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**RETEST EXAMINATION - 2019**

Semester : 4th (Old)

Subject Code : Et-402

**ELECTRONIC TEST AND MEASUREMENTS**

Full Marks - 70

Time - Three hours

The figure in the margin indicate full marks for the questions.

**Instructions :**

1. *All* questions of PART-A are compulsory.
2. Answer any *five* questions from PART-B.

**PART - A**

Marks - 25

1. Write the full forms : 1×5=5  
PMMC, VTVM, CRO, IEEE, DAC.
2. Choose the correct word : 10  
(a) DVMS are fast/slow devices.

[Turn over



- (b) Balanced bridge TVM uses two/four transistors.
- (c) Accuracy of analog multimeter is more/less than electronic multimeter.
- (d) A CRO uses electrostatic/electromagnetic focussing.
- (e) A CRT has three/four different types of anodes.
- (f) IEEE-488 bus has 86/24 signals.
- (g) RS-232 is a serial/parallel bus.
- (h) The cost of a DVM is more/less than its analog counterpart.
- (i) Using FET at the input of a TVM increases/decreases its sensitivity.
- (j) A listener is a device capable of transmitting/receiving data when addressed.

3. Fill in the blanks :  $1 \times 5 = 5$

- (a) Horizontal deflection plates are mounted \_\_\_\_\_.
- (b) The vertical deflection frequency in a CRO is \_\_\_\_\_ hertz.

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- (c) When two sinusoidal voltages of equal frequency and same phase are applied to the two sets of deflection plates, the pattern appearing on the screen is \_\_\_\_\_.
- (d) Blanking circuit in a CRO is used to blank out the \_\_\_\_\_.
- (e) Chopper type amplifiers are used in meters which measures voltages in the \_\_\_\_\_ voltage range.

4. State true or false :  $1 \times 5 = 5$

- (a) Electrons are emitted from the cathode in a CRT.
- (b) There are four deflection plates in a CRT.
- (c) A function generator can generate only sinusoidal signal.
- (d) Lissajous patterns can be used for accurate measurement of frequency.
- (e) Dual beam oscilloscopes use a single electron gun in the CRT.

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PART - B

Marks - 45

5. With the help of a proper block diagram explain the operation of a digital multimeter. 4+5=9
6. (a) Why are electronic multimeter preferred to VTVM ?
- (b) What is meant by 3 and 1/2 digit multimeter ?
- (c) State the advantages of DMM over a conventional multimeter. 3+3+3=9
7. (a) Draw a neat sketch of a CRT and label its different parts.
- (b) Explain horizontal and vertical deflection systems. 4+5=9
8. Using a block diagram explain the working principle of a function generator. 4+5=9
9. Write brief notes on resonant wave analyser and spectrum analyser. 4½+4½=9

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(4)

400(W)

10. (a) What is synchronisation in CRO ?

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(b) Explain how you will measure voltage, current and frequency using a CRO. 2+2+2=6

11. Give the detailed description of IEEE-488 bus with diagrams. 5+4=9



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(5)

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