

Trade Name: **AUTOMOBILE TECHNOLOGY (NSQF)**

SESSION **2017-2018**

**CLASS IX**

SUBJECT & CODE: **AUTOMOBILE TECHNOLOGY (464)**

**THEORY: 30 Marks**

**PRACTICAL: 60 Marks**

**1<sup>st</sup> Term (1 April 2017 to 31 August 2017)**

MONTH	CONTENT'S	
	THEORY	PRACTICAL
<b>UNIT-1 HISTORY AND EVOLUTION OF AUTOMOBILES</b>		
<b>APRIL 2017</b>	<p><b>Invention of Wheel:</b> History, Wheel and its type, Materials of wheel</p> <p><b>Wheel Cart:</b> Types of carts, Materials of carts, Horse Power</p> <p><b>Invention Of Automobiles:</b> Karl Benz, 1<sup>st</sup> vehicle invention, 1<sup>st</sup> patent car, engine types discovered, Bertha Benz, Important Manufacturers of cars</p> <p><b>Invention Of Automobiles in World War II:</b> Rising of many manufacturers automobile industry, Indian Automotive Industry, Clusters, First imported Vehicle to India, Manufacturers of Indian Cars, Development of Automobiles In India</p>	<ul style="list-style-type: none"><li>* Draw a neat diagram of Wheel.</li><li>* Draw a wheel cart and label its parts</li><li>* Make a List of important invention of automobile</li><li>* Make a list of Indian Automobile Manufacturers.</li><li>* History of Indian 2 wheelers and 4 wheelers vehicle.</li></ul>
<b>UNIT-2 VARIOUS TYPES OF AUTOMOBILES</b>		
<b>MAY 2017</b>	<p><b>Two Wheelers and Three Wheelers:</b> History and contribution in 2-Wheeler sector of India, Leading Manufacturers of 2&amp;3 wheelers in India, Trikes, HVP, PPV, ATV</p> <p><b>Passenger and Commercial Vehicles:</b> Types of Passenger and commercial vehicle, Different makes of both vehicles in India</p> <p><b>Agricultural Vehicles:</b> Meaning, Different types of Agricultural Vehicle and uses of them i.e. Tractor, Combines etc. Role of Tractor in different fields.</p>	<ul style="list-style-type: none"><li>* Draw two and three Wheelers and Identification of 2-Wheelers.</li><li>* Benefits of 2 Wheelers use</li><li>* Classification of different types of Passenger and Commercial Vehicles</li><li>* Make a list of different types of Agriculture Vehicles</li><li>* Make a list of different types of Construction Vehicles</li></ul>

	<p><b>Construction Vehicles Special Vehicles:</b> Meaning, Different types of Construction Vehicle and uses of them i.e. Dumpers, Dozers and Tillers etc.</p> <p><b>Special Vehicles:</b> Importance of Special Vehicles i.e. Fork lift, Crane and its types, Railway Locomotive, Tankers (Fuel, Water, Milk etc.)</p>	<ul style="list-style-type: none"> <li>* Explain different types of Special Vehicles</li> </ul>
<p><b>11 MAY 2017 to 30 JUNE 2017</b></p>	<p><b>Summer Vacation/On Job Training</b></p>	

