Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-1st / 2nd (SPFU) EXAMINATION- WINTER 2015

DE - SENIESTER-1 /2 (SFFU) EAAMINATION- WINTER 2015				
	bject Code: ENG006 bject Name: Measurement and Instr	Date: 01/01/2016 umentation		
	me: 10:30am to 01:00pm tructions:	Total Marks: 70		
PART I : OBJECTIVE SECTION INSTRUCTION: Question no.1 to 25 carry 1 mark and 26 to 30 carry 2 marks.				
1	The principle of operation of LVDT is base a)Self Inductance b)Mutual Inductance	d on the variation of c)Reluctance d)Permanence		
2	RTD is used for a)Temperature Measurement b)Humidity Measurement	c) Force Measurement d)Displacement Measurement		
3	Flow Measurement is done by using a)Venturi meter b)Hygrometer	c) LVDT d)RTD		
4	The torque in induction wattmeter due to a) Capacitive current b) Electrostatic effect	c)Hall effect d)Eddy Current		
5	Capacitance Transducer contents a)Pressure into a displacement b)Displacement into voltage	c) Capacitance into voltaged)Strain into voltage		
6	Watt is Unit of a)Charge b)Resistance	c) Current d)Power		
7	Velocity is defined as that a)Length/time b)Work/time	c) Mass*time d)Mass*velocity		
8	Random error is also known as a)Instrumental error	c) Observational error		

d)None of the above

b)Environmental error

Systematic error are a)Instrumental error c) Random error b)Environmental error d)both a & b 10 In CRO the time base signal is applied to a)Y plate c) Either X or Y plate d)Both X & Y plate b)X plate 11 Full form of the CRO a)Cathode Ray Oscilloscope c)Cathode Ray Oscillator b)Carbon Ray Oscillator d)Carbon Ray Oscilloscope 12 Which quantity measure the multimeter a)Voltage c) Current b)Resistance d) All of the above 13 Advantage of oscilloscope over multimeter is that a)We can measure accurate value of voltage c) We can see the wave shape of voltage b)We can measure accurate value of current d)We can measure accurate resistance 14 Induction wattmeter can be used in a)AC circuit only c)Both AC & DC circuit b)DC circuit only d)AC 3 phase only 15 In a strain measuring using a strain gauge, the output is, a)Voltage c) Resistance b)Impedance d)Either a or b 16 Which one of the following effects is used in measuring power? c)Induction a)Seeback b)Ferrari d)Hall 17 Voltmeter using thermocouple measure a)rms value c) Average value b)Peak value d)Peak to peak value 18 In measurement using CRO Lissajous patterns are used to c) Measure impedance a)Measure magnitude of peak voltage b)Measure frequency d)Measure current 19 Transducer Convert a)Physical quantity into electrical quantity c) Mechanical energy to electrical energy b)Electrical energy to mechanical energy d)Electrical form to displacement

20	Strain gauge, LVDT, and thermocouple are e a)Active Transducers b)Passive Transducers	xample of c) Analog Transducers d)Primary Transducer
21	Piezo Electric transducers are	N Die ital toeren de san
	a)Passive transducerb)Inverse transducer	c) Digital transducerd) Pulse transducer
22	Which statement is true for thermocouple i)Thermocouple are cheaper than the ii)They used for precision work as ac a)Only i b)Only ii	
23	Hygrometer used for a)Pressure Measurement b)Humidity Measurement	c) Flow Measurement d)Displacement Measurement
24	The household energy meter is a)An indicating instrument b)An integrative instrument	c) A recording instrument d)None of the above
25	Single phase energy meters measure electric a) kW b) joule	energy in c) kWh d) None of the above
26	No. of Significant figures in 302.10V a)3 b)2	c) 5 d)4
27	Magnetic flux density has the dimensions a) $MI^{-1}T^{-2}$ b) $M^{-1}I^{-2}T^{-2}$	c) MI ⁻³ T ⁻² d) MI ⁻¹ T ⁻³
28	If the vertical sensitivity is set to 0.5 voltage per division and wave occupies 4 division then peak to peak voltage is	
	a)4 v b)5 v	c) 20 v d)2 v
29	When a capacitor is connected to the terminal low resistance initially and finally come to it a) short circuited b) all right	

- Two resisitor a and b are connected in series with a=28.7ohm and b=3.624ohm. What is total resistance to the appropriate number of significant figure a)32.324 ohm c) 32.3 ohm b)32.32 ohm d)32 ohm
- **PART 2: SUBJECTIVE SECTION**

Attempt Any Five questions:

35 Marks

- **Q-1** Draw and explain Schematic diagram of CRO.
- Q-2 Explain different types of Measurement errors in details.
- **Q-3** Define:
 - (1) Resolution (2) Accuracy (3) Sensitivity (4) Precision
 - (5) Dimensions (6) Absolute Unit (7) Dead Zone
- **Q-4** Explain LVDT.
- **Q-5** What are the advantages of S.I Units?
- **Q-6** Explain Classification of Transducers in details.
- **Q-7** Explain different applications of Digital Multimeter.