

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code : 93404

B.E./B.Tech. DEGREE EXAMINATION, DEC 2020

Third Semester

Electronics and Communication Engineering

19UEC304- Basic Electrical and Instrumentation Engineering

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The unit for inductance is _____ CO1- R
(a) ohm (b) Henry (c) A/m (d) A/s
2. At very low frequencies a series R-C circuit behaves as almost CO1- R
purely..... circuit
(a) Resistive (b) Inductive (c) Capacitive (d) None of the above
3. A stepper motor may be considered as a converter CO2- App
(a) dc to dc (b) ac to ac (c) dc to ac (d) digital-to-analogue
4. Electric motor changes electrical energy into CO2- App
(a) potential energy (b) thermal energy (c) heat energy (d) kinetic energy
5. The desirable static characteristics of a measuring system are CO3- U
(a) Accuracy and reproducibility (b) Accuracy, sensitivity and reproducibility
(c) Drift and dead zone (d) Static error
6. Sensitivity of a voltmeter is given by CO3- U
(a) Ohms per volt (b) Reciprocal of full scale deflection current
(c) Both (a) and (b) (d) None of the above
7. The oscillator that is mostly used for generating signals of frequency CO4-R
of few 'KHz' is
(a) Armstrong oscillator (b) Crystal oscillator
(c) Wein bridge oscillator (d) Colpitts oscillator

8. The basic difference between square wave and pulse generator is their _____.
- (a) Waveforms shape (b) Duty cycles
(c) Frequency range (d) Cost
9. CRO gives the visual representation of time varying signals. The display of the signal is
- (a) One dimensional (b) Two dimensional
(c) Three dimensional (d) Four dimensional
10. The cathode of a C.R.O. is usually coated with
- (a) Alkali metals (b) Tungsten or thorium oxide
(c) Copper oxide (d) Barium or strontium oxide

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. A 50Hz, alternating voltage of 150V (r.m.s) is applied independently to (i) Resistance of 10Ω (ii) Inductance of 0.2H (iii) Capacitance of $50 \mu\text{F}$. Find the expression for the instantaneous current in each case. Draw the phasor diagram in each case
- CO1-App (8)
12. Explain in detail the principle of operations of single phase induction motor.
- CO2- U (8)
13. Describe the working principle of voltmeter with neat diagram.
- CO3-U (8)
14. Discuss the working principles of sweep frequency generator with neat diagram.
- CO4 U (8)
15. Describe the internal structure of Cathode Ray Oscilloscope with neat diagram.
- CO5- U (8)