

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Automobile Chassis and Body Engineering

Subject Code: 4TE06ACB1

Branch: B. Tech (Automobile)

Semester: 6

Date: 25/04/2018

Time: 02:30 To 05:30

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 frontage of the vehicle which is visible to driver is known as
(a) Boot Space (b) Dashboard (c) Cab (d) Fascia
- B) The vertical distance between the floor to ceiling is known as
(a) Legroom (b) Headroom (c) Fascia (d) Boot Space
- C) The sum of all the dynamic forces in the direction of fluid flow, so it acts opposite to the direction of the object is known as
(a) Drag (b) Thrust (c) Weight (d) Lift
- D) The vertical body members that hold roof panel in place and protect in case of rollover is known as
(a) Pillers (b) Dash Board
(c) Bonnet (d) Floor Pan
- E) Which type of bus have more passenger compartment
(a) Classic type (b) Articulated bus
(c) Split level bus (d) Minibus
- F) The ____ center of gravity offers improved handling, response and control while ____ the possibility of rollover
(a) Higher, decreasing (b) Lower, increasing
(c) Lower, decreasing (d) None
- G) The panel (metal plate) directly below the bottom of doors supporting the floor and may be used to combine floor & body is known as
(a) Bonnet (b) Body sills (c) Quarter Panel (d) Bulker



- H) _____ can be improved by positioning the driver as high as possible in relation to the lower edge of windscreen
 (a) Forward Visibility (b) Downward Visibility
 (c) Rearward Visibility (d) None
- I) ABS (Anti-lock braking system) falls under the category of _____
 (a) Active safety (b) Passive safety
 (c) Both (a) and (b) (d) None of the above
- J) If occupant is placed close to windscreen the _____ is considerably improved but comfortable entry is adversely affected as dimension between pillar & seat is decreased requiring suitable shaping of the door, if possible
 (a) Forward Visibility (b) Downward Visibility
 (c) Rearward Visibility (d) None
- K) Experiments reveal that ___ percent of weight reduction can lead to __ to __ percent improvement in fuel usage.
 (a) 10, 4 to 6 (b) 12, 6 to 10
 (c) 12, 4 to 6 (d) 10, 6 to 8
- L) In the interior of car, the air flows through
 (a) Front foot wells (b) Grills on top of the bonnet
 (c) Front of the car (d) None
- M) The sum of all the dynamic forces on a body normal to the direction of external flow around the body is known as
 (a) Drag (b) Thrust
 (c) Weight (d) Lift
- N) _____ is achieved by increase in glass area required to maintain rear view vertical angle with back window
 (a) Forward Visibility (b) Downward Visibility
 (c) Rearward Visibility (d) None

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

Q-2

Attempt all questions

- a) Write a note on vehicle safety. Discuss in brief active safety and passive safety. (07)
 b) Write a brief note on heating and ventilation system in a vehicle. (07)

Q-3

Attempt all questions

- a) Define blind spot. Describe various methods to reduce blind spot in a car. (07)
 b) Discuss the requirements of the material in automotive design. Write down a note on materials used in car body construction. (07)

Q-4

Attempt all questions



- a) Draw and explain typical car body construction. (07)
- b) Explain types of metal section used in bus body. (07)

Q-5 Attempt all questions

- a) Define unibody structure of a vehicle. Write advantages of unibody structure design for a vehicle. (07)
- b) Draw the affinity diagram for a car dash board. (07)

Q-6 Attempt all questions

- a) Discuss in brief classification of bus bodies. (07)
- b) Explain the effects of different types of forces and moments acting on vehicle body. (07)

Q-7 Attempt all questions

- a) Explain driver visibility and methods for improving visibility. (07)
- b) Explain methods for paint and painting process for automobile body. (07)

Q-8 Attempt all questions

- a) Explain shear panel method for determining stress analysis and body load. (07)
- b) Discuss in brief various types of crash tests of a vehicle. (07)

