

KADI SARVA VISHWAVIDHYALAYA
B.E. AUTOMOBILE Semester-V Nov/Dec-2016

Subject: AUTOMOBILE CHASSIS AND BODY ENGINEERING
Subject Code: AE506

Date: 22/11/2016
Time: 10:30 am to 01:30 pm
Total Marks: 70

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of Scientific calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **clearly**, the options you attempt along with its respective question number.
5. Use the last page of main supplementary of **rough work**.

SECTION-I

- Que:1** (A) Explain different aerodynamic forces and moments with their effects on the vehicle. [5]
(B) Differentiate between streamlined and bluff body. Explain the various methods for reducing the drag force in automobile [5]
(C) Explain pressure profile for airfoil body and its measurement technique. [5]

OR

- (C) Describe airfoil profile with neat sketch and explain variable parameters of airfoil profile. [5]
Que:2 (A) Explain active safety in automobile with neat sketches of applications. [5]
(B) Explain HVAC for automobile. [5]

OR

- (A) Explain passive safety in automobile with neat sketch. [5]
(B) Write short note on ergonomic approach for design of seat in automobile. [5]
Que:3 (A) Classify bus body and explain bus body types with neat sketch. [5]
(B) Write short note on "driver compartment in bus". [5]

OR

- (A) Define following terms: [5]
1) Escape Hatch
2) Unladen kerb Mass
3) Gross Vehicle Weight
4) Head Restraint
5) Torso Reference Line
6) Cant rails
(B) Draw the bus body layout and give the function of each component of bus body [5]

SECTION-II

- Que:4** (A) Write short note on commercial vehicle chassis. [5]
(B) Explain dashboard of commercial vehicle with neat sketch. [5]
(C) Explain various material used in commercial vehicle manufacturing. [5]
OR
(C) Classify commercial vehicles. [5]

- Que:5** (A) Describe mechanisms used in automobile for opening and closing of door in automobile. [5]
(B) Describe importance of engine mounting position in an automobile. [5]

OR

- (A) Explain water leakage test of an automobile. [5]
(B) Describe sources of body noise and remedies for noise reduction in automobile. [5]
- Que:6** (A) Explain the various adhesives and sealants used in automobile [5]
(B) Explain use of different metal sheets as vehicle body material. [5]

OR

- (A) Explain importance of paint in automobile. [5]
(B) Explain briefly GRP and FRP used in automobile body. Give its merits and demerits. [5]

Best of luck

KADI SARVA VISHWAVIDHYALAYA
B.E. AUTOMOBILE
Semester-V Nov/Dec-2015

Subject: Automobile Chassis and Body Engineering

Date: 30/11/2015

Subject Code: AE-506

Time: 10:30 am to 01:30 pm

Total Marks: 70

Instructions:

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5. Use the last page of main supplementary of **rough work**.

SECTION-I

- Que:1** (A) Describe Aerodynamic aids for optimization of drag. [5]
(B) Write the difference between frame, chassis and body of a vehicle. [5]
(C) How the crash test is performed for auto vehicles? Explain different types of forces and moments acting on vehicle along with there effects on vehicle. [5]
- OR**
- (C) What do you mean by drag? Explain various types of drags faced by the vehicle while moving on road. [5]

- Que:2** (A) What is surface protection for vehicle body? Explain different methods of painting process. [5]
(B) Draw various layouts of bus bodies and explain each. [5]
- OR**
- (A) Explain Roll over test to be performed for auto vehicles. [5]
(B) Write a short note on safety requirements for vehicle body. [5]

- Que:3** (A) Explain methods of improving visibility and space in car body. [5]
(B) Write short note on heating and ventilation systems in car body. [5]
- OR**
- (A) State the sources of body noise. Also describe testing and elimination methods for body noise. [5]
(B) Explain design of drivers cabin for commercial vehicles [5]

SECTION-II

- Que:4** (A) Explain water leakage testing of vehicle. [5]
(B) Explain Symmetric, asymmetric and longitudinal loads in cars [5]
(C) Describe wind tunnel testing of a scaled model of a car [5]
- OR**
- (C) Describe the selection of paint and painting process of vehicle. [5]
- Que:5** (A) Explain types of commercial vehicle bodies. [5]
(B) Explain types of window glasses for vehicles with sketch [5]
- OR**
- (A) Explain shear panel method for vehicle body. [5]
(B) Explain SLED test or AIS 016 for seats. [5]

- Que:6 (A) Explain difference between toughened glass, sheet glass and laminated glass. [5]
(B) Write short note on Corrosion protection of body. [5]

OR

- (A) Explain with sketch the tipper body design. [5]
(B) Explain types of window glasses for vehicles with sketch [5]

Best of luck