

AUTOMOBILE MECHANICS

Assessment Package

National Vocational
Certificate Level 2

Version 1 - March 2014

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Document Version

March, 2014

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1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PREPARE TO CARRY OUT AUTOMOBILE MECHANIC WORK		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Prepare to carry out Automobile Mechanic work 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your assessor may have during the practical assessment. 		
Other Requirements					<ul style="list-style-type: none"> N/A 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **half an hour** timeframe:

Just imagine that you have to perform Automobile Mechanic and you have to perform the following task to carry out this Automobile Mechanic work.

- Select and perform maintenance on tools, equipment and consumables

Important Note: The following general performance criteria will be followed and performed in all the tasks (where applicable) by the candidate in order to meet this standard.

- ✓ Follow health and safety procedure as per the requirements of given task
- ✓ Prepare work station as per the requirements of task
- ✓ Select tools/ equipment as per the requirements of task
- ✓ Report to supervisor in case of any contingency after taking necessary actions
- ✓ Complete the work by following sequence of operations
- ✓ Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of 'Initiating Automobile Work' under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Select and perform maintenance on tools, equipment and consumables <ul style="list-style-type: none"> ✓ Select and wear personal protective equipment (PPEs) before initiating Automobile work ✓ Select all the tools, equipment and consumables before initiating Automobile work ✓ Service and replace the damaged tools, equipment and consumables before initiating Automobile work • General performance criteria: <ul style="list-style-type: none"> ✓ Follow health and safety procedure as per the requirements of given task ✓ Prepare work station as per the requirements of task ✓ Select tools/ equipment as per the requirements of task ✓ Report to supervisor in case of any contingency after taking necessary actions ✓ Complete the work by following sequence of operations ✓ Perform task(s) within standard timeframe
2. Other requirement	NA
3. Answer any questions your assessor may have during the practical assessment	My answers to questions are correct and demonstrate my understanding of the topics and their application.

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of 'Initiating Automobile Work' under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Select and perform maintenance on tools, equipment and consumables	Selected and wore personal protective equipment (PPEs) before initiating Automobile work			
	Selected all the tools, equipment and consumables before initiating Automobile work			
	Serviced and replaced the damaged tools, equipment and consumables before initiating Automobile work			
General performance criteria	Followed health and safety procedure as per the requirements of given task			
	Prepared work station as per the requirements of task			
	Selected tools/ equipment as per the requirements of task			
	Reported to supervisor in case of any contingency after taking necessary actions			
	Completed the work by following sequence of operations			
	Performed task(s) within standard timeframe			
2. Other requirement	NA			

<p>2. Answer any questions the assessor may have during the practical assessment</p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.</p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Personal protective equipment (PPEs)	5
2	Complete tool kit	5
3	Testing equipment (complete range)	5

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Insulation tapes	5
2	De-carbonizing agent (WD40 etc.)	5
3	Emery papers	5
4	Waste Cotton	5 Kg



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>MAINTAIN BRAKE SYSTEM</h1>																				
Qualification Automobile Mechanics CS Code: Level: 2 Credit: 13 Version: 1																					
CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgment Guide 4. List of required tools/equipment, material and context of assessment																				
ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																				
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>																				
	Assessor's Name Assessor's Code Assessor's Signature Date <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> DD MM YYYY																				
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	Gender Male <input type="checkbox"/> Female <input type="checkbox"/> Transgender <input type="checkbox"/>																				
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1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN BRAKE SYSTEM		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Perform brake service of the vehicle as per vehicle's manual Perform the service of vehicle's ABS (Anti-lock Brake System) as per vehicle's manual 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your Assessor may have during the practical assessment. 		
Other Requirements			✓		<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **four hours** timeframe:

- Perform brake service of the vehicle as per vehicle's manual
- Perform the service of vehicle's ABS (Anti-lock Brake System) as per vehicle's manual

