

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VIII (NEW) EXAMINATION – WINTER 2020****Subject Code: 2180211****Date: 25/01/2021****Subject Name: Special Purpose Vehicles****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.

MARKS

Q.1	(a) Explain specific instruments used in various special purpose vehicles.	03
	(b) Explain advantages and disadvantages of multi axle vehicles.	04
	(c) Classify the special purpose vehicles and give the application of each.	07
Q.2	(a) Explain working of hover craft.	03
	(b) Write short note on PTO shaft. Explain three standard types of PTO drives.	04
	(c) Explain the construction of Mobile crane.	07
Q.3	(a) Explain application of wheel and track type vehicle.	03
	(b) What is the function of Tipper ?	04
	(c) List the various types of excavators and explain any one excavator in detail.	07
Q.4	(a) Describe special features of tractor.	03
	(b) Explain comparison of wheel loader and shovel.	04
	(c) Explain forklift with its uses and operation techniques.	07
Q.5	(a) Explain Track-mounted excavator in detail.	03
	(b) Explain different types of road roller.	04
	(c) Explain purpose, construction and working of Tippers in detail.	07
Q.6	(a) Explain the different types of lubrication system.	03
	(b) Explain any two steering gear box with neat sketch.	04
	(c) Explain fifth wheel mechanism and describe fifth wheel ratings and capacities.	07
Q.7	(a) What is "Ballasting" of tractor ? Give its advantages.	03
	(b) Explain human factors in SPV design with reference to comfort.	04
	(c) Explain types of hydrodynamic steering system used in special purpose vehicle with examples.	07
Q.8	(a) Explain safety consideration during crane operations.	03
	(b) Explain with neat sketch of dumper.	04
	(c) Explain the design consideration and performance parameters of an innovative special purpose vehicle.	07
