loads
5. If an induction type energy meter runs fast, it can be slowed down by
 - a) Lag adjustment
 - b) Light load adjustment
 - c) Adjusting the position of braking magnet and moving it closer from the centre of the disc
 - d) Adjusting the position of braking magnet and moving it away from the centre of the disc
6. Spectrum analyser is a combination of
 - a) Narrow band super heterodyne receiver and CRO
 - b) Signal generator and CRO
 - c) Oscillator and wave analyser
 - d) VTVM and CRO
7. A spring controlled moving iron voltmeter draw a current of 1 mA for full scale value of 100V. If it draw a current of 0.5 mA, the meter reading is
 - a) 25V
 - b) 50V
 - c) 100V
 - d) 200V
8. In the measurement of power on balanced load by two Wattmeter method in a 3-phase circuit, the readings of the Wattmeter are 3kW and 1kW respectively, the latter being obtained after reversing the connections to the current coil. The power factor of the load is
 - a) 0.277
 - b) 0.554
 - c) 0.625
 - d) 0.866
9. The accuracy of Kelvin's double bridge for the measurement of low resistance is high because the bridge
 - a) Uses two pairs of resistance arms
 - b) Has medium value resistance in the ratio arms
 - c) Uses a low resistance link between standard and test resistances
 - d) Uses a null indicating galvanometer
10. Torque /Weight ratio of an instrument indicates
 - a) Selectivity
 - b) Accuracy
 - c) Fidelity
 - d) Sensitivity
11. A first order instrument is characterized by
 - a) Time constant only
 - b) Static sensitivity and time constant
 - c) Static sensitivity and damping coefficient
 - d) Static sensitivity , damping coefficient and natural frequency of oscillations
12. A standard resistance is made 'Bifilar' type to eliminate
 - a) Stray capacitance
 - b) Temperature effect
 - c) Inductive effect
 - d) Skin effect
13. Vibration galvanometers, tuneable amplifiers and head phones are used in
 - a) D.C bridges
 - b) A.C. bridges
 - c) Both D.C. and A.C. bridges
 - d) Kelvin double bridge
14. The capacitance and loss angle of a given capacitor specimen are best measured by
 - a) Wheatstone bridge
 - b) Maxwell bridge
 - c) Anderson bridge
 - d) Schering bridge

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15. The energy capacity of a storage battery is rated in

- a) kwh b) kw
c) Ampere hours d) joules

16. The pressure coil of an induction type energy meter is

- a) Highly resistive
b) Highly inductive
c) Purely resistive
d) Purely inductive

17. The relation between electric intensity E, voltage applied V and the distance d between the plates of a parallel plate condenser is

- a) $E = V/d$ b) $E = V \times d$
c) $E = V/(d)^2$ d) $E = V \times (d)^2$

18. Ohm's law in point form in field theory can be expressed as

- a) $V = RI$ b) $\vec{J} = E/\vec{J} = \vec{E}/\sigma$
c) $\vec{J} = \sigma \vec{E}$ d) $R = \rho l/A$

