

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2023

Subject Code:2180211

Date:04-12-2023

Subject Name:Special Purpose Vehicles

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Explain fifth wheel coupling mechanism. **03**
(b) Explain comparison of Wheel loader and Shovel. **04**
(c) Classify the special purpose vehicle and give the application of each. **07**

- Q.2** (a) What does mean by articulated vehicle. **03**
(b) Explain design features of mobile cranes. **04**
(c) Explain multi axle vehicles purpose, advantages and disadvantages. **07**

OR

- (c) Explain types of hydrodynamic steering system used in special purpose vehicle with examples. **07**
- Q.3** (a) Enlist types of earth moving equipment's. **03**
(b) Explain Constructional working features of ambulance. **04**
(c) Draw the sketch showing the construction of a shovel and explain its purpose and working in detail. **07**

OR

- Q.3** (a) Explain dozer and different blades of dozer. **03**
(b) Explain the difference between Trailer and semi-trailer. **04**
(c) Draw neat sketches of accessory attached used in tractors and explain. **07**

- Q.4** (a) Explain in detail tracked vehicle used in armed force. **03**
(b) Explain construction feature of forklift. **04**
(c) Explain in detail types of Road Roller construction. Draw neat sketches. **07**

OR

- Q.4** (a) Write short note on excavator. **03**
(b) Write short note on hover craft. **04**
(c) What is PTO shaft? Explain 3 standard types of PTO shaft. **07**

- Q.5** (a) Write short note on safety device of crane. **03**
(b) Brief about stability and control system in mobile cranes. **04**
(c) Explain with neat sketch Fire Extinguishing Vehicle. **07**

OR

- Q.5** (a) Write a note on features of oil-tankers. **03**
(b) Describe economics of SPV utilization. **04**
(c) Explain human factors in SPV design with reference to comfort. **07**
