

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2017**

**Subject Code: 2180203**

**Date: 29/04/2017**

**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.

- Q.1** (a) Classify the special purpose vehicle and give the application of each. **07**  
(b) Explain the working of lubrication system of special purpose vehicle with neat sketch **07**
- Q.2** (a) Explain types of hydrodynamic steering system used in special purpose vehicle with examples **07**  
(b) Explain the working of pneumatic brake system with neat sketch. **07**
- OR**
- (b) Explain wheel loader with its applications. What types of attachments can be extended to a wheel loader? **07**
- Q.3** (a) Draw the sketch showing the construction of a shovel and explain its purpose and working in detail. **07**  
(b) Explain purpose, construction and working of Tippers in detail. **07**
- OR**
- Q.3** (a) Draw a sketch of a single Drum type road roller and explain details of engine power system, steering system and braking system. **07**  
(b) Explain the transmission system and drive line of tractor with neat sketch. **07**
- Q.4** (a) Give the classification of tractor and explain various implements used with tractor. **07**  
(b) What is PTO shaft? Explain 3 standard types of PTO shaft. **07**
- OR**
- Q.4** (a) List the types of crane and explain characteristic of truck crane. **07**  
(b) Write short note on control systems and safety devices of crane. **07**
- Q.5** (a) Explain working of a Hover craft. **07**  
(b) Explain with neat sketch Fire Extinguishing Vehicle. **07**
- OR**
- Q.5** (a) Describe economics of SPV utilization. **07**  
(b) Explain human factors in SPV design with reference to comfort. **07**

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