Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

Diploma Engineering - SEMESTER-II • EXAMINATION - SUMMER • 2015

Subject Code: 3321702 Date: 28-05-2015

**Subject Name: Instrumentation Devices Materials** 

Time: 10:30 am - 01:00 pm Total Marks: 70

**Instructions:** 

1. A	ttempt	all o	questions.
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- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- 4. English version is considered to be Authentic.

Q.1 Answer any seven out of ten.  1. Define the term conductivity. 2. List out properties of inductor. 3. Name the semiconductor material used for IR and LASER. 4. List electrical properties of semiconductor. 5. Classify different types of Resistor. 6. Write a short note on P-type semiconductor. 7. Compare Intrinsic and Extrinsic Semiconductor. 8. Give standard colour code for Resistors. 9. What is capacitor? List different types of capacitor. 10. Write a note on variable Inductor.  Q.2 (a) Give application of Ferromagnetic material. OR (a) Give application of Ferrimagnetic material. OR (b) List material used in Photoconductive cell. OR (c) Define Diamagnetic material & Give its properties. OR (d) Explain Photo emissive cell. OR (d) Explain Photo Conductive cell. OR (d) Explain Photo Conductive cell. OR (d) Explain Photo Conductive cell. OR (e) Define Paramagnetic material & Give its properties. OR (d) Explain Photo Conductive cell. OR (e) Define Paramagnetic material & Give its properties. OR (d) Explain Photo emissive cell. OR (e) Define Paramagnetic material & Give its properties. OR (d) Explain Photo Conductive cell. OR (e) Define Paramagnetic material & Give its properties. OR (d) Explain Photo Explain Photo emissive cell. OR (e) Explain Mechanical Relay.
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(a) Explain Mechanical Relay. OR
(a) Explain Mechanical Relay. 03
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ALCOHOL AND ALCOHO
(b) Write a short note on Pitot tube.
OR
(b) Explain Electrolytic capacitor in short. 03
(c) Explain Photo voltaic cell.
OR
(c) Write a short note on venturi tube.
(d) Write a short note on Photo transistor.
OR

	(d)	Explain Solid state relay.	04
Q.4	(a)	List soft and hard magnetic material.	03
		OR	05
	(a)	Write a short note on Photo diode.	03
	(b)	What is thermistor? Explain NTC & PTC.	04
		OR	
	(b)	Explain Electromagnetic Relay.	04
	(c)	List the colour codes for the extension leads of different types of Thermocouples.	07
Q.5	(a)	Write a note on flow nozzle & give its working principle.	04
MC.	(b)	Give comparison of conductor, semiconductor and insulator.	04
	(c)	List factor affecting the Resistivity.	03
	(d)	Write a short note on orifice plate.	03
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## ગુજરાતી

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	٩.	કન્ડ ક્ટીવિટી ની વ્યાખ્યા આપો.	
	₹.	ઇન્ડકટર ના ગુણધર્મો ના નામ આપો.	
	3.	LÅSER અને IR મા વપરાતા સેમિકન્ડક્ટર મટીરીયલ ના નામ આપો.	
	₹.	સમિકન્ડક્ટર ળી ઇલેક્ટ્રિકલ ગુણધર્મો ળા ળામ ખાપો.	
	ч.	રેઝીસ્ટર ના પ્રકારો નુ વર્ગીકરણ કરો.	
	s.	P-ટાઇપ સેમિકન્ડક્ટર ઉપર ટૂંક નોંધ લખો.	
	૭.	ઇટ્રિંસીક અને એક્સ્ટ્રિંસીક સેમિકન્ડક્ટર વચ્ચે તુલના કરો.	
	۷.	રેસીસ્ટર નુ સ્ટાન્ડર્ડ કલર કોડ આપો.	
	Ŀ.	કેપેસીટર એટલે શું ? જુદા જુદા પ્રકારો ના નામ આપો.	
	90	વેરીચેબલ ઇન્ઠકટર ઉપર ટૂંક નોંધ લખો.	
પુક્ષ. ર	અ	ફેરોમેગ્નેટીક મટીરીયલ ની ઉપયોગીતા લખો.	03
		અથવા કેરીમેગ્નેટીક મટીરીયલ ની ઉપયોગીતા લખો.	03
	અ	ફેરામે અટાક મેટારાયલ માં ઉપયોગાતા લખા. ફોટ્રો કન્ઠક્ટીવ સેલ માં વપરાતા મટીરીયલ ના નામ આપો.	
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	8	પેરામેઝ્નેટીક મટીરીચલ ની વ્યાખ્યા આપો અને તેના ગુણધર્મો લખો.	08
	s	ફોટો ઇમીસીવ સેલ સમજાવો.	٥٧
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<b>4</b> c		• અથવા	
	અ	મેકેનિકલ રીલે સમજાવો.	03
	બ	પિટોટ ટ્યુબ ઉપર ટૂંક નોંધ લખો.	03
		. અથવા	
	બ	ઇલેક્ટ્રોલાઇટીક કેપેસીટર ટૂંકમાં સમજાવો.	03
	5	ફોટો વોલ્ટેઇક સેલ સમજાવો.	08
		અથવા	
	8	વેંયુરી ટ્યુબ ઉપર ટૂંક નોંધ લખો.	08

	Š	ફ્રોટી ટ્રાન્સિસ્ટર ઉપર ટ્રંક નોંધ લખો.	OX
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	\$	સોલિડ સ્ટેટ રીલે સમજવો.	OX
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	અ	ફોટી ડાયોડ ઉપર ટૂંક નોંધ લખો.	03
	બ	થર્મીસ્ટર એટલે શું ? NTC અને PTC સમજાવો.	٥x
		અથવા	
	બ	ઇલેક્ટ્રોમેગ્નેટીક રીલે સમજાવો.	OX
	8	જુદા જુદા પ્રકાર ના થર્મોકપલ માટે ની એક્સટેંશન લીડ માટે ના કલર કોડ નું	09
		લ <del>ૄ</del> ંસ્ટ આપો.	
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	8	રેઝીસ્ટીવીટી ને અસર કરતા પરિબળો નું લિસ્ટ આપો.	03
	5	ઓરિફીસ પ્લેટ ઉપર ટૂંક નોંધ લખો.	03
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