GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – VI • EXAMINATION – SUMMER 2015

Subject Code: 3361108　　　　　　　　　　**Date:11-05-2015**

Subject Name: Robotics & Autotronics

Time: 10:30 AM TO 1:00 PM　　　　　　　　　　**Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make Suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of only simple calculator is permitted in Mathematics.**
6. **English version is authentic.**

Q.1　　　Answer any seven out of ten. દશમાંથી કોઇપણ સાતના જવાબ આપો.　　**14**

1.　What is the function of rain sensor?
૧.　re[n seNsr nu kayR xu haey 0e?

2.　What is ABS?
૨.　ABS Ae3le xu?

3.　Give the applications of robot.
૩.　raebae3 nl]pyaeglta lqae.

4.　What is SCARA?
૪.　SCARA Ae3le xu?

5.　How does Immobilizer system works?
૫.　{mmaeba[l slS3m kevl rlte kam kre 0e?

6.　What is 'Joints' in robot?
૬.　raebae3 ma '=e[N3s' Ae3le xu?

7.　Give the name of different types of sensors.
૭.　Alg Alg pkar na seNsr na nam Aapae.

8.　What is difference between servo & non servo control system?
૮.　svaRe Ane naensvaRe k>3eal slS3m vCcenae tfavt xu 0e?

9.　Define the 'Robot'.
૯.　raebae3 nl VyaQya Aapae.

10.　Give the limitations of robot.
૧૦.　robo3 nl myaRda lqae.

Q.2　(a)　What are basic requirements of sensors?　　　　　**03**
પ્રશ. ૨　(અ)　seNsr nl muQy jruiryat xu 0e.　　　　　　　**03**

OR

(a)　Give the short note on Hot wire Anemometer.　　　　**03**
(અ)　Hae3 vayr Aenemaeml3r pr 3U>knae>2 lqae.　　　　**03**

(b)　What are the functions of PLCs?　　　　　　　**03**
(બ)　PLCs nu kayR xu haey 0e?　　　　　　　　　**03**

OR

	(b)	Distinguish the Mechanical & Electrical measurement.	**03**
	(અ)	imkeinkl Ane {lek3\lkl mapn vCcenae wed Aapae.	૦૩
	(c)	Draw & Explain block diagram of control systems.	**04**
	(ક)	k>3ae\l isS3m nae Blaek Dayag/am daerI ne sm=vae.	૦૪

OR

	(c)	Give the short note on variable structure control.	**04**
	(ક)	veiryebl s>rcna k>3\ael pr 3U>knae>2 Aapae.	૦૪
	(d)	What is Actuators? Explain in details.	**04**
	(ડ)	AekCyuAe3r Ae3le xu? ivStar 4I sm=vae.	૦૪

OR

	(d)	Explain Robot path control.	**04**
	(ડ)	raebae3 pa4 k>3\ael sm=vae.	૦૪

Q.3	(a)	Explain Servo & Non Servo control systems.	**03**
પ્રશ્ન. 3	(અ)	svaRe Ane naensvaRe k>3\eal sIS3m sm=vae.	૦૩

OR

	(a)	Give the short note on Microprocessor based control system.	**03**
	(અ)	Maa{k/aep/aesesr bez\D k>3ae\l isS3m pr 3uknae>2 lqae.	૦૩
	(b)	Distinguish different types of motors & their drives.	**03**
	(અ)	Alg Alg p/kar nI mae3rae t4a tena D<a{Vz vCcenae wed Aapae.	૦૩

OR

	(b)	Explain robot as work cell control with LAN.	**03**
	(અ)	raebae3 nu LAN sa4e vkR xel k>3ae/l sm=vae.	૦૩
	(c)	Explain structure of the robot.	**04**
	(ક)	raebae3 nI s>rcna sm=vae.	૦૪

OR

	(c)	Explain ABS in automobile field.	**04**
	(ક)	Aae3aemaeba{l iFLD ma ABS sm=vae.	૦૪
	(d)	Describe the safety rules in robot handling.	**04**
	(ડ)	raebae3 heNDII>g na sef\i3 ma3e na inymae lqae.	૦૪

OR

	(d)	What is the need of robot maintenance? Explain different types of it.	**04**
	(ડ)	raebae3 me{N3enNs nI jrurlyat xu 0e? tena Alg Alg p/kar sm=vae.	૦૪

Q.4	(a)	How capacitive type tachometer does works?	**03**
પ્રશ્ન. ૪	(અ)	Kepeisi3v p/kar nu 3ekaeml3r kevI rIte kam kre 0e?	૦૩

OR

	(a)	Explain working of Thermocouple.	**03**
	(અ)	4maeRkpl nI kayR p2@tI sm=vae.	૦૩
	(b)	Explain working of central lock system in automobiles.	**04**
	(અ)	Aae3aemaeba{l ma> seN3/\l laek isS3m sm=vae.	૦૪

OR

	(b)	Give the short note on parking assistant system.	**04**
	(અ)	paikR>g AaisS3Ns isS3m pr 3u>knae2 lqae.	૦૪
	(c)	Give the short note on 'robot programming methods'.	**07**

	(ร)	raebae3 nI p/aeg/aml>g nI rItae pr 3u>knae>2 lqae.	૦૭
Q.5	(a)	Give the short note on 'Electronic power system'.	**07**
પ્રશ. ૫	(અ)	{lek3/\aeink pavr isS3m pr 3u>knae>2 lqae.	૦૭
	(b)	What are the common troubles & remedies in robot operations?	**07**
	(બ)	raebae3 na Aaeprexn ma> 4tI samaNy muXkelIAea t4a remliDz k[k{ 0e?	૦૭
	(c)	Explain Robot configuration.	**03**
	(ร)	raebae3 nu kaeiNfGyurexn sm=vae.	૦૩
	(d)	Explain various types of movements.	**03**
	(ડ)	Alg Alg p/kar nI muvmeN3 sm=vae.	૦૩

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