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of Maintain Brake System under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Perform brake service of the vehicle as per vehicle's manual <ul style="list-style-type: none"> ✓ Diagnose the faults in the brake system through Brake Tester ✓ Dismantle the disc pads, brake shoes, brake master cylinder and wheel cylinder of the brake system ✓ Replace/Rebuild disc pads, brake shoes, master cylinder and wheel cylinder washer of the brake system ✓ Adjust brake shoes of the vehicle with the help of adjuster screw ✓ Perform air bleeding/removing of the brake system ✓ Adjust the parking/hand brake system ✓ Conduct the road test to verify function of the vehicle brake after the brake service • Perform the service of vehicle's ABS (Anti-lock Brake System) as per vehicle's manual <ul style="list-style-type: none"> ✓ Diagnose the ABS/Traction Control System (TCS)/Vehicle Speed Sensor (VSS) and Data Trouble Codes (DTC) with the help of Universal Diagnostic Scanner (UDS) ✓ Replace/clean the vehicle's Traction Control System (TCS) / Vehicle Speed Sensor (VSS) with the help of de-carbonizing agent (WD40 etc.) ✓ Refresh ABS (Anti-lock Brake System) with the help of Universal Diagnostic Scanner (UDS) to verify electronic system of the vehicle ✓ Conduct the road test to verify function of the vehicle brake after Anti-lock Brake System (ABS) service
<p>2. Other requirements</p>	<ul style="list-style-type: none"> • NA
<p>3. Answer any questions your assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of Maintain Brake System under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Perform brake service of the vehicle as per vehicle's manual	Diagnosed the faults in the brake system through Brake Tester			
	Dismantled the disc pads, brake shoes, brake master cylinder and wheel cylinder of the brake system			
	Replaced/Rebuilt disc pads, brake shoes, master cylinder and wheel cylinder washer of the brake system			
	Adjusted brake shoes of the vehicle with the help of adjuster screw			
	Performed air bleeding/removing of the brake system			
	Adjusted the parking/hand brake system			
	Conducted the road test to verify function of the vehicle brake after the brake service			
Perform the service of vehicle's ABS (Anti-lock Brake System)	Diagnosed the ABS/Traction Control System (TCS)/Vehicle Speed Sensor (VSS) and Data Trouble Codes (DTC) with the help of Universal Diagnostic Scanner (UDS)			
	Replaced/cleaned the vehicle's Traction Control System (TCS) / Vehicle Speed Sensor (VSS) with the help of de-carbonizing agent (WD40 etc.)			
	Refreshed ABS (Anti-lock Brake System) with the help of Universal Diagnostic Scanner (UDS) to verify electronic system of the vehicle			
	Conducted the road test to verify function of the vehicle brake after Anti-lock Brake System (ABS) service			
2. Other requirements	NA			

<p>3. Answer any questions the assessor may have during the practical assessment</p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.</p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time/simulated environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Vehicle	05
2	Garage Jacks	05
3	Safety Stands	20
4	SST Kit	05
5	Bench Vice	05
6	Spanners Set	05
7	Socket Set	05
8	Car Creeper	05
9	Personal Protective Equipment (PPEs)	05
10	Multi Meter	05
11	Test lamp	05
12	Universal Diagnostic Scanner (UDS)	05
13	Seat Cover Set	05
14	Fender Cover Set	05
15	Universal Puller Kit	
16	Brake Tester	05

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Break Oil	10
2	De-carbonizing agent (WD40 etc.)	05
3	Brake Master Cylinder Repair Kit	05
4	Wheel Cylinder Washer Set	05
5	Break Shoes	05 Set
6	Disc Pads	05 Set
7	Emery Papers	20
8	Waste Cotton	05 Kg



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1 style="margin: 0;">MAINTAIN ENGINE</h1>
Qualification Automobile Mechanics CS Code: Level: 2 Credit: 16 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgment Guide 4. List of required tools/equipment, material and context of assessment
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ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																		
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CANDIDATE DETAILS	Candidate's Name <small style="margin-left: 100px;">First Name</small> <small style="margin-left: 200px;">Last Name</small>																				
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	Candidate's Signature																				

ASSESSMENT RESULTS SUMMARY FORM	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTCC
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1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN BRAKE SYSTEM		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Perform engine services of the vehicle as per vehicle's manual Diagnose the faults of cylinder head and cylinder block components as per vehicle's manual 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your Assessor may have during the practical assessment. 		
Other Requirements			✓		<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **04 hours** timeframe:

- Perform engine services of the vehicle as per vehicle's manual
- Diagnose the faults of cylinder head and cylinder block components as per vehicle's manual

