Student Name: ……
Date: ……

Unit Title	**Introduction to engine liquid cooling and engine lubrication systems**	**Level:**	**ONE**	**Sheringham High School Motors**
		Credit Value:	**4**	
		Unit Code:	**A/501/7012**	

1.1 Use safe working practices when working on engine cooling and lubrication systems

1. You have just finished draining the cooling system on a vehicle and you need to dispose of the coolant, which one of the following is the correct method of disposal?
    a. Dispose of the coolant into the sink
    b. Dispose of the coolant into the external drain
    c. Dispose of the coolant into a container for collection

Answer:

2. You have accidentally split some engine coolant on the floor, which one of the following is the correct action to take?
    a. Wash it away with water and clean up the area
    b. Cover the coolant spillage with granules and clean up the area
    c. Cover the coolant spillage with rags and leave it to be soaked up

Answer:

.

3. Vehicle cooling systems are pressurised which affects the boiling point of the liquid. Why is this a particular danger when checking the coolant level of a hot engine?

Answer:

4. You are about to work on a vehicle: what action could you take to prevent the bodywork becoming damaged or dirty whilst you are working on the engine?

Answer:

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Date: ……

Unit Title	**Introduction to engine liquid cooling and engine lubrication systems**	**Level:**	**ONE**	**Sheringham High School Motors**
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		Unit Code:	**A/501/7012**	

1.2 Use safe working practices when working on engine cooling and lubrication systems

5. You are asked to check the coolant level on a vehicle where the engine is still warm: which one of the following items would give protection against hot components?

A.

B.

C.

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		Unit Code:	**A/501/7012**	

Assessor Checklist	**Achieved Y/N**
Procedure is accurate	
All items included	

Assessor Declaration

In signing this sheet the assessor and learner confirm that all the operation in this task were

Carried out by the named learner observed safe working practices at all times.

Assessor Signature…….. Date…….

Learner Signature……. Date…….

Student Name: ……
Date: ……

Unit Title	**Introduction to engine liquid cooling and engine lubrication systems**	**Level:**	**ONE**	**Sheringham High School Motors**
		Credit Value:	**4**	
		Unit Code:	**A/501/7012**	

2.1 Identify the major components of the engine cooling system

2.2 Using methodical procedures
* drain and flush a vehicle liquid cooling system
* remove and replace a thermostat
* bleed a vehicle cooling system

1. The main purpose of a vehicle cooling system is to:
    a. Allow the engine to run at an efficient temperature
    b. Allow heat to be provided for the vehicle interior
    c. Allow the engine to run at as cold a temperature as possible

Answer:

2. When the engine is at normal working temperature, the temperature of the water would be approximately:
    a. 50^{o}C
    b. 100^{o}C
    c. 150oC
    d. 200oC

Answer:

3. State two things that could occur if the engine becomes too hot.

Answer:
1.
2.

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4. Name the two main types of cooling systems.

Answer:

1.
2.

5. What is the temperature at which water will first start to freeze?
    a. 100^{o}C
    b. -10^{o}C
    c. 0^{o}C
    d. 30^{o}C

Answer:

6. Water cooling systems require the use of an antifreeze. State two reasons why antifreeze is used.

Answer:

1.
2.

7. Some motorcycles use an air cooling system. What causes the air to flow over the engine?

Answer:

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Task: Know how to use antifreeze No 31. 3.2

3.1 Demonstrate how to mix and install antifreeze solution for a given percentage and system capacity
3.2 Test percentage of antifreeze solution

1. You have been asked to top up the coolant level on a vehicle that has just been driven into the workshop, why should you remove the cap slowly?
    a. To stop damage to the hoses
    b. So the engine does not cool down too quickly
    c. The water could start to boil and cause steam

Answer:

2. With some older vehicles the coolant level is checked at the radiator, but with most modern vehicles the level is checked by looking at the level in the component shown. What this component called?

Answer:

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3. Using manufacturers' data, or other sources of information, find out to what temperature a 50/50 mix of antifreeze and water will offer protection to a vehicle.

