

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**Diploma Engineering, Mid semester Examination**

**Semester: 6<sup>th</sup>**  
**Subject Code: (03613381)**  
**Subject Name: (Rocket and Missiles Technology)**

**Date: (24/01/2023)**  
**Time: (1hr: 30min)**  
**Total Marks: 40**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered to be Authentic.

<b>Q.1</b>	<b>Answer any six out of Ten. (2 Marks Each)</b>	<b>(12)</b>	<b>CO/PO NAME</b>	<b>Bloom's Taxonomy Words</b>
	1. Define Rocket.		<b>CO1</b>	<b>Knowledge</b>
	2. Define Missiles.		<b>CO1</b>	<b>Knowledge</b>
	3. What is Wire Guidance System?		<b>CO1</b>	<b>Knowledge</b>
	4. What are the applications of Rocket?		<b>CO2</b>	<b>Knowledge</b>
	5. Define Strategic missile.		<b>CO2</b>	<b>Knowledge</b>
	6. Define Expandable Launch Vehicles.		<b>CO2</b>	<b>Knowledge</b>
	7. Define Reusable Launch Vehicles.		<b>CO2</b>	<b>Knowledge</b>
	8. What is Laser Guidance System?		<b>CO2</b>	<b>Knowledge</b>
	9. Enlist Guidance System.		<b>CO2</b>	<b>Analyze</b>
	10. Draw neat sketch of Solid Rocket Motor.		<b>CO3</b>	<b>Create</b>
<b>Q.2</b>	A) Write short note on Petroleum Fuels in liquid propellants.	<b>(03)</b>	<b>CO4</b>	<b>Evaluate</b>
	<b>OR</b>			
	A) Explain Pellet Basket igniter.	<b>(03)</b>	<b>CO4</b>	<b>Understand</b>
	B) Explain types of igniters in brief.	<b>(03)</b>	<b>CO3</b>	<b>Understand</b>
	<b>OR</b>			
	B) Give the classification of Rocket based on propulsion.	<b>(03)</b>	<b>CO2</b>	<b>Understand</b>
	C) Enlist the types of Nozzles and explain Fixed and Movable Nozzle.	<b>(04)</b>	<b>CO3</b>	<b>Analyze</b>
	<b>OR</b>			
	C) Explain Inertia and Non-inertia reference frames.	<b>(04)</b>	<b>CO1</b>	<b>Understand</b>
	D) Give the classification of Missiles.	<b>(04)</b>	<b>CO1</b>	<b>Understand</b>
<b>Q.3</b>	A) Explain Hybrid Propellants.	<b>(03)</b>	<b>CO4</b>	<b>Understand</b>
	<b>OR</b>			
	A) Write down the advantages of the Liquid Propellants.	<b>(03)</b>	<b>CO4</b>	<b>Analyze</b>
	B) Explain Ballistic Missile.	<b>(03)</b>	<b>CO2</b>	<b>Understand</b>
	<b>OR</b>			
	B) What are the Aerodynamic forces acting on the Rocket?	<b>(03)</b>	<b>CO1</b>	<b>Knowledge</b>
	C) Explain Heterogeneous Propellants.	<b>(04)</b>	<b>CO3</b>	<b>Understand</b>
	<b>OR</b>			
	C) Write down Characteristics of Solid Propellants.	<b>(04)</b>	<b>CO3</b>	<b>Analyze</b>
	D) Explain Cryogenic Propellant.	<b>(04)</b>	<b>CO4</b>	<b>Understand</b>