

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VIII (New) EXAMINATION – WINTER 2019****Subject Code: 2180211****Date: 27/11/2019****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.

		MARKS
Q.1	(a) Classify the special purpose vehicle.	03
	(b) Explain advantages & disadvantages of wheel type & track type vehicle.	04
	(c) Explain hydraulic braking system used in special purpose vehicle.	07
Q.2	(a) What do you mean by hydraulic control circuits?	03
	(b) Explain lubrication system used in special purpose vehicle.	04
	(c) Explain working principles and design considerations of electrohydraulic power steering.	07
	OR	
	(c) Explain working principles and design considerations of final drive.	07
Q.3	(a) Give advantage and limitation of fork lift.	03
	(b) Explain principle of dumper and explain any one type of construction equipment dumper.	
	(c) Explain Constructional working features of tipper.	07
	OR	
Q.3	(a) Function of (1) Ripper, (2) scraper, (3) power shovel	03
	(b) Draw the sketch showing the construction of an excavator & explain its purpose.	04
	(c) Explain principle of road roller, & give application of any three type of road roller in detail.	07
Q.4	(a) Give the classification of tractor.	03
	(b) Make a layout of tractor & give the name of main components used in tractor.	04
	(c) Enlist different types of crane. & explain any one in brief.	07
	OR	
Q.4	(a) What are the factors affecting on Selection of tractor?	03
	(b) Discuss about power take off unit.	04
	(c) Explain control system & safety devices of crane.	
Q.5	(a) Explain thermal stresses on human performance.	03
	(b) Write short note on comfort in special purpose vehicle.	04
	(c) Explain the working of fire extinguishing vehicle. Draw sketch of foam tender.	07
	OR	
Q.5	(a) Explain in brief articulated vehicle.	03
	(b) Explain the working of hover craft.	04
	(c) Explain human factors in SPV design with reference to comfort.	07