

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C. U. SHAH UNIVERSITY

## Winter Examination-2019

**Subject Name: Automobile Engineering**

**Subject Code: 4TE06AEN1**

**Branch: B.Tech (Mechanical)**

**Semester: 6**

**Date: 20/09/2019**

**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                      (14)**

- a) The purpose of valve clearance is to
  - (A) Allow the valve to expand
  - (B) Allow the sliding of valve in the guide
  - (C) Ensure that the valve closes fully
  - (D) Ensure that the crankshaft is free to rotate
- b) On modern four stroke engines the exhaust valve opens just
  - (A) Before TDC
  - (B) After TDC
  - (C) Before BDC
  - (D) After BDC
- c) Two general types of tyres are
  - (A) Tube type and tubeless
  - (B) Solid and tubeless
  - (C) Air and pneumatic
  - (D) Split rim and drop centre
- d) The motion of the cam is transferred to the valves through
  - (A) Pistons
  - (B) Rocker arms
  - (C) Camshaft pulley
  - (D) Valve stems
- e) If the air-fuel mixture in a spark ignition engine is too rich, then air-fuel ratio is about
  - (A) 17:1
  - (B) 15:1
  - (C) 13:1
  - (D) 10:1
- f) In a single dry plate clutch, torsional vibrations are absorbed by
  - (A) Coil springs known as torsional springs
  - (B) Cushion springs
  - (C) Central hub



- (D) Clutch pedal
- g)** The calorific value of Diesel is about  
(A) 36.5 MJ/kg  
(B) 38.5 MJ/kg  
(C) 42.5 MJ/kg  
(D) 45.5 MJ/kg
- h)** The correct flow of power through the drive train is  
(A) Engine drive shafts, clutch, main shaft, counter shaft, final driven gear, wheels  
(B) Engine clutch, main shaft, counter shaft, final driven gear, drive shafts, wheels  
(C) Engine clutch, counter shaft, main shaft, final driven gear, drive shafts, wheels  
(D) Engine main shaft, counter shaft, clutch, final driven gear, drive shafts, wheels
- i)** The air gap between the central electrode and ground (or side) electrode of a spark plug is around  
(A) 0.2 mm  
(B) 0.5 mm  
(C) 1 mm  
(D) 1.5 mm
- j)** The tilting of the front wheels away from the vertical, when viewed from the front of the car, is called  
(A) Camber  
(B) Caster  
(C) Toe in  
(D) Toe out
- k)** For the same maximum pressure and temperature  
(A) Diesel cycle is more efficient than Otto cycle  
(B) Otto cycle is more efficient than Diesel cycle  
(C) Both Otto cycle and Diesel cycle are equally efficient  
(D) None of the above
- l)** In Diesel engines, the duration between the time of injection and the time of ignition is called  
(A) Spill cut-off  
(B) Delay period  
(C) Injection period  
(D) Ignition period
- m)** The most commonly used supplementary restraint system (SRS) component is  
(A) Seat belt  
(B) Brake  
(C) Airbag  
(D) Steering
- n)** A worm gear is used as the pinion for the rack and pinion type of steering gearbox, because it  
(A) Improves steering comfort when steering wheel is turned to effect small changes in the direction of forward motion  
(B) Allows the steering wheel to be turned by a greater amount when



