

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

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

# C.U.SHAH UNIVERSITY

## Summer Examination-2019

Subject Name: Automobile Chassis and Body Engineering

Subject Code: 4TE06ACB1

Branch: B.Tech (Automobile)

Semester: 6

Date: 20/04/2019

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.
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- Q-1                  Attempt the following questions:                  (14)**
- (a) What do you mean by aerodynamic resistance?                  (1)
- (b) Vertical component of the resultant of pressure distribution is called\_\_\_\_\_.                  (1)
- (c) What is chassis in vehicle?                  (1)
- (d) Give the passenger capacity of mini bus.                  (1)
- (e) Give the name of exterior car trim type.                  (1)
- (f) Draw force acting on a vehicle.                  (1)
- (g) What is SIAM indicate?                  (1)
- (h) What is Crashworthiness?                  (1)
- (i) In passenger seat, the seating angle range from\_\_\_\_\_.                  (1)
- (j) What is asymmetric loading in vehicle?                  (1)
- (k) What is GRP in vehicle body material?                  (1)
- (l) What do you mean by articulated vehicle?                  (1)
- (m) In military vehicle, driver's position must be as high as possible, why?                  (1)
- (n) Angle between seat rest and seat back must be obtuse. True or False?                  (1)

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

- Q-2                  Attempt all questions                  (14)**
- (a) Give brief about the importance of crumple zones provided in vehicle                  (03)
- (b) Explain unibody structure design for vehicle.                  (07)
- (c) Explain loading condition while acceleration and braking condition.                  (04)
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- Q-3                  Attempt all questions                  (14)**
- (a) Explain working of airbags used for safety with neat sketch.                  (07)



- (b) Explain Seat design for ride comfort. (07)
- Q-4** **Attempt all questions** (14)
- (a) Explain classification of commercial vehicle. (07)
- (b) Write short note on Safety aspect in design: Active and Passive safety. (07)
- Q-5** **Attempt all questions** (14)
- (a) Explain various body optimization techniques for minimum drag. (07)
- (b) Write about general design issue for bus manufactures and explain bus body regulations. (07)
- Q-6** **Attempt all questions** (14)
- (a) Explain types of body styling used for vehicle in market. (07)
- (b) Why crash test is required? Explain its procedure. (07)
- Q-7** **Attempt all questions** (14)
- (a) Explain methods for paint and painting process for automobile body. (07)
- (b) Explain water leakage test. (07)
- Q-8** **Attempt all questions** (14)
- (a) Write various Source of body noise and Explain method of elimination body noise. (07)
- (b) Explain FRP and GRP used in automobile design in detail. (07)

