

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024**

**Subject Code:3160213**

**Date:24-05-2024**

**Subject Name:Special Purpose Vehicle**

**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.**
- 4. Simple and non-programmable scientific calculators are allowed.**

**MARKS**

<b>Q.1</b>	(a) Classify the special purpose vehicle	<b>03</b>
	(b) Explain Scrapers.	<b>04</b>
	(c) Explain design consideration of electrical system of Special Purpose Vehicle.	<b>07</b>
<b>Q.2</b>	(a) Explain Track Type Special Purpose Vehicle.	<b>03</b>
	(b) Explain working principles of lubrication system of Special Purpose Vehicle.	<b>04</b>
	(c) Explain working principle and design consideration of Final Drive.	<b>07</b>
	<b>OR</b>	
	(c) Explain the working of Steering system of Special Purpose Vehicle with neat sketch.	<b>07</b>
<b>Q.3</b>	(a) Write short note on PTO unit.	<b>03</b>
	(b) Enlist different types of accessories of Wheeled Tractors use.	<b>04</b>
	(c) Elaborate special features of tractor.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Enlist different types Crane are used.	<b>03</b>
	(b) Write short note on safety device of Crane.	<b>04</b>
	(c) Explain construction and working principle of Mobile Crane with neat sketch.	<b>07</b>
<b>Q.4</b>	(a) Give the advantage and limitation of Ripper.	<b>03</b>
	(b) Explain comparison of Wheel loader and Power Shovel.	<b>04</b>
	(c) Draw the sketch showing the construction of Wheel loaders and explain its purpose and working in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) What are Articulated Vehicles?	<b>03</b>
	(b) Explain construction feature of Forklift.	<b>04</b>
	(c) Explain purpose, construction and working Tipper in detail.	<b>07</b>
<b>Q.5</b>	(a) Write short note on comfort in special purpose vehicle.	<b>03</b>
	(b) Write short note on Fire Extinguishing Vehicle.	<b>04</b>
	(c) Write the importance of Ergonomics in Vehicle Designing	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Write short note on Hover Craft	<b>03</b>
	(b) Explain economics of special purpose vehicle utilization.	<b>04</b>
	(c) Explain human factor in special purpose vehicle design with reference to vibration and thermal stress on human performance.	<b>07</b>

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