Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EX-6004 (CBGS)

B.E. VI Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Electronic Instrumentation

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe the different types of sweeps used in CRO. Explain their spheres of application? 7

   b) Explain with the help of neat diagram how you would measure the frequency of a signal using CRO. 7

2. a) How does the digital storage oscilloscope differ from the conventional storage oscilloscope using a storage CRO? What are the advantages of each? 7

   b) Define deflection sensity and deflection factor for a CRO and prove the formula for deflection sensity. 7

3. a) Derive the general equation for balance for an a.c bridge. Prove that two conditions i.e. for magnitude and phase have to be satisfied if an a.c bridge is to be balanced unlike a d.c. bridge where in only the magnitude condition is to be satisfied. 7

   b) Describe the working of a low voltage schering bridge. Derive the equation for capacitance and dissipation factor. Draw the phasor diagram of the bridge under condition of balance. 7

4. a) Derive the equations of balance for an Anderson's bridge. Draw phasor diagram for condition under balance. Discuss the advantages and disadvantages of the bridge. 7

   b) Explain the working principle, constructional details and applications of photo diodes. Draw the characteristics. 7

5. a) Derive the expression for frequency response characteristics of piezo-electric transducers. 7

   b) Describe the construction, principle of working and applications of Hall effect transducers. 7

6. a) What is spectrum analysis? Describe with the help of neat diagram the operation of a spectrum analyser. 7

   b) Explain the principle of working and application of sweep generator. 7

7. a) Draw the block diagram of successive approximation digital voltmeter and explain its working. 7

   b) Explain the IEEE 488 instrumentation bus with the help of its schematic representation. 7

8. Write a short note on any two of the following: 7 each

   a) Heaviside Cambell's bridge

   b) Frequency selective wave, analyzer

   c) Digital pH meter

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