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of Maintain Engine under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Perform engine services of the vehicle as per vehicle's manual <ul style="list-style-type: none"> ✓ Diagnose the faults in the engine for abnormal noise by using Stethoscope, oil leakages and over heating & water leakages by using Radiator Pressure Tester ✓ Conduct inlet manifold vacuum test by using Vacuum gauge ✓ Adjust the valve clearance of the engine with feeler gauge ✓ Replace Tappet Cover & intake manifold gasket from cylinder head ✓ Clean the spark plug of the ignition system with spark plug cleaner ✓ Re-adjust the Spark Plug Electrode Gap by using feeler gauge ✓ Change the timing oil seals of the engine ✓ Change the radiator coolant ✓ Adjust tension of the radiator fan belt ✓ Replace oil pan gasket of the vehicle ✓ Change oil filter and engine oil of the vehicle • Diagnose the faults of cylinder head and cylinder block components as per vehicle's manual <ul style="list-style-type: none"> ✓ Conduct the engine cylinder compression test with compression tester to check the engine compression ✓ Scan the Electronic Fuel Injection (EFI) system with the help of Universal Diagnostic Scanner (UDS) ✓ Clean defective sensors of engine with de-carbonizing agent (WD40 etc. ✓ Replace the crank shaft position sensor of the engine
<p>2. Other Requirement</p>	
<p>3. Answer any questions your assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of Maintain Engine under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Perform engine services of the vehicle as per vehicle's manual	Diagnosed the faults in the engine for abnormal noise by using Stethoscope, oil leakages and over heating & water leakages by using Radiator Pressure Tester			
	Conducted inlet manifold vacuum test by using Vacuum gauge			
	Adjusted the valve clearance of the engine with feeler gauge			
	Replaced Tappet Cover & intake manifold gasket from cylinder head			
	Cleaned the spark plug of the ignition system with spark plug cleaner			
	Re-adjusted the Spark Plug Electrode Gap by using feeler gauge			
	Changed the timing oil seals of the engine			
	Changed the radiator coolant			
	Adjusted tension of the radiator fan belt			
	Replaced oil pan gasket of the vehicle			
	Changed oil filter and engine oil of the vehicle			
Diagnose the faults of cylinder head and cylinder block components as per vehicle's manual	Conducted the engine cylinder compression test with compression tester to check the engine compression			
	Scanned the Electronic Fuel Injection (EFI) system with the help of Universal Diagnostic Scanner (UDS)			
	Cleaned defective sensors of engine with de-carbonizing agent (WD40 etc.)			
	Replaced the crank shaft position sensor of the engine			
2. Other requirements	NA			

3. Answer any questions the assessor may have during the practical assessment

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time/simulated environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Vehicle	05
2	Spanners Set	05
3	Socket Set	05
4	Car Creeper	05
5	SST Kit	05
6	Multi meter	05
7	Test lamp	05
8	Universal Diagnostic Scanner (UDS)	05
9	Seat Cover Set	05
10	Fender Cover Set	05
11	Screw Driver Set	05
12	Compression Gauge	05
13	Radiator Pressure Tester	05
14	Feeler Gauge	05
15	Oil Pressure Gauge	05
16	Torque Wrench	05
17	Car Lift	05
18	Vacuum gauge	05
19	Allen Keys Set	05

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Timing Seals	05
2	Engine Oil	20 L
3	Oil Filter	05
4	Valve Inlet Exhaust Set	05
5	Main Bearings Set	05
6	Big End Bearings Set	05
7	Piston Rings Set	05
8	Waste Cotton	05 Kg
9	Personal Protective Equipment Set (PPEs)	05

1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	PORTFOLIO	OBSERVATION	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN FUEL SYSTEM	COMPETENT	NOT YET COMPETENT
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Diagnose faults of the vehicle's fuel system and perform its services as per vehicle's manual 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your Assessor may have during the practical assessment. 		
Other Requirements			✓		<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **three hours** timeframe:

- Diagnose faults of the vehicle's fuel system and perform its services as per vehicle's manual

