

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VIII EXAMINATION-SUMMER 2023****Subject Code: 2180211****Date: 30/06/2023****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.

		MARKS
Q.1	(a) Explain track type special purpose vehicle.	03
	(b) Write short note on comfort in SPV.	04
	(c) Explain design consideration of electrical system of SPV.	07
Q.2	(a) Classify the special purpose vehicle	03
	(b) Explain working principles of transmission system of SPV.	04
	(c) What is PTO shaft? Explain 3 standard types of PTO shaft.	07
	OR	
	(c) Explain working principles and design considerations of electro-hydraulic power steering.	07
Q.3	(a) What are the factors affecting on Selection of tractor?	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) Explain different types of dozer blades.	04
	(c) Explain control system & safety devices of crane.	07
Q.4	(a) Give advantage and limitation of fork lift.	03
	(b) Explain principle of dumper and explain any one type.	04
	(c) Explain principle of road roller & give application of any of its 3 of road roller in detail.	07
	OR	
Q.4	(a) Give the advantage and limitation of Ripper.	03
	(b) Explain construction feature of Excavator.	04
	(c) Explain Constructional working features of tipper.	07
Q.5	(a) What are Articulated Vehicles?	03
	(b) Explain economics of SPV utilization.	04
	(c) Write the importance of Ergonomics in Vehicle Designing	07
	OR	
Q.5	(a) Write short note on Hover Craft	03
	(b) Write short note on Fire Extinguishing Vehicle.	04
	(c) Explain human factor in SPV design with reference to vibration and thermal stress on human performance.	07
