



AUTOMOTIVE DRAFT SAMPLE EXAMINATION

Section 7 of the *WACE Manual: General Information 2009* outlines the policy on WACE examinations.

Further information about the WACE Examinations policy can be accessed from the Curriculum Council website at

<http://www.curriculum.wa.edu.au/internet/Communications/Publications/>.

The purpose for providing a draft sample examination is to provide teachers with an example of how the course will be examined. Further finetuning will be made to this sample in 2009 by the examination panel following consultation with teachers, measurement specialists and advice from the courses' advisory committee.



Western Australian Certificate of Education, Draft Sample External Examination Question/Answer Booklet

**AUTOMOTIVE
WRITTEN PAPER**

Please place your student identification label in this box

**Certificate II in Automotive (Vehicle Servicing) AUR20505
Certificate II in Automotive (Mechanical) AUR20705**

Student Number: In figures

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In words

Time allowed for this paper

Reading time before commencing work:
Working time for paper:

Ten minutes
Two and a half hours

Material required/recommended for this paper

To be provided by the supervisor

This Question/Answer Booklet
Multiple choice response sheet

To be provided by the candidate

Standard items: pens, pencils, eraser, correction fluid, ruler, protractor, highlighter
Special items: appropriate plotting and measuring instruments and calculators satisfying the conditions set by the Curriculum Council for this subject

Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

Structure of this paper

Section	Suggested working time	Number of questions available	Number of questions to be attempted	% of paper
Section One: Multiple-choice	30 minutes	20	20	20%
Section Two: Short answers	120 minutes	8	8	80%
			[Total marks]	100

Instructions to candidates

1. The rules for the conduct of Curriculum Council WACE examinations are detailed in the *Student Information Handbook*. Sitting this examination implies that you agree to abide by these rules.
2. Answer **Section One** questions on the multiple-choice answer sheet provided using a 2B pencil.
3. Answer **Section Two** questions in the Question/Answer Booklet in blue or black ballpoint or ink pen. Wherever appropriate, fully labelled diagrams and examples should be used to illustrate and support your answers.
4. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.

SECTION ONE—MULTIPLE-CHOICE**[20 marks]**

This section contains **TWENTY (20)** multiple-choice questions. Attempt **ALL** questions. Please mark the correct answer as indicated on the multiple-choice answer sheet.

Suggested working time: 30 minutes.

1. The three basic elements to consider when fire fighting are *[1 mark]*
- (a) heat, light and smoke
 - (b) a solid, a liquid and a gas
 - (c) ignition, combustion and exhaust
 - (d) a fuel, oxygen and heat.
2. Evacuation procedures are *[1 mark]*
- (a) only used in workshops with more than 10 employees
 - (b) required for all workplaces
 - (c) only used in workshops of less than 10 employees
 - (d) required when there are office personnel involved.
3. A very slight seepage of brake fluid at one of the flexible hoses *[1 mark]*
- (a) indicates brake fluid may need changing
 - (b) is a serious fault and requires investigation before vehicle is driven
 - (c) is normal on older cars
 - (d) indicates air in the brake system.
4. To locate the manufacturing date of a vehicle, a technician should consult the vehicle's *[1 mark]*
- (a) compliance plates
 - (b) workshop manual
 - (c) service schedule
 - (d) tyre placard.

5. The correct fluid to top up a clutch master cylinder is *[1 mark]*
- (a) engine oil
 - (b) ATF
 - (c) distilled water
 - (d) brake fluid.
6. Engine oil with a thick milky appearance is contaminated with *[1 mark]*
- (a) gases from the combustion process
 - (b) exhaust gases
 - (c) cooling system coolant
 - (d) excessive fuel from over rich mixtures.
7. The number of crankshaft degrees required to complete one full cycle of the two stroke engine is *[1 mark]*
- (a) 180 degrees
 - (b) 360 degrees
 - (c) 540 degrees
 - (d) 720 degrees.
8. A substance used in an engine coolant is *[1 mark]*
- (a) polypropylene
 - (b) methanol
 - (c) ethanol
 - (d) ethylene glycol.
9. Removing the radiator cap of a hot engine may cause *[1 mark]*
- (a) immediate boiling of the coolant
 - (b) the bottom hose to "suck in"
 - (c) the engine to seize, due to the sudden rise in temperature
 - (d) damage to radiator tubes, because of increase in atmospheric pressure.

