

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VIII (NEW) EXAMINATION – WINTER 2020

Subject Code:2181915

Date:19/01/2021

Subject Name:Automobile Engineering

Time:02:00 PM TO 04:00 PM

Total Marks: 56

Instructions:

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q.1 | (a) Define: Chassis, Wheel Base, Steering Ratio | 03 |
| | (b) List different resistance acting on the vehicle. Explain how it affect the vehicle movement. | 04 |
| | (c) What are the different types of frames? Explain merit and demerit of frameless construction with conventional framed construction. | 07 |
| Q.2 | (a) Draw layout of automobile chassis. | 03 |
| | (b) Compare front wheel drive and rear wheel drive for front mounted engine chassis. | 04 |
| | (c) Explain SSS method for vehicle structure analysis of saloon. | 07 |
| Q.3 | (a) Why gear box is required? | 03 |
| | (b) Differentiate fluid coupling and torque converter. | 04 |
| | (c) Explain synchromesh gear box with neat sketch. | 07 |
| Q.4 | (a) Define: Caster, Camber, King pin inclination. | 03 |
| | (b) Explain Hook's joint with neat sketch. | 04 |
| | (c) Explain Wishbon type suspension system with neat sketch. | 07 |
| Q.5 | (a) Explain under steer and over steer of vehicle. | 03 |
| | (b) What are function of steering system? What are the requirements of good steering system? | 04 |
| | (c) What are the different types of differential? Explain any one in detail with neat sketch. | 07 |
| Q.6 | (a) Differentiate Hotchkiss Drive and Torque Tube Drive. | 03 |
| | (b) What are the different loads acting on rear axle? Explain in details. | 04 |
| | (c) Draw lighting circuit with all nomenclature and explain its components. | 07 |
| Q.7 | (a) Define Braking Distance, Braking Efficiency, Slip Ratio. | 03 |
| | (b) Differentiate disc brake and drum brake. | 04 |
| | (c) What is ABS? List different components of ABS and explain ABS with neat sketch. | 07 |
| Q.8 | (a) Classify Wheel for automobile. | 03 |
| | (b) Explain tire designation. | 04 |
| | (c) Write a short note on hybrid vehicle. | 07 |
