PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018-19 Examination

Semester: 8   Date: 01/05/2019
Subject Code: 03102452   Time: 10:30 am to 01:00 pm
Subject Name: Modern Automotive Control   System   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat and clean diagram.
4. Start new question on new page.

Q.1 Objective Type Questions   **(15)**

1 In standardized fault codes:
   (a) Digit 1, at the left-hand end, identifies the vehicle system.
   (b) The digit at the far-right hand end identifies the system.
   (c) All computer controlled vehicle systems must use them.
   (d) The identifying digits can appear in any order.
2 Stepper motors:
   (a) Open a valve which is then closed by a spring.
   (b) Can open and close valves because they can be reversed.
   (c) Are not suitable for use with computer controlled systems.
   (d) Operate at very high speed.
3 Which sensor plays a major role in the speed density method of air flow sensing.
   (a) The hot wire sensor.
   (b) The knock sensor.
   (c) The cylinder identification sensor.
   (d) The manifold absolute pressure sensor.
4 A breakout box:
   (a) Replaces the ECM for test purposes.
   (b) Permits tests to be performed at the ECM without back-probing.
   (c) Reads digital data because it is connected to the data bus of the ECM processor.
   (d) Needs only one connector to enable it to be used on any make of vehicle.
5 For voltage tests on sensor output the voltmeter is connected:
   (a) In series.
   (b) Between the sensor output terminal and the end of the cable that has previously been disconnected.
   (c) Between the signal terminal and earth.
   (d) Across the vehicle battery terminals.
6 Give the Full form of ABS.
7 Give the Full form of ROM.
8 Give the Full form of MAP sensor
9 Give the Full form of EMS.
10 Give the Full form of ECU.
11 An _____ sensor uses a light emitter and a light sensitive pick-up.
12 Fuel gallery pressure in a petrol injection system can be checked by means of a _____ gauge.
13 The _____ of the ECM computer is the part of memory where sensor data is held while the system is in operation.
14 Exhaust gas recirculation valves control the movement of exhaust gas from the exhaust system into the intake system to help reduce _____.
15 The piezoelectric generator effect is used in _____ sensor.

Q.2 Answer the following questions. (Attempt any three)   **(15)**

A. Describe Stability control system of vehicle.
B. Explain injection timing control in computer controlled diesel engine management systems with diagram.
C.   Explain Distributor-less ignition system.
D. Explain logic gates along with symbols and truth tables.

Q.3
    A. Enlist & explain types of actuators.   **(07)**
    B. Explain on board diagnostic in detail.   **(08)**

<p align="center">OR</p>

    B. Explain types of computer memories.   **(08)**

Q.4
    A. Describe Importance of Sensors. Explain combustion knock sensors.   **(07)**

<p align="center">OR</p>

    A. Enlist & Explain fundamental parts of a computer.   **(07)**
    B. Explain computer control of evaporative emissions.   **(08)**