10. When starting the engine from cold, air bubbles entering the top tank of the radiator could indicate a [1 mark]
- (a) loose fan belt
 - (b) blown head gasket or cracked cylinder head
 - (c) faulty thermostat
 - (d) need for a larger radiator top tank.
11. When testing a brake booster, start the engine with your foot on the brake and [1 mark]
- (a) the pedal should rise slightly
 - (b) the pedal will go hard
 - (c) the pedal should drop slightly
 - (d) the sound of air release can be heard.
12. A flexible brake hose, which is twisted, may cause [1 mark]
- (a) the brake to drag
 - (b) a spongy pedal
 - (c) a squealing sound as brakes are applied
 - (d) failure of the hose.
13. A loose power steering pump drive belt can often be detected by [1 mark]
- (a) a squawking noise on full lock
 - (b) a slow self centring action of the steering
 - (c) a buzzing noise from pump relief valve
 - (d) a rapid rise in oil temperature.
14. Power steering reservoirs are usually topped up with [1 mark]
- (a) molybdenum disulphide lubricant
 - (b) engine oil
 - (c) automatic transmission fluid
 - (d) extreme pressure oils.

- 15.** A cylinder head from a six cylinder car is required to be checked for warp. Which of the following measuring instruments should be used? *[1 mark]*
- (a) a dial gauge and surface plate
 - (b) a straight edge and feeler gauges
 - (c) a try square and steel rule
 - (d) an outside micrometer and straight edge.
- 16.** A 0-25mm micrometer has the thimble wound out 8 turns plus 4 of the smallest thimble divisions. What is the reading on this micrometer? *[1 mark]*
- (a) 25.4mm
 - (b) 0.54mm
 - (c) 4.04mm
 - (d) 4.54mm.
- 17.** The included angle formed by the cutting edges of a standard drill bit is *[1 mark]*
- (a) 59 degrees
 - (b) 118 degrees
 - (c) 135 degrees
 - (d) 159 degrees.
- 18.** Noise pollution is *[1 mark]*
- (a) acceptable if the person causing it is wearing hearing protection
 - (b) one very loud explosion
 - (c) a loud piece of cutting machinery operation outside 9 hours a day every day
 - (d) a neighbour hammering wood loudly as part of their house repairs.
- 19.** Using a spill kit instead of a mop and bucket protects the environment because *[1 mark]*
- (a) businesses can buy more of them
 - (b) spill kits do not use water
 - (c) spill kits are cheaper purchase
 - (d) spill kits clean up more mess.

20. The most environmental way to dispose of solid waste is through

[1 mark]

- (a) sorting and recycling it
- (b) burying it in the ground
- (c) taking it to the tip
- (d) burning it.

END OF SECTION ONE

SEE NEXT PAGE

SECTION TWO—SHORT ANSWER

[80 marks]

This section has **EIGHT (8)** questions. Attempt **ALL** questions.

Suggested working time: 120 minutes.

Question 1

[10 marks]

- (a)** List four (4) items of personal protection equipment (PPE) that should be used when carrying out an oil and filter change.

[4 marks]

- (b)** Describe workshop quality procedures that are carried out on a customer's vehicle with the purpose of ensuring the vehicle is handed back to the customer in better condition than it arrived.

[6 marks]

Question 2

[10 marks]

(a) Name the strokes that make up the 4 stroke cycle and describe the function of each.

[4 marks]

(b) How many degrees of crankshaft rotation and how many turns are there for one complete 4 stroke cycle.

[2 marks]

(c) Describe the method you would use to find 'TDC' compression number one cylinder on a 4-stroke engine.

[4 marks]

Question 3

[10 marks]

(a) Name two personal safety hazards associated with cooling systems and describe what to do to avoid them.

[4 marks]

(b) Explain when and how radiator caps on a pressurised cooling system can be removed safely

[6 marks]

Question 5

[10 marks]

The correct use of workplace tools is essential.

(a) What is the general rule of thumb for working out drill speed?

[2 marks]

(b) When using a hack saw, what is the general rule of thumb for the number of teeth the blade should have?

[2 marks]

(c) Explain the process you would use to remove a broken bolt that is below the surface of the component you are working on.

[6 marks]