**UNIT-3**  
**MAJOR SYSTEMS & COMPONENTS OF AN AUTOMOBILE**

<p><b>JULY 2017</b></p>	<p><b>Different segments and manufacturers based on engine components:</b> Five Segments and Global Manufacturer</p> <p><b>Chassis Frame and Auto Body:</b> Meaning of Chassis, Types, Components and Function of Chassis, Material used for Chassis and Body, Requirements for good Body</p> <p><b>Engine and its Components:</b> Engine and it's types, Spark and Compression Ignition, 2-Stroke and 4-Stroke Engine, Components of C.I engine</p> <p><b>Lubrication System:</b> Meaning of Lubricate and Objective of Lubrication, Importance of lubrication system (Diagram)</p> <p><b>Cooling System:</b> Necessity of Cooling system and types of cooling system (Diagram)</p> <p><b>Fuel Supply System(FSS):</b> FSS components for SI and CI Engines(Diagram)</p> <p><b>Transmission System:</b> Meaning of Transmission, Components of Transmission System, Function and Requirement of clutch and Components of Clutch, Gear Box and its function, Importance of transmission system.</p> <p><b>Front and Rear Axle:</b> Front axle components and work, Material, Rear axle components and differential work</p> <p><b>Steering System:</b> Types of Steering, Components of Steering system and its function, Role of Ball joints</p> <p><b>Suspension System:</b> Importance and Function of Suspension System, Components and Different types of Suspension System</p> <p><b>Wheel and Tyre:</b> Components and Function of Wheel, Explain Rim with types and</p>	<ul style="list-style-type: none"> <li>* Draw a neat and labelled diagram of Chassis.</li> <li>* Describe different types of Chassis.</li> <li>* Difference between 2-Stroke and 4-Stroke.</li> <li>* Difference between SI and CI engine</li> <li>* Sketch a neat diagram of fully labelled Lubrication System and locate different parts of Lubrication System.</li> <li>* Explain the working of Cooling System</li> <li>* Role of Fuel Supply System</li> <li>* Importance of Different Components of Transmission</li> <li>* Role and Uses of Front and Rear Axle</li> <li>* List up different component of steering system and Importance of Ball joint.</li> <li>* Explain and find out Different types of Suspension system and components.</li> <li>* Explain different types of</li> </ul>
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	<p>dimension, Tyre Specification and Desirable Properties with its function</p> <p><b>Brake:</b> Brake, Function and Requirement of Good Brakes, Types of Brakes, Importance of Brakes in Automobile</p> <p><b>Electrical and Electronic System:</b> Main parts (i.e. Starting, Ignition, Generating/Charging, Lighting) and Main Components, Advantage of Electronic System</p> <p><b>Air Conditioning System:</b> Different components of Automobile Air Conditioning, Role of Humidity and Meaning of HAVC, Advantages of Air Conditioning system</p> <p><b>Active &amp; Passive Safety:</b> Meaning of Active and Passive, Advantage of Active and Passive Safety</p>	<p>Rim and dimension.</p> <ul style="list-style-type: none"> <li>* Draw a neat sketch of Tyre with full specification.</li> <li>* Differentiate Hydraulic, Disk and Mechanical brakes.</li> <li>* Advantage and Disadvantage of Electronic System.</li> <li>* List up different components of a Car AC.</li> <li>* Explain HAVC system.</li> <li>* Know about safety equipment's</li> </ul>
<b>UNIT-4</b> <b>ROAD SAFETY</b>		
<b>AUGUST 2017</b>	<p><b>Importance of Road Safety:</b> Road Safety, Importance of Road Safety, Road Safety Tips, Hurdles in Road Safety in India</p> <p><b>Safe and Responsible Driving:</b> Attitude, Physical and Mental Alertness, Seat Belt, Blind Spots, Turn head lights i.e. HIGH and LOW Beam</p> <p><b>Road Signs:</b> Arm Signals, Categories: Mandatory, Cautionary and information Signs i.e. Speed Limit, Over Size, Diversion and No Entry etc. Signal role in Road Safety</p> <p><b>Driving Rules and Registration:</b> Driving Rules List, Necessity and types of Registration, Documents require for registration.</p> <p><b>Driving License:</b> Necessity of Driving Licence and types of licences in India, Difference between temporary and permanent and duplicate licences and Importance of uses of Driving Licence.</p>	<ul style="list-style-type: none"> <li>* Explain in brief Road sign and safety tips.</li> <li>* List up types of Driving Licence</li> <li>* Explain the procedure to make a Temporary Licence and Permanent Licence.</li> <li>* Importance of Licence.</li> </ul>
<b>SEPTEMBER 2017</b>	<p>1.9.17-8.9.17 <b>Revision of 1<sup>st</sup> term</b> , 11.9.17-29.9.17 <b>1<sup>st</sup> term exam</b></p> <p>27.9.17 <b>Discussion on Exam Q. Paper</b>,</p> <p>28.9.17-29.9.17 <b>Autumn Break</b></p>	