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of Maintain Fuel System under observation by an assessor	During a practical assessment, under observation by an assessor, I will correctly : <ul style="list-style-type: none"> • Diagnose faults of the vehicle's fuel system and perform its services as per vehicle's manual <ul style="list-style-type: none"> ✓ Diagnose the fuel system with the help of Universal Diagnostic Scanner (UDS) ✓ Clean and test the fuel injectors with the help of injector cleaner and tester ✓ Perform the services of Throttle Body, Idle Air Control Valve (IACV) and Throttle Position (TP) sensor with the help of De-carbonizing Agent (WD-40 etc.) ✓ Replace the fuel filter of the fuel system ✓ Replace the air filter of air cleaner assembly ✓ Clean the oxygen (O₂) sensor, Manifold Absolute Pressure (MAP) sensor and intake air temperature sensor with the help of De-carbonizing Agent (WD-40 etc.) ✓ Replace the Coolant Temperature sensor of the engine ✓ Refresh Fuel System with the help of Universal Diagnostic Scanner (UDS) ✓ Conduct a road test to verify the function of vehicle's fuel system
2. Other requirements	NA
2. Answer any questions your assessor may have during the practical assessment	My answers to questions are correct and demonstrate my understanding of the topics and their application.

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of Maintain Fuel System under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Diagnose faults of the vehicle's fuel system and perform services its service as per vehicle's manual	Diagnosed the fuel system with the help of Universal Diagnostic Scanner (UDS)			
	Cleaned and tested the fuel injectors with the help of injector cleaner and tester			
	Performed the services of Throttle Body, Idle Air Control Valve (IACV) and Throttle Position (TP) sensor with the help of De-carbonizing Agent (WD-40 etc.)			
	Replaced the fuel filter of the fuel system			
	Replaced the air filter of air cleaner assembly			
	Cleaned the oxygen (O ₂) sensor, Manifold Absolute Pressure (MAP) sensor and intake air temperature sensor with the help of De-carbonizing Agent (WD-40 etc.)			
	Replaced the Coolant Temperature sensor of the engine			
	Refreshed Fuel System with the help of Universal Diagnostic Scanner (UDS)			
	Conducted a road test to verify the function of vehicle's fuel system			
2. Other requirements	NA			

<p>3. Answer any questions the assessor may have during the practical assessment</p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.</p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time/simulated environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Vehicle	05
2	SST Kit	05
3	Spanners Set	05
4	Socket Set	05
5	Car Service Creeper	05
6	Personal Protective Equipment Set (PPEs)	05
7	Multi meter	05
8	Test lamp	05
9	Universal Diagnostic Scanner (UDS)	05
10	Seat Cover Set	05
11	Fender Cover Set	05
12	Screw Driver Set	05
13	Injector Cleaner & Tester	05
14	Allen Keys Set	05

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Injector Seals Set	05
2	Petrol for cleaning & testing	20 L
3	Fuel Filter	05
4	Coolant Temperature Sensor	05
5	De-carbonizing Agent (WD-40 etc.)	05
6	Waste Cotton	05 Kg
7	Air Filter	05



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification
Automobile Mechanics
CS Code:
Level: 2
Credit: 8
Version: 1

PERFORM IGNITION SYSTEM SERVICE

CONTENTS

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent	<input type="checkbox"/>	Not Yet Competent	<input type="checkbox"/>																			
Assessment	<input type="checkbox"/>	Re-Assessment	<input type="checkbox"/>																			
Assessor's Name	_____	Assessor's Code	_____																			
Assessor's Signature	_____	Date	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="text-align: center;">DD</td> <td style="text-align: center;">MM</td> <td colspan="6"></td> <td style="text-align: center;">YYYY</td> </tr> </table>											DD	MM							YYYY
DD	MM							YYYY														

CANDIDATE DETAILS

Candidate's Name _____

First Name
Last Name

Father's Name _____

Institute Name and District _____

CNIC/BFORM #

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Registration Number issued by Assessment Body _____

Gender Male Female Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature _____

