END SEMESTER/RETEST EXAMINATION, 2020

SUBJECT- ELECTRONICS TEST AND MEASUREMENTS

SUBJECT CODE- ET-402

Full Marks: 70 (part A=25 + Part B=45)

TIME- 3 HOURS

PART-A

(ANSWER ALL QUESTIONS)

FIGURES IN THE MARGIN INDICATE FULL MARKS.

1) **WRITE THE FULL FORMS -** 5

PMC, VTVM, CRO, IE, DAC.

2) **CHOOSE THE CORRECT WORD** 10

a) An alogue meters are fast/slow devices.

b) Bridge rectifiers use two/four diodes.

c) Accuracy of analogue multimeter is more/ less than electronic multimeter.

d) A CRO uses electrostatic/electromagnetic focussing.

e) AC RT 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 analogue counter part.

i) Using FET at the input of aTVM increases / decreases its sensitivity.

j) Alistener is a device capable of transmitting/receiving data when addressed.

3) **Fill in -** 5

a) Vertical deflection plates are mounted _____.

b) The horizontal deflection frequency in a CRO is _____ hertz .

c) When two sinusoidal voltages of equal frequency and same phase are applied to the two sets of deflection plates the patterns appearing on the screen is_____.

d) Blanking circuitin 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 -** 5

a)Thermionic emissions occur from the cathode in a CRT.

b) T here are two pairs of deflection plates in a CRT.

c) A function generator can generate only sinusoodal signal.

d) Lissajous patterns can be used for accurate measurement of frequency.

e) Dual beam oscilloscopes use a single electron gun in the CRT.

PART B

Answer any five questions

5) With the help of a proper blocking diagram explain the working of a resonant wave analyser. 4+5=9

6) (a) With the help of a circuit diagram explain how a TVM works

(b) Why is FET used at the input of some multimeters?

(c) State the advantages of DMS. 4+2+3=9

(7) (a) Draw the block diagram of a CRO and label its different parts.

(b) Explain horizontal and vertical deflection system. 4+5=9

(8) Using a block diagram explain the working principle of a function generator. 4+5=9

(9) Write a brief note on spectrum analyser with proper diagram. 4+5=9

10) (a) What is synchronisation in CRO? 3

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

11) What is a bolometer? Explain briefly with a diagram. 4+5=9

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