

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2180203/2180211****Date:15/05/2019****Subject Name:Special Purpose Vehicles****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

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|------------|---|-----------|
| Q.1 | (a) Classify the special purpose vehicle | 03 |
| | (b) Explain Road Roller. | 04 |
| | (c) Explain the working of Steering system of special purpose vehicle with neat sketch. | 07 |
| Q.2 | (a) Explain track type special purpose vehicle. | 03 |
| | (b) Explain working principles of lubrication system of special purpose vehicle. | 04 |
| | (c) Explain working principle and design consideration of final drive. | 07 |
| | OR | |
| | (c) Explain design consideration of electrical system of special purpose vehicle. | 07 |
| Q.3 | (a) Write short note on PTO unit. | 03 |
| | (b) Enlist different types of accessories of wheeled tractors use. | 04 |
| | (c) Give the classification of tractor and explain power transmission system of tractor. | 07 |
| | OR | |
| Q.3 | (a) Enlist different types crane are used. | 03 |
| | (b) Write short note on safety device of crane. | 04 |
| | (c) Explain construction and working principle of mobile crane with neat sketch. | 07 |
| Q.4 | (a) What are articulated vehicles? | 03 |
| | (b) Explain comparison of Wheel loader and Shovel. | 04 |
| | (c) Explain purpose, construction and working tipper in detail. | 07 |
| | OR | |
| Q.4 | (a) Give the advantage and limitation of ripper. | 03 |
| | (b) Explain construction feature of forklift. | 04 |
| | (c) Draw the sketch showing the construction of loaders and explain its purpose and working in detail. | 07 |
| Q.5 | (a) Write short note on hover craft | 03 |
| | (b) Write short note on fire extinguishing vehicle. | 04 |
| | (c) Write the importance of Ergonomics in Vehicle Designing | 07 |
| | OR | |
| Q.5 | (a) Write short note on comfort in special purpose vehicle. | 03 |
| | (b) Explain economics of special purpose vehicle utilization. | 04 |
| | (c) Explain human factor in special purpose vehicle design with reference to vibration and thermal stress on human performance. | 07 |