ASSESSMENT RESULTS SUMMARY FORM

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

NAVTTCC OFFICE ONLY

1. DATE FORM RECEIVED: <table border="1" style="display: inline-table; border-collapse: collapse; width: 100px; height: 20px;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="text-align: center;">DD</td><td style="text-align: center;">MM</td><td colspan="6"></td><td style="text-align: center;">YYYY</td></tr></table>											DD	MM							YYYY	2. DATE ENTERED INTO DATABASE: <table border="1" style="display: inline-table; border-collapse: collapse; width: 100px; height: 20px;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="text-align: center;">DD</td><td style="text-align: center;">MM</td><td colspan="6"></td><td style="text-align: center;">YYYY</td></tr></table>											DD	MM							YYYY
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1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	PORTFOLIO	OBSERVATION	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM IGNITION SYSTEM SERVICE	COMPETENT	NOT YET COMPETENT
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Diagnose and remove faults of ignition switch and ignition coil of ignition system as per vehicle's manual Service the vehicle's battery as per vehicle's manual Service the vehicle's spark plugs as per vehicle's manual Service the vehicle's distributor as per vehicle's manual Service the vehicle's emission control system as per vehicle's manual 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your Assessor may have during the practical assessment. 		
Other Requirements			✓		<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **four hours** timeframe:

- Diagnose and remove faults of ignition switch and ignition coil of ignition system as per vehicle's manual
- Service the vehicle's battery as per vehicle's manual
- Service the vehicle's spark plugs as per vehicle's manual
- Service the vehicle's distributor as per vehicle's manual
- Service the vehicle's emission control system as per vehicle's manual.

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of Performing Ignition System Service under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> • Diagnose and remove faults of ignition switch and ignition coil of ignition system as per vehicle's manual <ul style="list-style-type: none"> ✓ Remove the ignition switch from the steering column ✓ Check the ignition switch for connectivity with multi meter ✓ Remove the ignition coil from the engine compartment and examine its output with multi meter ✓ Decarbonize the ignition switch connections with De-carbonizing Agent (WD-40 etc.) ✓ Repair the ignition switch connections with soldering iron ✓ Refit the ignition coil back to the engine compartment ✓ Refit the ignition switch back to the steering column • Service the vehicle's battery as per vehicle's manual <ul style="list-style-type: none"> ✓ Remove the battery from the vehicle ✓ Top-up the battery with electrolyte ✓ Test specific gravity of battery with Hydrometer ✓ De-sulphate the battery terminals and terminals post for current flow with cleaning agent ✓ Refit the battery in the vehicle • Service the vehicle's spark plugs as per vehicle's manual <ul style="list-style-type: none"> ✓ Remove the spark plug wires/leads from the engine ✓ Check the connectivity of spark plug wires/leads with the help of multi meter ✓ Clean the spark plugs with spark plug cleaner ✓ Adjust the spark plugs' gap with feeler gauge ✓ Test for spark plugs' sparking with spark plug tester ✓ Refit spark plug wires/leads according to firing order • Service the vehicle's distributor as per vehicle's manual <ul style="list-style-type: none"> ✓ Remove the distributor cap from the distributor ✓ Remove and clean Contact Breaker (CB) point of the distributor ✓ Refit Contact Breaker (CB) point and adjust its gap with feeler gauge ✓ Refit distributor cap and adjust the dwell angle for ignition timing with Ignition Timing Light Gun ✓ Conduct road test to verify the function of ignition system • Service the vehicle's emission control system as per vehicle's manual <ul style="list-style-type: none"> ✓ Remove, clean, test and refit the Positive Crankcase Ventilation (PCV) valve of the engine ✓ Remove, clean and refit the Exhaust Gas Recirculation (EGR) valve of the engine ✓ Remove, clean and refit the oxygen (O2) sensor from the exhaust manifold ✓ Analyse exhaust gas of exhaust system with Exhaust Gas Analyser/CO Tester as per National Environmental Quality (NEQ) standards ✓ Conduct a road test to verify the function of emission control system
<p>2. Other requirements</p>	<p>NA</p>

3. Answer any questions your assessor may have during the practical assessment	My answers to questions are correct and demonstrate my understanding of the topics and their application.
---	---

