

V.P & R.P.T.P. SCIENCE, V.V.NAGAR

Internal Exam

B.Sc. (IInd SEM.) INSTRUMENTATION (Voc.)

DATE: 06/03/2019(Wednesday)

SUB: US02CINV21

TIME: 12:30 pm to 2:30 pm

MARKS-50

Q-1 Choose correct answer.

[08]

- An as current given by $i=14.14 \sin (wt + \pi/6)$ has a phase of _____ amperes.
(A) 30 (C) 180
(B) -30 (D) none of above
- The current drawn by a capacitor the _____ applied voltage by 90° .
(A) lead (C) lead and lags
(B) lags (D) none of above
- Impedance of an RL circuit is given by the _____ sum of resistance and reactance.
(A) vector (C) scalar
(B) addition (D) none of above
- A pure inductor or capacitor dissipates _____ power.
(A) no (C) low
(B) maximum (D) none of above
- Photo multiplier tube consists of _____ material
(A) Photo sensing (C) Semiconductor
(B) Pure conductor (D) none of above
- Power Supply is used to convert A.C voltage to _____.
(A) Pulse Voltage (C) Lower A.C Voltage
(B) D.C Voltage (D) none of above
- _____ Material used in piezoelectric transducer.
(A) silicon (C) quartz
(B) germanium (D) none of above
- Capacitive transducer is _____.
(A) passive (C) non electric
(B) displacement (D) none of above



Q-2 Short answer type question. (any Five)

[10]

- Briefly explain frequency and amplitude of sine wave.
- Define phase difference of sine wave.
- Briefly explain Sharpness of Resonance.
- List application of resonance circuit.
- Define rectifier and briefly explain.
- Draw block diagram of power supply.
- Define a transducer.
- State different type of displacement transducer.

Q.3 List different values of sinusoidal voltage and current and explain with necessary figure. [08]

OR

Q.3 Write a note on function generator. [08]

Q.4 Write a note on parallel resonance circuit. [08]

OR

Q.4(a) Explain sharpness of resonance. [04]

Q.4(b) A circuit consist of capacitor of 100pF connected in series with coil of resistance 5Ω and inductance $100\mu\text{H}$. Calculate resonance frequency (f_0), Q-factor (Q_0) and bandwidth (BW). [04]

5.(a) Writes note on solar Cell with diagram. [05]

5.(b) Difference between half wave and full wave rectifier. [03]

OR

Q.5 What is photomultiplier tube? And explain it in detail. [08]

Q.6 Explain in detail Strain Gauge Transducer. [08]

OR

6.(a) Explain Capacitive type transducer with diagram. [04]

6.(b) Write a note on Piezo electric transducer. [04]

