

11.01 Introduction

The aim of the Motor Vehicle Mechanics trade theory is to help the trainee understand the working principles and methods of rectifying faults in any type of motor vehicle. This will assist him to handle the trade practice efficiently and will take 10% of the total trade subject time.

11.02 General Objectives

At the end of this Subject the trainee should have:-

- developed safety awareness that is required in a motor vehicle shop;
- the ability to interpret simple sketches of vehicle systems and components;
- equipped himself with knowledge for proper use and care of motor vehicle tools and equipment.
- understood how each part of motor vehicle components work;
- the ability to explain the procedure of procuring spare parts and materials;
- the knowledge of organizing and managing a small workshop.

TOPICS	SUB-TOPICS	TIME (HOURS)
11.1.T Introduction	<ul style="list-style-type: none"> History of automobile Occupational information 	2
11.1.2.T Safety	<ul style="list-style-type: none"> Personal safety Tools safety Material safety First Aid Fire control 	4
11.1.3.T Tools and Equipment	<ul style="list-style-type: none"> Marking out tools Measuring tools Cutting tools Fastening tools Jacks and cranes 	6
11.1.4.T Vehicle Layout	<ul style="list-style-type: none"> Main units Position of units Sketching of the layout 	4
11.1.5.T Engine	<ul style="list-style-type: none"> Types Major engine parts Defects Sketching of engines parts 	10
11.1.6.T Transmission	<ul style="list-style-type: none"> Main units Functions of components 	6
11.1.7.T Suspension	<ul style="list-style-type: none"> Types Sketching Function 	6
11.1.8.T Wheels (Tyres, Rims, Tubes)	<ul style="list-style-type: none"> Types Care 	3

11.1.9.T Brakes	<ul style="list-style-type: none"> • Types • Functions • Main parts • Faults and their remedies 	6
11.1.10.T Steering System	<ul style="list-style-type: none"> • Types • Function • Main parts 	6
11.1.11.T Fuel System	<ul style="list-style-type: none"> • Fuels • Types of fuel systems • Layout. 	4
11.1.12.T Ignition Systems	<ul style="list-style-type: none"> • Function • Layout of the system • Functions of main parts. 	6
11.1.13.T Cooling System	<ul style="list-style-type: none"> • Function • Types • Major components. 	4
11.1.14.T Lubrication System	<ul style="list-style-type: none"> • Function • Lubricants • Types of lubrication systems 	6
11.1.15.T Electrical Systems	<ul style="list-style-type: none"> • Circuits layout • Functions of each circuit 	6

11.1.1.T INTRODUCTION (2 HOURS)

11.1.1.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- explain the invention of motor vehicle;
- state the opportunities available in the motor industry.

11.1.T.1.1 History of automobile;

- early inventors,
- cause of changes.

11.1.T.1.2 Career opportunities;

- self-employment,
- wage employment,
- further advancement.

11.1.2.T SAFETY (4 HOURS)

11.1.2.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- explain the importance of mode of dressing in the workshop;
- develop good safety working habits;
- describe the procedure followed in caring and maintaining various tools and equipment;
- explain how different materials are handled and stored;
- list the steps taken when administering first aid in the workshop;
- state different classes of fire;
- name the types of fire extinguishers.

11.1.2.T.1.1 Personal safety;

- dressing,
- attitudes in a workshop.

11.1.2.T.1.2 Tools safety;

- storage,
- methods of use,
- maintenance.

11.1.2.T.1.3 Materials safety;

- handling,
- storage.

11.1.2.T.1.4 First Aid and

- i) cuts,
- ii) burns,
- iii) shocks.

11.1.2.T.1.5 Classification of fire;

- i) Class A - e.g. wood, paper,
- ii) Class B - Flammable liquids e.g. petrol, oil, paints, grease, etc.,
- iii) Class C - Electrical equipment,
- iv) Class D - (special) combustible metals.

11.1.2.T.1.6. Fire extinguisher;

- i) CO₂,
- ii) dry powder,
- iii) foam,
- iv) water,
- v) sand and soil.

11.1.3.T TOOLS AND EQUIPMENT (6 HOURS)

11.1.3.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the use of correct tools for a given job;
- b) sketch different types of tools;
- c) explain the use of various types of tools and equipment.