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of Performing Ignition System Service under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Diagnose and remove faults of ignition switch and ignition coil of ignition system as per vehicle's manual	Removed the ignition switch from the steering column			
	Checked the ignition switch for connectivity with multi meter			
	Removed the ignition coil from the engine compartment and examine its output with multi meter			
	Decarbonized the ignition switch connections with De-carbonizing Agent (WD-40 etc.)			
	Repaired the ignition switch connections with soldering iron			
	Refitted the ignition coil back to the engine compartment			
	Refitted the ignition switch back to the steering column			
Service the vehicle's battery as per vehicle's manual	Removed the battery from the vehicle			
	Topped-up the battery with electrolyte			
	Tested specific gravity of battery with Hydrometer			
	De-sulphated the battery terminals and terminals post for current flow with cleaning agent			
	Refitted the battery in the vehicle			
Service the vehicle's spark plugs as per vehicle's manual	Removed the spark plug wires/leads from the engine			
	Checked the connectivity of spark plug wires/leads with the help of multi meter			
	Cleaned the spark plugs with spark plug cleaner			
	Adjusted the spark plugs' gap with feeler gauge			
	Tested for spark plugs' sparking with spark plug tester			
	Refitted spark plug wires/leads according to firing order			
Service the vehicle's distributor as per vehicle's manual	Removed the distributor cap from the distributor			
	Removed and clean Contact Breaker (CB) point of the distributor			
	Refitted Contact Breaker (CB) point and adjust its gap with feeler gauge			
	Refitted distributor cap and adjust the dwell angle for ignition timing with Ignition Timing Light Gun			
	Conducted road test to verify the function of ignition			

Service the vehicle's emission control system as per vehicle's manual	Removed, cleaned, tested and refitted the Positive Crankcase Ventilation (PCV) valve of the engine			
	Removed, cleaned and refitted the Exhaust Gas Recirculation (EGR) valve of the engine			
	Removed, cleaned and refitted the oxygen (O2) sensor from the exhaust manifold			
	Analysed exhaust gas of exhaust system with Exhaust Gas Analyser/CO Tester as per National Environmental Quality (NEQ) standards			
	Conducted a road test to verify the function of emission control system			
2. Other Requirements	NA			

<p>3. Answer any questions the assessor may have during the practical assessment</p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.</p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Vehicle	05
2	Universal Diagnostic scanner (UDS)	05
3	Exhaust gas analyser	05
4	Multi meter	05
5	Repair manual	05
6	Test lamp	05
7	Spanner set	05
8	Socket set	05
9	Magnetic stick	05
10	Hydro meter	05
11	Personal Protection Equipment (PPEs) set	05
12	Ignition Timing Light Gun	05
13	Screw driver Flat & Philip set	05
14	Allen key set	05
15	Star key set	05
16	Feeler gauge	05
17	Spark plug cleaner & tester	05
18	Soldering iron	05
19	Battery load tester	05
20	Plier Set	05

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Electrolyte	05 L
2	Cotton waste	05 Kg
3	Cotton gloves	12
4	Soldering coil	05 coil
5	Soldering paste	05 packet
6	Emery paper	10
7	De-carbonizing Agent (WD-40 etc.)	05



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>MAINTAIN SUSPENSION AND STEERING SYSTEM</h1>																				
Qualification Automobile Mechanics CS Code: Level: 2 Credit: 8 Version: 1																					
CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgment Guide 4. List of required tools/equipment, material and context of assessment																				
ASSESSMENT AND ASSESSOR DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>																				
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	Father's Name																				
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1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN SUSPENSION/STEERING SYSTEMS		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Diagnose and remove faults of steering system of the vehicle as per vehicle's manual Diagnose and remove faults of suspension system of the vehicle as per vehicle's manual 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your Assessor may have during the practical assessment. 		
Other Requirements			✓		<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **four hours** timeframe:

- Diagnose and remove faults of steering system of the vehicle as per vehicle's manual
- Diagnose and remove faults of suspension system of the vehicle as per vehicle's manual

