

SARDAR PATEL UNIVERSITY
BSc (VI Sem.) Examination
Friday, 12th April, 2013
3 - 6 pm
Electronics
US06CELE04 – Instrumentation II

Note: Figures to the right indicate full marks.

Total Marks: 70

- Q.1 Multiple choice questions. [10]
- (1) A chopper amplifier _____ .
 (a) converts AC signal from low frequency to high frequency
 (b) converts DC signal from low frequency to high frequency
 (c) converts AC signal from low frequency to DC high frequency
 - (2) The voltage range of true rms responding voltmeter is _____.
 (a) 100V to 300V (b) 10V to 300V (c) 100 μ V to 300V
 - (3) The amplifier which has no drift is called as _____.
 (a) Differential Amplifier (b) D.C. Amplifier (c) Chopper Amplifier
 - (4) The acronym DCU stands for _____.
 (a) Digital Control Unit (b) Direct Counting Unit (c) Decade Control Unit
 - (5) Photosensitive chart paper is used for _____ writing in strip chart recorder.
 (a) Thermal (b) Optical (c) Electrical
 - (6) The stylus (Pen) consists of a _____ wire moving over the aluminium surface.
 (a) copper (b) tungsten (c) nichrome
 - (7) IEEE 488 standard is based on the transmission of _____ data bus.
 (a) 16 bit (b) 8 bit (c) 4 bit
 - (8) _____ type of recorders are widely used in instrumentation system.
 (a) X-Y recorders (b) Galvanometer type recorders
 (c) Magnetic type recorders
 - (9) A _____ instrument may be only talker providing voltage measurement and requires no adjustments.
 (a) Voltmeter (b) Frequency Counter (c) Signal Generator
 - (10) In differential voltmeter _____ meter is connected between the unknown voltage and the reference voltage.
 (a) Galvanometer (b) Ammeter (c) Null meter
- Q.2 Answer **Any Ten** in brief. [20]
- (1) State the importance of Chopper type Amplifier in dc voltmeter.
 - (2) Define form factor.
 - (3) Write the basic component of magnetic tape recorder.

- (4) State the applications of X-Y Recorders.
- (5) Which three components are required for computer operated test system?
- (6) Draw the 24 Pin connector of IEEE 488 bus and label each pin.
- (7) State the difficulty of true-rms responding voltmeter and how it is overcome.
- (8) Explain the advantage of digital voltmeter over analog voltmeter.
- (9) State the drawback of Differential Voltmeter.
- (10) State the different methods to record the data on the Strip Chart Paper.
- (11) State the eight different control lines in IEEE488 bus.
- (12) What is the use of Q-Meter? Explain its basic operation.

Q.3 Draw the block diagram of True-rms responding voltmeter and explain it. [10]

OR

Q.3 Discuss in detail the Chopper Stabilized Amplifier. [10]

Q.4 Draw the block diagram of ramp type digital voltmeter and explain its working. [10]

OR

Q.4 Discuss in detail the Q-Meter. [10]

Q.5 Discuss in detail Magnetic recorders. [10]

OR

Q.5 Discuss in detail the Digital XY Plotters. [10]

Q.6 Explain how an audio amplifier can be tested using automatic test system. [10]

OR

Q.6 Give an account of two instruments used in computer controlled instrumentation. [10]

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