

Code No: 138FY**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year II Semester Examinations, September - 2020****ELECTRONIC MEASURING INSTRUMENTS****(Common to CE, ME, EIE)****Time: 2 Hours****Max. Marks: 75****Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) A voltmeter having a sensitivity of $15 \text{ k}\Omega/\text{V}$ reads 80V in its 100V scale when connected across an unknown resistance R_x . The current through the resistor is 1.8 mA . Determine the % error due to loading effect.
- b) Explain the working principle of PMMC movement with the help of equations. [7+8]
2. Draw the block diagram of multimeter and explain its operation for the measurement for voltage, current and resistance. [15]
- 3.a) Draw the block diagram of fundamental suppressions harmonic distortion analyzer and explain its principle of operation.
- b) Describe the operation of power analyzer. [10+5]
- 4.a) Estimate the value of a minimum detectable signal (MDS) of a Spectrum analyzer with a NF of 25dB using 1KHz 3dB filter.
- b) Explain about the Video signal generators. [5+10]
5. Discuss the working of the Dual beam oscilloscope. [15]
- 6.a) With necessary block diagram, explain the function of differential voltmeter.
- b) Explain briefly about the Vertical amplifier. [7+8]
7. Explain principle of operation of galvanometric recorder with the help of suitable diagram. State an advantages and disadvantages. [15]
- 8.a) Describe the operation of Piezo-electric transducer with neat sketches.
- b) A platinum thermometer has a resistance of 100Ω at 25°C .
 - i) Find its resistance at 65°C , if the platinum resistance temperature co-efficient of $0.00392/\text{C}$.
 - ii) If the thermometer has a resistance of 150Ω , calculate the temperature. [10+5]

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