ACTIVITIES	CANDIDATE RESPONSE
<p>1. . Complete practical task of Maintain Suspension/Steering Systems under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Diagnose and remove faults of steering system of the vehicle as per vehicle's manual <ul style="list-style-type: none"> ✓ Adjust drive belt tension of power steering pump of the steering system ✓ Grease the steering column bushes to reduce the hardness of steering system ✓ Replace/repair damaged/loosed tie rod ends of the steering system ✓ Replace/repair steering rack and pinion assembly of the steering system ✓ Diagnose the motor faults of Electric Power Steering (EPS) of the steering system ✓ Replace the faulty motor of Electric Power Steering (EPS) of the steering system ✓ Refresh the Electric Power Steering (EPS) system with the help of Universal Diagnostic Scanner (UDS) ✓ Conduct road test to verify the function of steering system • Diagnose and remove faults of suspension system of the vehicle as per vehicle's manual <ul style="list-style-type: none"> ✓ Replace sway/stabilizer bar bushes of the suspension system ✓ Replace/repair lower and upper suspension arms of the suspension system ✓ Replace Z links of the suspension system ✓ Replace front and back shock absorber mountings of the suspension system ✓ Grease lower and upper arm balls joints of the suspension system ✓ Grease wheel hub bearings of the suspension system ✓ Replace leaked hub seals of the suspension system ✓ Replace Leaf Spring Bushes of suspension system ✓ Conduct road test to verify the function of suspension system
<p>2. Other requirements</p>	<p>NA</p>
<p>3. Answer any questions your assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

3

ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of Maintain Suspension/Steering Systems under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Diagnose and remove faults of steering system of the vehicle as per vehicle's manual	Adjusted drive belt tension of power steering pump of the steering system			
	Greased the steering column bushes to reduce the hardness of steering system			
	Replaced/repaired damaged/loosed tie rod ends of the steering system			
	Replaced/repaired steering rack and pinion assembly of the steering system			
	Diagnosed the motor faults of Electric Power Steering (EPS) of the steering system			
	Replaced the faulty motor of Electric Power Steering (EPS) of the steering system			
	Refreshed the Electric Power Steering (EPS) system with the help of Universal Diagnostic Scanner (UDS)			
	Conducted road test to verify the function of steering system			
Diagnose and remove faults of suspension system of the vehicle as per vehicle's manual	Replaced sway/stabilizer bar bushes of the suspension system			
	Replaced/repaired lower and upper suspension arms of the suspension system			
	Replaced Z links of the suspension system			
	Replaced front and back shock absorber mountings of the suspension system			
	Greased lower and upper arm balls joints of the suspension system			
	Greased wheel hub bearings of the suspension system			
	Replaced leaked hub seals of the suspension system			
	Replaced Leaf Spring Bushes of suspension system			
Conducted road test to verify the function of suspension system				
2. Other Requirements	NA			

<p>3. Answer any questions the assessor may have during the practical assessment</p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.</p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Vehicle	05
2	Universal Diagnostic Scanner (UDS)	05
3	Mechanical Jack (Scissor type)	05
4	Jack stand	20
5	Hammers	05
6	Ball joint opener	05
7	Wheel spanner	05
8	Spanner set	05
9	Socket set	05
10	Screw driver set	05
11	Torque wrench	05
12	Grease gun	05
13	Circlip plier inside	05
14	Circlip plier out side	05
15	Combination plier	05
16	Nose plier	05

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Cotton waste	05 Kg
2	Cotton gloves	12
3	Grease	1 Kg
4	Sway/stabilizer bar bushes	5 set
5	Lower and upper suspension arms bushes	5 set
6	Leaked hub seals	5 set
7	Leaf Spring Bushes	5 set
8	Front and back shock absorber mountings	5 set



ASSESSMENT MATERIAL EVIDENCE GUIDE	<h1>MAINTAIN DRIVE LINE SYSTEMS</h1>																						
Qualification Automobile Mechanics CS Code: Level: 2 Credit: 7 Version: 1																							
CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgment Guide 4. List of required tools/equipment, material and context of assessment																						
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1

ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: MAINTAIN DRIVE LINE SYSTEMS		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> Perform services of manual drive line system of the vehicle as per vehicle's manual Perform services of automatic drive line system of the vehicle as per vehicle's manual 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer all questions your Assessor may have during the practical assessment. 		
Other Requirements			✓		<ul style="list-style-type: none"> N/A 		

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CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **four hours** timeframe:

- Perform services of manual drive line system of the vehicle as per vehicle's manual
- Perform services of automatic drive line system of the vehicle as per vehicle's manual

