Instruction:

- All question are compulsory
- 4 marks for the write answer and for each wrong choice 1/2 marks will be deducted.
- Total time- 1 Hr

IES Sample Paper

i) A thermocouple is

1. Has a low time constant when it is bare
2. Has a low time constant when it is provided with a sheath
3. Has the same time constant whether it is bare or with sheath
4. None of the these

   Ans – (1)

ii) Piezoelectric accelerometers

1. Should not be used for high freq. above 100 Hz
2. Should be used for low freq.
3. Should use a monitoring source of low input impedence
4. Have a low natural freq.

Ans – (2)

iii) The meter constant of a single-phase 240V induction watthour meter is 400 revolution per kWh. The speed of the meter disc for a current of 10A Of 0.8 p.f. lagging will be

1. 12.8 rpm
2. 16.02 rpm
3. 18.2 rpm
4. 21.1 rpm

Ans – (1)

iv) The wheatstone method of resistance measurement is idealy suitable for the measurement of the values in the range of

1. 0.001 ohms – 1 ohm
2. 0.1 ohm-100 ohms
3. 100 ohm- 10 k-ohms
4. 100 k-ohms – 10 M-ohms

Ans – (2)

v) A null type of instrument as compared to a deflection type instrument has

1. Higher accuracy
2. Lower sensitivity
3. Faster response
4. All of above

Ans- (1)

vi) The value of resistance of an earthing electrode depends upon

1. Shape and material of electrode
2. Depth to which electrode is driven into earth
3. Specific resistance of coil
4. All

Ans- (4)

vii) Which of the photoelectric transducers is used for production of electric energy by converting solar energy

1. Photo emissive cell
2. Photo diode
3. Photo transistor
4. Photo voltaic cell

Ans- (4)

viii) The dynamic characteristic of a capcitive transducer are similar to those of

1. Low pass filters
2. High pass filters
3. Notch filters
4. Band pass filters

Ans-(2)

ix) Sensitivity of a potentiometer can be increased by

1. Decreasing the length of the potentiometer
2. Increasing the length
3. Decreasing the current in wire
4. Decreasing the resistance in the rheostat in series with the battery

Ans – (3)

x) 1 A watt meter is reading back-wards in an experiment .upscale reading can be obtained by reversing

1. Pressure coil connection only
2. Current coil connection only
3. Both pressure and current coil connections only
4. Either pressure or current

And – (4)

xi) If the practical units of the voltages and the current wave each made 20 times as large as they are at present , what would be the consequences alteration in the size of the unit of capacitance?

1. 200 times
2. 60 times
3. 20 times
4. Nil

Ans- (4)

xii) A thermo-couple ammeter gives full-scale deflection of 10A. when it reads 1/5th of the scale , the current will be

1. 2A
2. 4A
3. 4.47A
4. 5.78A

Ans – (3)

xiii) The sensitivity of the thermostats as compared to with the sensitivity of the platinum resistor temp. detector over a temp. range of -100 deg to 400 deg celcius to change in temp. is

1. 100 times
2. 10^6 times
3. 10^7 times
4. 10^3 times

Ans – (2)

xiv) A vertical amplifier for a CRO instrument responds to

1. Only a high gain
2. Only a broad band-width
3. A constant gain times bandwidth product
4. All of these

Ans- (3)

xv) The high torque to weight ratio in an analog indicating instruments indicates

1. High friction loss
2. Low friction loss
3. Nothing as regards friction loss
4. None

Ans-(2)

xvi) A d'Arsonval movements is rated at 50 micro ampere. Its sensitivity is

1. 20000Ω/V
2. 200000 Ω/v
3. 200Ω/v
4. Cant be determined

Ans- (1)

xvii) A current transformer has a rating of 100/5A. its magnetizing and loss component of exciting current are 10 A and 0.6 A respectively and secondary windings burden is purely resistive, its transformation ratio at rated current is

1. 20.12
2. 20.2
3. 200.2
4. None

Ans- (2)

xviii) Turns compensation is used in current transformer primarily for reducing

1. Phase angle error
2. Both ratio and phase angle error
3. Ratio error reduction in phase error is incidental
4. None

Ans- (3)

xix) The main advantages of using a three OP-AMP instrumentation amplifier over a single OP-AMP differential amplifier lies in

1. Higher value of CMRR
2. Low noise figure
3. c. Elimination of the need for accurate matching of resistors
4. Simplicity of gain adjustments

Ans-(3)

xx) On an oscilloscope , the lissajous pattern of eight keeps on changing the shope when the ratio of frequency is

1. Not exactly 1:1
2. Not exactly 2:1
3. Exactly 3:1
4. Exactly 4:1

Ans- (2)