11.1.3.T.1.1. Use of tools and equipment for a given job;

- i) measuring tools,
- ii) cutting tools,
- iii) fastening tools,
- iv) jacks and cranes.

11.1.3.T.1.2. Sketching of various workshop tools

11.1.3.T.1.3 Proper use of tools and equipment for a given jobs;

- i) marking out tools,
- ii) measuring tools,
- iii) cutting tools,
- iv) fastening tools,
- v) workshop equipment.

VEHICLE LAYOUT (4 HOURS)

11.1.4.T Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) identify the main units of a motor vehicle;
- b) explain the position of each unit;
- c) sketch the layout of a conventional motor vehicle.

11.1.4.T.1.1. Main units;

- i) engine,
- ii) suspension,
- iii) steering,
- iv) chassis,
- v) transmission,
- vi) accessories.

11.1.4. positioning of units;

- i) types of drives,
- ii) sketches.

11.1.5.T.1 Layout of a conventional motor vehicle

11.1.5.T ENGINE (10 HOURS)

11.1.5.T1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) differentiate types of engines and their working principle;
- b) list major parts of a given engine;
- c) analyse parts defects and remedies.

11.1.5.T.1.1. Types of engines;

- i) c . i and s . i engines,
- ii) two stroke and four stroke.

11.1.5.T.1.2 Major engine parts;

- i) head assembly,
- ii) block assembly.

11.1.5.T.1.3 Defects and remedies;

- i) causes of wear and damages,
- ii) methods of rectification of defects.

11.1.6.T. TRANSMISSION SYSTEM (6 HOURS)

11.1.6.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- list main units of transmission;
- state the functions of the transmission system;
- sketch the layout of a conventional transmission system.

11.1.6.T.1.1 Main units;

- clutch,
- gear box,
- propeller shaft,
- rear axle assembly.

11.1.6.T.1.2 Functions of the system;

- gear reduction,
- motion transmission.

11.1.6.T.1.3 Layout of a conventional transmission.

11.1.7.T SUSPENSION SYSTEM (6 HOURS)

11.1.7.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- list types of suspension;
- state the functions of the suspension system;
- explain the operation of the suspension system.

11.1.7.T.1.1 Types of suspensions;

- coil springs,
- leaf springs,
- shock absorber (dampers);
- rubber suspensions.

11.1.7.T.1.2 Functions of suspension system;

- comfort,
- stability.

11.1.7.T.1.3 Operation of the systems.

11.8.T WHEELS (RIMS, TYRES AND TUBES) (3 HOURS)

11.1.8.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- state different types and sizes of tyres and tubes;
- list types of rims;
- explain the maintenance requirements of a wheel.

11.1.8.T.1.1 Different types and sizes of tyres and tubes;

- cross-ply,
- radial,
- sizes.

11.1.8.T.1.2 Types of rims;

- spoked type,
- disc type,
- split type.

11.1.8.T.1.3 Care and maintenance;

- tyre pressure,
- rotation of tyres
- speed requirements.

11.1.9.T BRAKES (6 HOURS)

Specific objectives

At the end of this topic, the trainee should be able to:-

- state the functions of braking systems;
- list the different types of brake system;
- explain the layout of braking systems.

11.1.9.T.1.1 Functions of braking system

- accident prevention,
- vehicle control.

11.1.9.T.1.2 Types;

- fluid brakes,
- mechanical brakes.

11.1.9.T.1.3 Layout of different brake systems

11.1.10.T STEERING SYSTEM

11.1.10.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- state the functions of steering systems;
- list different types of steering systems;
- name the common types of steering gear boxes;
- explain the layout of a manual steering system.

11.1.10.T.1.1 Function of the steering system

11.1.10.T.1.2 Types of steering system;

- manual,
- power assisted.

11.1.10.T.1.3 Steering gear boxes;

- recirculating-balls,
- rack and pinion,
- worm and peg.

11.1.10.T.1.4 Layout of the steering system

11.1.11.T FUEL SYSTEM (4 HOURS)

11.1.11.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- state different types of fuels;
- explain the different types of fuel systems;
- sketch and label different types of fuel systems.

