CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Regular) - November- 2023
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
(Common for ECE, CSE)

[Time: 3 Hours]   [Max. Marks: 70]

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A   (20 Marks)

1. a)	What are the types of Errors in measuring instruments?	[2M]
b)	Define Resolution and Precision of an instrument.	[2M]
c)	Write the applications of spectrum analyzer.	[2M]
d)	What is Harmonic Distortion?	[2M]
e)	Define Deflection Sensitivity of a CRT.	[2M]
f)	What are the types of CRO Probes?	[2M]
g)	Define Active and Passive transducer.	[2M]
h)	Draw the block diagram of Synchros.	[2M]
i)	Write the two conditions to be satisfied to make an a.c bridge balance.	[2M]
j)	Draw the block diagram of Data acquisition system.	[2M]

PART-B   (50 Marks)

2.	Explain the basic principle of a Shunt type Ohmmeter.	[10M]

OR

3.	With relevant diagram, explain the working of True RMS Responding Voltmeters.	[10M]

4.	Draw the block schematic of AF wave analyzers and explain the principle of working.	[10M]

OR

5.	Discuss Square Wave and Pulse Generator with neat block diagrams.	[10M]

6.a)	Describe the Measurement procedure of Lissajous patterns with one example.	[3M]
b)	Explain the operation of Digital CRO with neat block diagram.	[7M]

OR

7.	Explain the internal structure of CRT and describe the principle of Electrostatic Focusing.	[10M]

8.a)	Draw the diagram of LVDT and explain its operation.	[7M]
b)	Write the applications of Piezoelectric Transducer.	[3M]

OR

9.	Explain the working principle of Gyroscope and summarize its application.	[10M]

10.	What is double Kelvin bridge? Derive the expression for the unknown resistance.	[10M]

OR

11.	With help of neat diagram, explain the working of any one type of Humidity measuring instrument.	[10M]

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