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task of Maintain Drive Line Systems under observation by an assessor</p>	<p>During a practical assessment, under observation by an assessor, I will correctly:</p> <ul style="list-style-type: none"> • Perform services of manual drive line system of the vehicle as per vehicle's manual <ul style="list-style-type: none"> ✓ Check the manual drive line system of the vehicle through road test ✓ Remove the faulty clutch set (clutch plate, pressure plate, clutch release bearing) from the fly wheel ✓ Replace the clutch set (clutch plate, pressure plate, clutch release bearing) and adjust the clutch system ✓ Replace the leaked differential seal ✓ Grease the universal joints of drive shaft ✓ Replace the damaged gear lever bushes ✓ Change the gear oil and differential oil of the vehicle ✓ Conduct a road test to verify the function of manual drive line system • Perform services of automatic drive line system of the vehicle as per vehicle's manual <ul style="list-style-type: none"> ✓ Scan the vehicle with the help of Universal Diagnostic Scanner (UDS) ✓ Remove, clean and refit the Vehicle Speed Sensor (VSS) ✓ Replace the neutral switch of automatic transmission ✓ Wash the automatic transmission filter with the help of kerosene oil/petrol ✓ Change the Automatic Transmission Fluid (ATF) ✓ Grease the Ball & Trunnion Joint/CV Joint ✓ Refresh the vehicle with the help of Universal Diagnostic Scanner (UDS) ✓ Conduct a road test to verify the function of automatic drive line system
<p>2. Other Requirements</p>	<p>NA</p>
<p>3. Answer any questions your assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

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ASSESSOR JUDGEMENT GUIDE

Candidate's Name Father's Name.....

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task of Maintain Fuel System under observation by an assessor	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Perform services of manual drive line system of the vehicle as per vehicle's manual	Checked the manual drive line system of the vehicle through road test			
	Removed the faulty clutch set (clutch plate, pressure plate, clutch release bearing) from the fly wheel			
	Replaced the clutch set (clutch plate, pressure plate, clutch release bearing) and adjust the clutch system			
	Replaced the leaked differential seal			
	Greased of Universal Joints of Drive Shaft			
	Replaced the damaged gear lever bushes			
	Changed the gear oil and differential oil of the vehicle			
	Conducted a road test to verify the function of manual drive line system			
Perform services of automatic drive line system of the vehicle as per vehicle's manual	Scanned the vehicle with the help of Universal Diagnostic Scanner (UDS)			
	Removed, cleaned and refitted the Vehicle Speed Sensor (VSS)			
	Replaced the neutral switch of automatic transmission			
	Washed the automatic transmission filter with the help of kerosene oil/petrol			
	Changed the Automatic Transmission Fluid (ATF)			
	Greased the Ball & Trunnion Joint/CV Joint			
	Refreshed the vehicle with the help of Universal Diagnostic Scanner (UDS)			
	Conducted a road test to verify the function of automatic drive line system			
2. Other Requirements	NA			

<p>3. Answer any questions the assessor may have during the practical assessment</p>	<p>Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p>Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.</p>			
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LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time/simulated environment.

2. List of tools and equipment required (for five candidates)		
S. No	Items	Quantity
1	Vehicle	05
2	SST Kit	05
3	Spanners Set	05
4	Socket Set	05
5	Car Creeper	05
6	Personal Protective Equipment Set (PPEs)	05
7	Multi meter	05
8	Test lamp	05
9	Universal Diagnostic Scanner (UDS)	05
10	Seat Cover Set	05
11	Fender Cover Set	05
12	Screw Driver Set	05
13	Allen Keys Set	05
14	Oil Drainer	05
15	Oil Gun	05
16	Grease Gun	05

3. List of consumable items required (for five candidates)		
S. No	Items	Quantity
1	Clutch Plate	05
2	Pressure Plate	05
3	Clutch Release Bearing	05
4	Gear Oil	10 L
5	Automatic Transmission Oil	10 L
6	Neutral Switch	05
7	Differential Seal	05
8	Waste Cotton	05 Kg
9	Grease	01 Kg
10	Differential oil	10 L

National Vocational and Technical Training Commission (NAV TTC)

 5th Floor Evacuee Trust Complex Sector F-5/1, Islamabad.

 +92 51 9044 04

 +92 51 9044 04

 info@navttc.org

 www.navttc.org