11.1.11.T.1.1 Fuels;

- diesel,
- petrol,
- other fuels e.g. alcohol, kerosine.

11.1.11.T.1.2 Fuel systems;

- petrol supply,
- diesel supply.

11.1.11.T.1.3 Layout of fuel systems

11.1.12.T IGNITION SYSTEM (6 HOURS)

11.1.12.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- state the function of the ignition system;
- explain the layout of the ignition system;
- state the functions of each main part.

11.1.12.T.1.1 Functions of the system

11.1.12.T.1.2 Layout of ignition system;

- coil ignition,
- magneto ignition.

11.1.12.T.1.3 Functions of main parts;

- coil,
- condenser (capacitor),
- distributor,
- magneto,
- battery,
- spark plugs.

11.1.13.T COOLING SYSTEM (4 HOURS)

11.1.13.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- state the function of the system;
- name the types of cooling system;
- list parts of the systems.

11.1.13.T.1.1 Function of the system

11.1.13.T.1.2 Types;

- liquid-cooled,
- air-cooled.

11.1.13.T.1.3 Major components;

- radiator,
- water pump;
- fan,
- thermostat,
- engine block,
- fins,
- hose pipes.

11.1.14.T LUBRICATION SYSTEM (6 HOURS)

11.1.14.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- explain the need for lubrication;
- name different types of lubricants;
- explain the types of lubrication systems.

11.1.14.T.1.1 Need for lubrication

11.1.14.T.1.2 Types of lubricants;

- grease,
- oil.

11.1.14.T.1.3 Types of lubrication systems;

- engine lubrication;
- force feed system,
 - splash system,
 - greasing and oiling.

11.1.15.T ELECTRICAL SYSTEM (6 HOURS)

11.1.15.T 1Special Objectives

At the end of this topic, the trainee should be able to:-

- state the function of each given electrical circuit;
- explain the operation of the starting system;
- draw and explain the main lighting circuits.

11.1.15.T.1.1 Functions of given circuits;

- starting,
- lighting.

11.1.15.T.1.2 Operation of starting system

11.1.15.T.1.3 Main light circuits;

- main lamps,
- dim lights,
- parking lights,
- brake lights.

SECOND YEAR TRADE THEORY (79 HOURS)

TOPIC	SUB-TOPIC	TIME
11.2.T Safety	<ul style="list-style-type: none">First AidFire controlTools safety	2
11.2.2.T Tools and Equipment	<ul style="list-style-type: none">Joining tools and equipmentMeasuring toolsCutting tools	4
11.2.3.T Engine	<ul style="list-style-type: none">Different engine constructionDefectsMeasurement and calculations for wearMaterials	6
11.2.4.T Transmission	<ul style="list-style-type: none">FunctionsLayoutClutch bleedingDefects	5
11.2.5.T Suspension	<ul style="list-style-type: none">Function of main partsOther typesDefects	5
11.2.6.T Wheels (rims, tyres, tubes)	<ul style="list-style-type: none">WheelConstructionDefects	4
11.2.7.T Brakes	<ul style="list-style-type: none">OperationFaultsMaterialsAdjustmentsBleeding	6
11.2.8.T Steering System	<ul style="list-style-type: none">Steering box constructionLinkagesSteering geometryFaults	6

11.2.9.T Fuel System	<ul style="list-style-type: none"> • Main components • Functions of each component • Faults in the components 	4
11.2.10.T Ignition System	<ul style="list-style-type: none"> • Ignition timing • Operation of the ignition circuit 	4
11.2.11.T Cooling System	<ul style="list-style-type: none"> • Construction and operation of main parts • Faults 	2
11.2.12.T Lubrication System	<ul style="list-style-type: none"> • Servicing • Main components • Faults 	4
11.2.13.T Electrical System	<ul style="list-style-type: none"> • Circuits layout • Faults • Types of connectors 	6
11.2.14.T Basic panel Beating and Spray Painting	<ul style="list-style-type: none"> • Safety • Tools and equipment • Materials • Procedures of panel beating • Paint mixing • Procedure of spray painting 	6
11.2.15.T Basic Driving Techniques	<ul style="list-style-type: none"> • Road safety • Starting/Switching off • Gear changing • Stopping the vehicle (braking) 	4

11.2.16.T Estimating and Costing	<ul style="list-style-type: none"> • Purchasing • Spare parts • Materials • Labour costing • Time taken • Risks involved • Record keeping • Job cards • Spares • Financial 	4
11.2.17.T Workshop Organization	<ul style="list-style-type: none"> • Workshop layout • Factories Act Abstract • Customer relations 	6

11.2.1.T SAFETY (2 HOURS)

11.2.1.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) describe the procedure for administering first aid for different types of accidents;
- b) explain the methods of fire prevention;
- c) explain the care and storage of special tools and equipment.