Answer:

Assessor Checklist	**Achieved Y/N**
Procedure is accurate	
All items included	

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Date: ……

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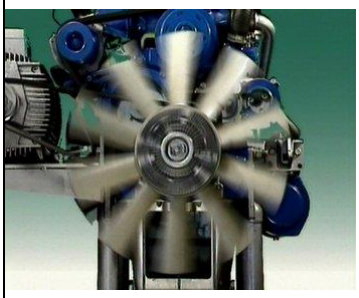
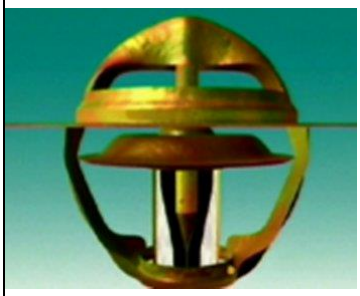
		Unit Code:	**A/501/7012**	

Task: Identify the major components of the engine cooling system 2.1

1. Below are some diagrams of a number of cooling system components - how many can you identify? You may find manufacturers' handbooks or other sources of information useful if you are unsure.



Answer:



Answer:

Answer:

Student Name: ……
Date: ……

Answer:

Answer:

Answer:

Assessor Checklist	**Achieved Y/N**
Procedure is accurate	
All items included	

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4.1 Demonstrate how to use a cooling system pressure tester, to test a vehicle's system for leaks

1. You have just fitted a radiator: what equipment could be used to check for any leaks before the engine is started?

2. What fairly simple check could you make on the cooling system to ensure that water was circulating around the complete system and there were no obvious air locks?

    a. Check to see how long the engine takes to reach full operating temperature
    b. After running the engine for a time check that the heater provided hot air
    c. Check the coolant operating pressure when it is hot

3. You have fitted a new radiator hose, as shown below, and after the engine has been running for a short time coolant starts to leak from where it is fitted to the radiator. What is the first action you should take?

a. Fit a new hose
b. Fit a new clip
c. Try to tighten the clip

.

4. You start to fill the cooling system and coolant flows out as shown in the diagram below. What component have you forgotten to refit?

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5. After running the engine for some time you check the coolant level and it is as shown in the diagram below. What action should you take?

a. Top up the coolant as the level is too low
b. Drain off some coolant as the level is too high
c. No action required, as the level is OK

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All items included	

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Date: ……

Unit Title	**Introduction to engine liquid cooling and engine lubrication systems**	**Level:**	**ONE**	**Sheringham High School Motors**
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		Unit Code:	**A/501/7012**	

Task: 5.1 Identify the major components of the engine lubrication system

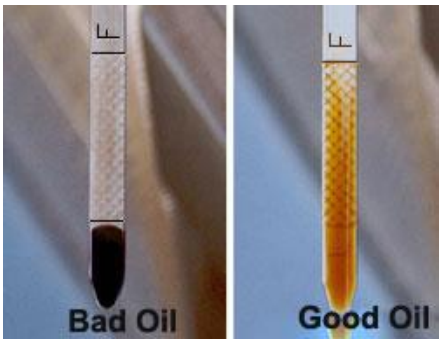
1. Below are some diagrams of a number of engine lubrication components - how many can you identify? You may find manufacturers' handbooks or other sources of information useful if you are unsure.

Answer:

Answer:

Answer:

Student Name: ……
Date: ……



Answer:

Answer:

Answer:

Student Name: ……
Date: ……

Assessor Checklist	**Achieved Y/N**
Procedure is accurate	
All items included	

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Date: ……

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		Unit Code:	**A/501/7012**	

6.1 Demonstrate appropriate ways to dispose of waste products in accordance with environmental guidance

1. You have just finished draining the cooling system on a vehicle and you need to dispose of the coolant, which one of the following is the correct method of disposal?

a. Dispose of the coolant into the sink
b. Dispose of the coolant into the external drain
c. Dispose of the coolant into a container for collection

.

2. You have accidentally split some engine coolant on the floor, which one of the following is the correct action to take?

a. Wash it away with water and clean up the area
b. Cover the coolant spillage with granules and clean up the area
c. Cover the coolant spillage with rags and leave it to be soaked up

3. Vehicle cooling systems are pressurised which affects the boiling point of the liquid. Why is this a particular danger when checking the coolant level of a hot engine?

4. You are about to work on a vehicle: what action could you take to prevent the bodywork becoming damaged or dirty whilst you are working on the engine?

.

Student Name: ……
Date: ……

5. You are asked to check the coolant level on a vehicle where the engine is still warm: which one of the following items would give protection against hot components?

a.

b.

c.

Answer:

Student Name: ……
Date: ……

Assessor Checklist	**Achieved Y/N**
Procedure is accurate	
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Learner Signature……. Date…….