

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

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

DATE: 03/10/2018

SUB: US03CINV02

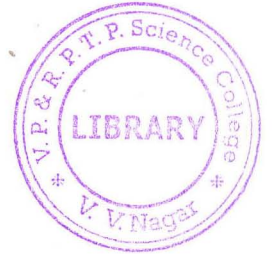
TIME: 3:00 pm to 5:00 pm

MARKS-50

Q-1 Choose correct answer

[08]

1. The Op-amp is device that can be used to amplify ___ input signal
 - A. D.C as well as A.C
 - B. A.C
 - C. D.C
 - D. None of Above
2. The Resistance measure between output terminal and ground is called ___
 - A. Open loop voltage gain
 - B. Input Voltage gain
 - C. Output Impedance
 - D. CMRR
3. The Differential D.C Op-Amp is mostly used to amplify output of ___.
 - A. Transducer
 - B. Low pass filter
 - C. High pass filter
 - D. None of above
4. Current to Voltage converter op-amp is also known as ___ op-amp.
 - A. Trans-resistive
 - B. Trans-inductive
 - C. Trans-capacitive
 - D. None of this
5. A PWM produces a train of pulse that has with propositional to the ___ of modulation signal.
 - A. Amplitude
 - B. Pulse
 - C. Amplitude and pulse
 - D. None
6. In Astable –multivibrator total periodic time $T=T_1+T_2=$
 - A. $2RC \log \frac{[(1+A)]}{[(1-A)]}$
 - B. $RC \log \frac{[(1+A)]}{[(1-A)]}$
 - C. $2RC \log \frac{[(1-A)]}{[(1+A)]}$
 - D. $RC \log \frac{[(1-A)]}{[(1+A)]}$
7. A ___ In general is one which separates, unwanted quantity from the signal.
 - A. Filter
 - B. Pulse
 - C. Active filter
 - D. Passive filter
8. There are ___ types of band pass filter.
 - A. One
 - B. Two
 - C. Three
 - D. Four



- Q-2 Short answer type question. (any Five) [10]**
1. Explain Ideal Op-Amp Characteristics.
 2. Briefly explain Input Impedance and Common Mode Rejection Ratio (CMMR) of operational amplifier.
 3. Draw the circuit diagram Current to Voltage Converter of operational amplifier.
 4. Briefly explain adding Integrator with necessary figure.
 5. Just draw Astable multivibrator circuit and waveform.
 6. Draw circuit of Square wave generator and briefly explain.
 7. Given the difference between Active Filter vs. Passive filter.
 8. Draw Circuit Diagram active band pass filter.



- Q.3 Draw the circuit diagram of Inverting Amplifier and derive an expression for inverting amplifier with feedback. [08]**

OR

- Q.3 Describe summing Op-Amp with necessary figure. [08]**

- Q.4 Draw circuit Diagram with wave form of integrator and explain in detail. [08]**

OR

- Q.4 Explain in detail voltage to current converter. [08]**

- Q.5 Discuss about Astable Multivibrator. [08]**

OR

- Q.5 Explain about Zero-Crossing Detector with necessary waveform. [08]**

- Q.6 Give the details about data Acquisition using instrumentation Amplifier. [08]**

OR

- Q.6 Define Instrumentation amplifier and explain with Circuit diagram. [08]**