11.2.1.T.1.1 First Aid;

- i) shock treatment,
- ii) cuts and bleeding,
- iii) artificial respiration.

11.2.1.T.1.2 Fire control;

- i) procedure in case of fire outbreak.

11.2.1.T.1.3 Special tools and equipment;

- i) electrical equipment,
- ii) measuring tools,
- iii) torque wrench.

11.2.2.T TOOLS AND EQUIPMENT (4 HOURS)

11.2.2.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) list joining tools and equipment;
- b) explain the use of various types of measuring tools;
- c) state the purpose of different types of cutting tools and equipment.

11.2.2.T.1.1 Joining tools and equipment;

- i) riveting equipment,
- ii) welding equipment,
- iii) soldering equipment.

11.2.2.T.1.2 Types of measuring tools;

- i) micrometers,
- ii) vernier Calipers,
- iii) feeler gauges.

11.2.2.T.1.3 Types of cutting tools;

- i) files,
- ii) hacksaws,

- iii) chisels,
- iv) drilling machines,
- v) grinders,
- vi) pliers.

11.2.3.T ENGINE (6 HOURS)

11.2.3.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) differentiate between types of engine construction;
- b) list possible defects and their remedies;
- c) explain procedures for calculating for components wear;
- d) name the materials from which various engine parts are made.

11.2.3.T.1.1 Types of engine construction;

- i) V-engine,
- ii) In-line,
- iii) Horizontally opposed.

11.2.3.T.1.2 Defects and remedies;

- i) wear,
- ii) breakages,
- iii) seizure.

11.2.3.T.1.3 Measurements and calculations for wear;

- i) cylinder bores,
- ii) crankshaft journals,
- iii) piston skirts,
- iv) piston clearance.

11.2.3.T.1.4 Materials;

- i) aluminum alloys,
- ii) cast iron,
- iii) Steel.

11.2.4.T TRANSMISSION (6 HOURS)

11.2.4.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the function of each transmission system component;
- b) describe the operation of each main component;
- c) list possible defects and remedies;
- d) describe the procedure for bleeding the clutch.

11.2.4.T.1.1 Functions of transmission component;
i) gear reduction,
ii) motion transmission.

11.2.4.T.1.2 Operation of main components;
i) gear box,
ii) clutch,
iii) rear axle,
iv) propeller shaft.

11.2.4.T.1.3 Defects and their remedies for;
i) wear,
ii) noise,
iii) clutch slip.

11.2.4.T.1.4 Clutch bleeding procedure

11.2.5.T SUSPENSION SYSTEM (5 HOURS)

11.2.5.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) state the functions of the main parts;
- b) name types of suspensions;
- c) list possible defects and remedies.

11.2.5.T.1.1 Function of the main parts

11.2.5.T.1.2 Types of suspension;
i) torsional bar,
ii) independent suspensions.

11.2.5.T.1.3 Defects and their remedies;
i) leakages,
ii) breakages,
iii) weakness,
iv) wear.

11.2.6.T WHEELS (RIMS, TYRES, TUBES) (4 HOURS)

11.2.6.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) describe the procedure taken in balancing a given wheel;
- b) explain the construction of different types of tyres and rims;

c) list the possible defects found in a tyre, rim or tube.

11.2.6.T.1.1 Wheel balancing;
i) static,
ii) dynamic.

11.2.6.T.1.2 Tyre construction;
i) radial,
ii) cross ply.

11.2.6.T.1.3 Rim construction;
i) spoked,
ii) split,
iii) disc,

11.2.6.T.1.4 Wheel defects and their remedies;
i) tyre defects,
ii) rim defects,
iii) tube defects.

