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C		Reg. No.:							
Question Paper Code: 53U02									
M.E. DEGREE EXAMINATION, NOV 2018									
Third Semester									
Structural Engineering									
15PSE302 – EXPERIMENTAL TECHNIQUES AND INSTRUMENTATION									
(Regulation 2015)									
Duration: Three hours Maximum: 100 Mark							0 Marks		
Answer ALL Questions									
PART - A (5 x $1=5$ Marks)									
1.	A may be defined as any instrument or device that is employed to CO1- R measure the linear deformation over a gauge length.								
	(a) Hydraulic jack	(b) Strain Gaug	e (c) Comb	ined lever	(d) Dia	l Indicato	r	
2.	are instruments used to record and measure earthquakes. CO2								
	(a) Seismometer	(b) Seismograp	h (c) Seism	ogram	(d) Acc	elerograp	ph	
3.	The range ability of t					CO	3- R		
	(a) 10:1	(b) 15:1	(c	20:1		(d) 25:1	l		
4.	The most commonly	used flow sensor is					CO	4 -R	
	(a) Venturi meter	(b) Orifice meter (c) Both (a) and ((b)	(d) None	of the ab	ove	
5.	A technique used to determine a structures vibration characteristics CO5- R								
	(a) Similitude) Similitude			(b) Finite element method				
	(c) Modal analysis		(d	l) Orien	ted analysi	.S			

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PART - B (5 x 3= 15 Marks)

6. What is Dummy gauge?

7. Define Similitude?

8. What do you mean by wind tunnel? CO3-U

9. Define half-cell. CO4-U

$PART - C (5 \times 16 = 80 \text{ Marks})$

11. (a) Explain photo elasticity. Write it's advantage and its CO1- U (16) characteristics.

Or

- (b) Explain with neat sketches the fibre optic sensor systems. CO1- U (16)
- 12. (a) Explain briefly the working principle of LVDT. CO2-U (16)

Or

- (b) Explain briefly about Data Acquisition System. CO2-U (16)
- 13. (a) Explain vibration-meter and vibration-analyzer. CO3-U (16)

Or

- (b) Explain the working principle of CRO CO3-U (16)
- 14. (a) Describe the various types of strengthening techniques adopted for CO4-U structural distress. (16)

Or

- (b) Describe the construction and uses of half-cell. CO4-U (16)
- 15. (a) Explain any two non destructive techniques. CO5-U (16)
 Or
 - (b) What are the crack measurement technique and how to observe the CO5-U development of cracks. (16)