Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Winter Examination-2019

Subject Name: Vehicle Control System and Management

Subject Code: 4TE07VCM1 Branch: B.Tech (Automobile)

Semester : 7 Date : 22/11/2019 Time : 10:30 To 01:30 Marks : 70

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 Attempt the following questions:

a) The service brakes employed in cars are generally operated **(1)**
(A)Hydraulically (B) Pneumatically
(C) Mechanically (D) None of these

b) The most common used supplementary restrain system(SRS) component is **(1)**
(A) Seat belt (B) Brake
(C) Steering (D) Airbags

c) A TCS in automobiles controls the **(1)**
(A) Vibrations on the steering wheel
(B) Engine power during acceleration
(C) Torque transmitted by the tyres to the road
(D) Stopping distance in case of emergency

d) Air flow sensor is an example of……sensor. **(1)**
(A) Pressure (B) Magnetic
(C) Resistance (D) Temperature

e) Piezoelectric accelerometer it is a type of **(1)**
(A) Knock sensor (B) Controllers
(C) Actuator (D) Air flow sensor

f) Titanium sensor it is type of **(1)**
(A) Pressure sensor (B) Temperature sensor
(C) Oxygen sensor (D) None

g) Which of the following is not a component of steer by wire technology **(1)**
(A) Hand wheel sensors (B) Environment sensors
(C) Engine control module (D) Throttle position sensor

h) Full form of ANC **(1)**
(A) Automatic Noise Control (B) Active Noise Control
(C) Adaptive Noise Control (D) Automatic Navigation Control

i) What term describes the maximum expected error associated with a measurement **(1)**

or a sensor

(A) Range (B) Accuracy

(C) Resolution (D) Precision

j) The main function of a master cylinder is to **(1)**

(A) Adjust the extent of brake pedal free play

(B) Boost the force applied to brake pedal

(C) Convert brake pedal force into hydraulic pressure

(D) All of these

k) PASS stands for **(1)**

(A) Power automated steering system (B) Power adaptive steering system

(C) Power air steering system (D) Power assisted steering system

l) Full form of ANC **(1)**

(A) Automatic Noise Control (B) Active Noise Control

(C) Adaptive Noise Control (D) Automatic Navigation Control

m) In the linkage type of power steering system, the piston rod is attached at one end to **(1)**

(A) Tie rod (B) Connecting rod

(C) Spool valve (D) None of the above

n) The braking control type traction control system (TCS) generally operates in the speed range of **(1)**

(A) Less than 40 K/Hr (B) Less than 20 K/Hr

(C) Less than 60 K/Hr (D) Less than 80 K/Hr

Attempt any four questions from Q-2 to Q-8

Q-2 **Attempt all questions**

a) Name the various types of intelligent transport system and explain any two with their limitations in terms of intelligence. **(07)**

b) Discuss collision warning system and how it is useful to avoid accidents on roads **(07)**

Q-3 **Attempt all questions**

a) Explain ACC technology and write its benefits of safety and security for driver. **(07)**

b) Discuss the features of thermal management system of automobile. **(07)**

Q-4 **Attempt all questions**

a) Compare hybrid cars and electric cars and how they are called as a future cars. **(07)**

b) Write the various points of anti-theft technology for better provision of security system in vehicle. **(07)**

Q-5 **Attempt all questions**

a) Explain the role of various components of chassis management system. **(07)**

b) Define actuators and explain any one actuator with its specification, uses & sensitivity. **(07)**

Q-6 **Attempt all questions**

a) Discuss layout of steer by wire technology. **(07)**

	b)	Discuss the role of oxygen sensor in automobile and explain any one oxygen sensor with neat sketch.	**(07)**
Q-7		**Attempt all questions**	
	a)	List out the various types of sensors associated with automobile, where and why they are installed in automobile.	**(07)**
	b)	Explain brake by wire technology and how its significance than conventional braking system.	**(07)**
Q-8		**Attempt all questions**	
	a)	Explain active suspension system and differentiate between conventional and active suspension system.	**(07)**
	b)	Explain collapsible and tillable steering column technology. Write its merits and demerits.	**(07)**