

Reg.No. _____

**Karunya UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – April/May – 2017**Code : AUTOMOTIVE SENSORS AND INTELLIGENT SYSTEMS****Duration : 3hrs****Sub. Name : 14EI3030****Max. marks : 100****ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	With neat diagram explain the working principle of Internal combustion engine	CO1	10
	b.	Write the disadvantages of conventional engine management system and with neat sketch explain the operation of feedback based engine management system.	CO1	10
(OR)				
2.	a.	With neat sketch explain the working principle of typical electronic engine control system.	CO1	10
	b.	How do measure crankshaft position using magnetic type based sensor with neat sketch.	CO2	10
3.	a.	With neat diagram explain the construction and working principle of resistive based positive temperature sensor.	CO2	10
	b.	Discuss about open loop and closed loop control system and also explain the P,I,D control mode operations.	CO1	10
(OR)				
4.	a.	Illustrate the operation and working principle of analog system in automobile.	CO1	10
	b.	With neat sketch explain the working principle of typical digital engine control system.	CO2	10
5.	a.	Discuss the exhaust Gas Oxygen measurement method using suitable sensor.	CO2	15
	b.	Explain the importance of variable valve timing control	CO2	5
(OR)				
6.	a.	Distinguish between conventional and cruise control system and explain the construction and operation of digital cruise control system	CO2	20
7.	a.	With neat sketch explain the working principle of antilock braking system		10
	b.	Discuss about sensors for occupant safety	CO2	10
(OR)				
8.	a.	Explain in detail about intelligent technique used in advanced cruise control system	CO2	15
	b.	Write short note on EGR control	CO2	15
		<u>Compulsory:</u>		5
9.	a.	With neat diagram explain sensor based safety control system and its merits	CO3	15
	b.	Write short note on suspension system	CO3	5

ALL THE BEST