SEAT	No.
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[15/A-12]

Sardar Patel University

S.Y.B.Sc (Semester-IV) Examination 2018

Day & Date: Tuesday, 17/04/2018 Time: 10:00 am to 12:00 noon Subject: INSTRUMENTATION Paper No. US04EELE02

Note:- F	igures to the right indicate marks.	Marks: 70		
- 1	Choose the correct answer.		[10]	
Q-1	The rms value of the induced emf in the whole of primary winding is			
1.		b) 4.44fN _A B _m A		
	a) 4.44fN ₂ B _m A	d) 4.44fN ₁ B _m A		
	c) 4.44fN ₁₂ B _m A			
2.	The value of form factor is	b) 1.11		
	a) 1.01	d) 11.1		
	c) 1.21			
3.	A can be defined as a static device which helps in the transformation of electric power in one circuit to electric power of the same frequency in another circuit.			
	a) transducer	b) transformer		
	c) rectifier	d) regulator		
_	The abbreviation SSR stands for			
4.		b) solid state relay		
	a) simple solid relay	d) solid standard relay		
	c) solid system relay	ferrors and true value is obtained by applying		
5.	correction to the indicated value.			
		b) correctness		
	a) Accuracy	d) Precision		
	c) Error as the ratio of the O/p signal	to a change in the input signal.		
6.		b) Precision		
	a) Sensitivity	d) Error		
	c) Accuracy	ed in to electrical signal is called as a		
7.		b) rectifier		
	a) transducer	d) regulator		
	c) transformer	turies machanical displacement to		
8.		ucer for converting mechanical displacement to		
	an electrical output.	b) capacitive transducer		
	 a) wire wound potentiometer 	d) piezoelectric transducer		
	c) Inductive transducer	d) prezoelectric transactor.		
9.	LVDT windings are wound on	 •		
	a) ferrite	b) copper		
	c) aluminum	d) steel sheet		
10.	LVDT works on the principle of			
277	a) variable mutual induction	b) variable capacitance		
	c) variable resistance	d) variable self-induction		

(P.T.O)

ų.	CZ Answer in snort. (Any TEN)		[20]
1.	•	What is the working principle of transformer?	,
2.		Draw equivalent circuit of transformer.	
3.		Give the ideal transformer characteristics on no load circuit.	
4.		Give the application of relays.	
5.		Differentiate between NO and NC.	
6.	ı	Draw the circuit diagram of normally open and normally closed relay.	
į 7.	ı	Give the block diagram of transducer.	3
8.		Explain active transducer and passive transducer.	
9.		Explain Analog and Digital transducer.	
10	}	List out the advantages of LVDT.	
11		What is encoder?	
12	•	Give the types of displacement transducer.	
Q-3		Explain the principle, construction and working of the transformer.	[10]
		OR	
		Write a short note on shell type transformer.	[10]
Q-4	Α	Write a note on Construction and working of relays.	[05]
	В	Write a short note on contractors.	[05]
Q-4	С	Explain Reed-Relay-Coupled SSR's with necessary diagram.	[05]
	D	Explain Transformer Coupled SSR's with necessary diagram.	[05]
Q-5	,	Explain dynamic characteristic of transducer.	[10]
		OR	
		Explain static characteristic of transducer.	[10]
Q-6	Α	Explain the working of LVDT with labeled diagram.	[05]
	B	Explain capacitive type transducer with diagram.	[05]
		OR	
	С	Write a short note on Potentiometric resistance transducer.	[05]
	D	Explain operation of Piezo-electric transducer.	[05]
		N .	