11.2.7.T BRAKES SYSTEMS (6 HOURS)

11.2.7.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the operation of different types of brake systems;
- b) name the possible faults that may affect the operation of brakes;
- c) list the materials used in making different parts of the brake system;
- d) state the required adjustments in the braking system;
- e) describe the procedure followed when bleeding hydraulic brakes.

11.2.7.T.1.1 Operation of brake systems;
i) drum brakes,
ii) disc brakes,
iii) hand brakes.

11.2.7.T.1.2 Faults and their remedies;
i) spongy brakes,
ii) leaks,
iii) fade.

11.2.7.T.1.3 Materials;
i) cast iron,
ii) steel,

- iii) asbestos,
- iv) aluminum.

11.2.7.T.1.4 Adjustments;

- i) hand brake adjustments,
- ii) free play of pedal,
- iii) shoe clearance adjustment.

11.2.7.T.1.5 Brake bleeding

11.2.8.T STEERING SYSTEM (6 HOURS)

11.2.8.T Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the construction of different types of steering box construction;
- b) describe the purpose of different linkages used in steering system;
- c) state the functions of different steering angles;
- d) list the common faults in the steering system.

11.2.8.T.1.1 Construction of steering boxes;

- i) recirculating balls,
- ii) rack and pinion,
- iii) worm and peg.

11.2.8.T.1.2 Steering linkages;

- i) drop arm,
- ii) track rods.

11.2.8.T.1.3 Steering angles;

- i) toe-in and toe-out,
- ii) camber,
- iii) castor,
- iv) K P I (King Pin Inclination).

11.2.8.T.1.4 Faults and their remedies;

- i) play,
- ii) wear.

11.2.9.T FUEL SYSTEMS (4 HOURS)

11.2.9.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the functions and the operation of each main component;
- b) name the possible faults and their remedies.

11.2.9.T.1.1 Main parts;

- i) tank,
- ii) pumps,
- iii) carburetor-simple,
- iv) injection equipment.

11.2.9.T.1.2 Faults and their remedies;

- i) fuel leakages,
- ii) wear,
- iii) blockages.

11.2.10.T IGNITION SYSTEM (4 HOURS)

11.2.10.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the operation of the ignition system;
- b) describe the procedure of carrying out ignition timing.

11.2.10.T.1.1 Operation of the system;

- i) primary circuit,
- ii) secondary circuit.

11.2.10.T.1.2 Ignition timing;

- i) piston position,
- ii) distributor rotor position.

11.2.11.T COOLING SYSTEM (2 HOURS)

11.2.11.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the construction and operation of each main part of cooling system;
- b) list the common faults of the cooling system and their remedies.

11.2.11.T.1.1 Main parts;

- i) radiator,

- ii) water pumps,
- iii) thermostats,
- iv) water jackets,
- v) fins,
- vi) shroud,
- vii) fans.

11.2.11.T.1.2 Common faults and their remedies;

- i) over heating,
- ii) blockages,
- iii) leaks.

11.2.12.T LUBRICATION SYSTEM (4 HOURS)

11.2.12.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) describe the procedure of changing oil and greasing a vehicle;
- b) explain the operations of the major components;
- c) list the common faults and remedies.

11.2.12.T.1.1 Changing oil and greasing;

- i) engine oil,
- ii) gear box oil,
- iii) rear axle oil,
- iv) steering system lubrication,
- v) chassis lubrication.

11.2.12.T.1.2 Operations of major components;

- i) oil pumps,
- ii) filters.

11.2.12.T.1.3 Faults;

- i) low and high Pressure,
- ii) blockages,
- iii) leaks,
- iv) wear.

11.2.13.T ELECTRICAL SYSTEMS (6 HOURS)

11.2.13.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the operation of different vehicle circuits;
- b) explain the maintenance of a battery;

- c) list possible faults;
- d) name different types of electrical connectors.

11.2.13.T.1.1 Operations of given circuits;

- i) charging circuit,
- ii) auxiliary circuits,
- iii) horn circuits,
- iv) wiper circuit.

11.2.13.T.1.2 Battery maintenance;

- i) cleaning,
- ii) charging,
- iii) topping-up.

