

Competitor Instructions – Automobile Technology

Competitor Name	Competitor No	Task
.....	A

Competitor Instructions

Task A	Petrol Engine Tune Up
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Familiarization Time	5 minutes
Task Duration	55 minutes
Total Time	60 minutes

Marking Summary		
Section		Possible Mark
1.	Preparation.	100
2.	Tune Up.	200
3.	Checks and measure fuel injector.	100
4.	Repair engine to start and run.	150
5.	Correct and repair drivability problem.	250
6.	Check and measure Throttle Position Sensor	200
Task Total		1000

You are required to

- Observe occupational health & safety standards
- Only ask necessary questions
- Not speak to the public while competing
- Comply with Experts instructions
- Ensure Competitor Number on all forms
- Use appropriate tools and procedures
- Complete all instructions on the next page

Remark: Vehicle/model : Toyota Corolla Great 96

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1.	The engine will not run! Before this problem the engine had rough operation and high fuel consumption.
2.	The vehicle recently left the repair shop, and now it seems to be worse!
3.	You may use tools and equipment you have, and is provide for you to diagnose and repair problems found.
4.	Ask the judge for repair-parts needed and show him what you have found.
5.	After the engine is running satisfactory and no trouble codes are present, proceed to the items listed below:
6.	Check the throttle positioning sensor using Intelligent Tester and record your findings.
7.	Note : Do not try to repair a defective part! (Ask first)

Form 5 – Automobile Technology

Competitor Name	Competitor No	Task	Marking Scale
		A	Petrol Engine Tune

Time Keeping

Familiarization		Competition		Breaks			
Start		Start		Start			
Stop		Stop		Stop			

Experts Signatures

1	2
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Competitor Name	Competitor No	Task	Marking Scale
		A	Petrol Engine Tune

1.	Preparation	Max	Actual	Comments
1.1	Checked all equipment first	5		
1.2	Checked all instructions	5		
1.3	Selected the correct test equipment	15		
1.4	Used logical working procedure	10		
1.5	Proper tools handling	10		
1.6	Used logical manual book	10		
1.7	Clean up the working area	10		
1.8	Clean up tools and equipment	15		
1.9	Used fender covers	5		
1.10	Used seat covers	5		
1.11	Used steering wheel cover	5		
1.12	Used floor matt	5		
Sub-Total		100		

2.	Tune Up	Max	Actual	Comments
2.1	Checked level electrolyte Battery	5		
2.2	Checked box Battery	10		
2.3	Checked density Battery	10		
2.4	Checked voltage Battery	10		
2.5	Checked oil level	5		
2.6	Checked water coolant	10		
2.7	Inspect Cooling System for Leaks	20		
2.8	Inspect Radiator Cap	20		
2.9	Checked Water Pump Fully Drive Belt	10		
2.10	Checked Brake Fluid	5		
2.11	Checked Power Steering Fluid	5		
2.12	Checked Clutch Fluid	5		
2.11	Checked Water Wiper	5		
2.12	Inspection Air Filter	20		
2.13	Inspect Spark Plug High Tension Cords	20		
2.13	Inspection Spark Plug	15		
2.14	Measure Compression 1 Cylinder	25		
Sub-Total		200		

3.	Check & Measure Fuel Injector	Max	Actual	Comments
3.1	Remove fuel injector connectors with care	20		
3.2	Set test equipment to Ohms	30		
3.3	Correct measurement of injector	50		
Sub-Total		100		

4.	Repair Engine to Start & Run	Max	Actual	Comments
4.1	Checked fuse (main fuse)	10		
4.2	Reinstall fuse	10		
4.3	Check fuel injector connector	20		
4.4	Check injectors wiring resistance	20		
4.5	Using scan tool	50		
4.6	Using service manual correctly	40		
Sub-Total		150		

5.	Correct & Repair Drivability Problem	Max	Actual	Comments
5.1	Check and find defect sensor	50		
5.2	Diagnosis use scan tool	70		
5.3	Install loose connector	50		
5.4	Clear the codes	50		
5.5	Reinstall the removed parts	30		
Sub-Total		250		

6.	Check and measure throttle position sensor.	Max	Actual	Comments
6.1	Check loose connector	50		
6.2	Measure resistance	50		
6.3	Explain to expert	100		
Sub-Total		200		

Competitor Name	Competitor No	Task	Marking Scale
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Report Form Task A Diagnosing and Engine Tuning-up

No. Item	Items	Performance/ Condition of Components	
		Good	Bad
1.	Preparation		
II. 1.	Inspection Pre Diagnosis		
2.	Checked Battery		
3.	Checked Cooling System		
4.	Checked Lubricating System		
5.	Checked Power Steering Fluid		
6.	Checked Brake Fluid		

7.	Checked Clutch Fluid		
8.	Checked Water Wiper		
9.	Checked Water Pump Fully Drive Belt		
10.	Inspection Air Filter		
11.	Inspection Spark Plug High Tension Cord		
12.	Inspection Spark Plug		
13.	Measure Compression 1 Cylinder		
14.	<p>Fuel Injector Inspection</p> <p>Resistance :</p> <p>Injector No 1 _____ Ohms</p> <p>Injector No 2 _____ Ohms</p> <p>Injector No 3 _____ Ohms</p> <p>Injector No 4 _____ Ohms</p>		

III. 1.	Diagnosis / Trouble Inspection Scan Tools		
2.	Throttle Positioning Sensor TPS _____ Sensor Resistance _____ Ohm Standard Resist spec. _____ Ohm		