Exam No: _____

GANPAT UNIVERSITY
B. TECH SEM: V (BM&I) CBCS REGULAR EXAMINATION– NOV-DEC 2016
2BM502 ELECTRONICS MEASUREMENT AND INSTRUMENTATION

TIME: 3 HRS **TOTAL MARKS: 60**

Instructions: (1) This Question paper has two sections. Attempt each section in separate answer book.

(2) Figures on right indicate marks. Conventional terms and notations are used.

(3) Be precise and to the point in answering the descriptive questions.

SECTION: I

Q.1 (10)

(a) Define following terms: (3)

a) Accuracy
b) Precision
c) Resolution

(b) Given expected voltage value across a resistor is 80V. The measurement is 79V. Calculate absolute error , % of error , relative accuracy , % of accuracy (3)

(c) Explain Ramp type DVM in detail. (4)

OR

Q.1 (10)

(a) Given a 600 V voltmeter with accuracy ±2% full scale. Calculate limiting error when the instrument is used to measure a voltage of 250V? (3)

(b) Explain the Simple Frequency counter. (4)

(c) Explain Staircase Ramp type DVM. (3)

Q.2 (10)

(a) Explain electrophoretic Image display. (3)

(b) Explain True RMS responding voltmeter. (3)

(c) Explain X-Y Recorder in detail. (4)

OR

Q.2 (10)

(a) Differentiate between Active display and passive display. (3)

(b) Explain Kelvin Bridge in detail. (3)

(c) Explain Magnetic tape type recorder in detail. (4)

Q.3 Write short note on following. (10)

(a) Q meter. (6)

(b) Vector Impedance meter. (4)

SECTION: II

Q.4		**(10)**
(a)	Derive the equation for deflection D on the CRT screen. Also write equation for deflection sensitivity and deflection factor.	**(5)**
(b)	Enlist CRT features and explain each of them in briefly.	**(3)**
(c)	Define: luminescence. Write about the factors affecting luminescence.	**(2)**

OR

Q.4		**(10)**
(a)	Explain principle of secondary emission in Analog storage oscilloscope. How it is used to construct variable persistence oscilloscope.	**(4)**
(b)	Describe working of sweep generator drawing suitable circuit diagrams.	**(3)**
(c)	Draw block diagram of Sampling Oscilloscope with output waveforms and explain its working.	**(3)**

Q.5		**(10)**
(a)	Draw block diagram of DSO. Write difference between: ASO and DSO.	**(3)**
(b)	Enlist various types of A to D converters and explain any two in brief.	**(5)**
(c)	How grounding and shielding is important in electronic circuits.	**(2)**

OR

Q.5		**(10)**
(a)	Draw and explain the various types of multi-channel digital acquisition systems.	**(5)**
(b)	Explain the working of frequency division multiplexing giving suitable example.	**(5)**

Q.6	Write Short note on following.	**(10)**
(a)	Explain the technique of Period Measurement.	**(4)**
(b)	Spectrum analyzer.	**(6)**

----------END OF PAPER----------