11.2.13.T.1.3 Possible faults;

- i) sulphation (battery),
- ii) short and open circuits,
- iii) loose connections,
- iv) burnt parts.

11.2.13.T.1.4 Electrical Connectors;

- i) terminal clips,
- ii) joints.

11.2.14.T BASIC PANEL BEATING AND SPRAY PAINTING (6 HOURS)

11.2.14.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) state the safety rules observed when panel beating and spray painting;
- b) list the tools and equipment used in panel beating and spray beating;
- c) explain the use of different materials;
- d) describe the proper procedures used in panel beating and spray painting;
- e) explain how different paint colours are obtained.

11.2.14.T.1.1. Safety rules;

- i) in painting,
- ii) in panel beating.

11.2.14.T.1.2 Tools and equipment;

- i) dollies,

- ii) spoons,
- iii) hammers,
- v) spray gun,
- v) compressors,
- vi) files,
- vii) body jack.

11.2.14.T.13 Materials;

- i) fillers,
- ii) paints,
- iii) primers,
- v) thinners,
- v) emery cloth.

11.2.14.T.14 Procedures for panel beating and spray painting;

- i) sanding,
- ii) filling,
- iii) spraying.

11.2.14.T.15 Procedure of mixing paints

11.2.15.T BASIC DRIVING TECHNIQUES (4 HOURS)

11.2.15.T1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) read and interpret road signs and highway code;
- b) describe the procedures for starting and switching off the engine;
- c) explain how different gears are obtained;
- d) describe the procedure for stopping the vehicle.

11.2.15.T.11 Road signs and highway code

11.2.15.T.12 Starting and switching off an engine;

- i) ignition switch,
- ii) fuel shut-off,
- iii) shorting.

11.2.15.T.13 Gear changing;

- i) neutral gear,
- ii) forward gears,
- iii) reverse.

11.2.15.T.14 Stopping the vehicle;

- i) braking,
- ii) balancing clutch,
- iii) engine braking.

11.2.16.T ESTIMATING AND COSTING (4 HOURS)

11.2.16.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) estimate the cost of spares and materials required for a given job;
- b) explain the procedure of purchasing spare parts and materials;
- c) determine the cost of labour for a given job;
- d) explain the need for keeping workshop records.

11.2.16.T.11 Cost of spare parts and materials;

- i) quantity,
- ii) quality.

11.2.16.T.12 Purchasing spare parts and materials;

- i) cash,
- ii) credit facilities.

11.2.16.T.13 Labour costing;

- i) time taken,
- ii) risk involved.

11.2.16.T.14 Keeping workshop records;

- i) financial records,
- ii) job cards,
- iii) bin cards.

11.2.17.T WORKSHOP ORGANIZATION (6 HOURS)

11.2.17.T.1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain factors to be considered when laying-out a workshop;
- b) list regulations within the Factories act related to his occupation;
- c) state the necessary factors in building good customer relations.

11.2.17.T.11 Workshop lay-out;

- i) equipment,
- ii) movement flow,
- iii) storage,

iv) workshop location in relation to other buildings.

11.2.17.T.12 Factories Act;

- i) pollution control,
- ii) safety,
- iii) ventilation.

11.2.17.T.13 Customer relations;

- i) reception,
- ii) guarantee.

11.0 MOTOR VEHICLE MECHANIC TRADE PRACTICE

11.01 INTRODUCTION

The Motor Vehicle Trade Practice is expected to impart practical skills to the trainees in order to be competent artisans.

The subject is intended to be progressively covered. It involves two stages. During the first year, the development of basic skills is carried out, progressing to the second year for more difficult skill development. This is a core subject of the whole course and therefore planned to take 90% of trade's training time.

11.02 GENERAL OBJECTIVES

At the end of this subject, the trainee should be able to:-

- a) observe safety while repairing vehicles;
- b) visually inspect vehicle systems and parts for damages and wear;
- c) repair and replace worn or damaged vehicle units and parts;
- d) demonstrate good working habits by keeping workshop, tools, equipment and materials safe and in good conditions;
- e) keep the necessary workshop records;
- f) organise a workshop both for efficiency of work and for the safety of the workers.