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Question Paper Code: AME552



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech VI Semester End Examinations (Regular) - May, 2019

Regulation: IARE – R16

INTRODUCTION TO AUTOMOBILE ENGINEERING

Time: 3 Hours

(AE)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

- (a) Discuss briefly all the components of an automobile. How gear box is important in an automobile? [7M]
(b) Compare Otto, Diesel and Dual cycles. Draw its P-V and T-S daigram. [7M]
- (a) Illustrate working of common rail fuel injection system of an automobile. [7M]
(b) What do understand by engine servicing and give steps involved in engine servicing. [7M]

UNIT – II

- (a) Why water forced circulation system is used in cooling system of an automobile? Explain working of it with suitable sketch. [7M]
(b) Illustrate various electrical systems in an automobile. How the life of a spark plug of two stroke engine and four stroke engines is related with each other? [7M]
- (a) List the functions of an ignition system and describe the working of electronic ignition system with suitable sketch. [7M]
(b) Identify the various lighting systems in an automobile and sketch all these arrangements. [7M]

UNIT – III

- (a) Explain with a simple sketch, working of centrifugal type of clutch and why free play should be provided for clutch. [7M]
(b) Draw and explain with a simple sketch, working of a constant mesh gear box [7M]
- (a) Classify the different types of clutches. Explain the working of differentia gear box with a neat sketch. [7M]
(b) What are the types of rubber springs? Explain with a neat sketch. [7M]

UNIT – IV

7. (a) What are the types of brakes generally used on front and on rear of Maruti car? Explain the braking system used in passenger vehicle(NOT ABS). [7M]
- (b) What is the general brake efficiency of a new vehicle? Explain the working of ABS with a neat sketch. [7M]
8. (a) Explain the steering characteristics – oversteer and understeer with neat sketches. [7M]
- (b) What are the various steering gears used? Explain recirculating ball steering gear with a possible sketch. [7M]

UNIT – V

9. (a) What are the main pollutants in the engine exhaust? Explain the use of alternative fuels for emission control. [7M]
- (b) Explain briefly the methods available to control emissions from an automobile. [7M]
10. (a) Discuss the thermal reactors used for exhaust gas treatment with neat sketch. [7M]
- (b) Explain in detail about the engine emission control by three way catalytic converter system. [7M]

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