



General Certificate of Secondary Education
2015

Centre Number

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Candidate Number

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Motor Vehicle and Road User Studies

Unit 1: Motor Vehicle and
Road User Theory

Higher Tier

[GMV12]



GMV12

MONDAY 11 MAY, AFTERNOON

TIME

2 hours.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page or on blank pages.

Complete in blue or black ink only. **Do not write with a gel pen.**

Answer **all** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 180.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Questions **26, 27** and **28**.



Answer **all** questions.

- 1 If a vehicle is displaying the sign shown in **Fig. 1.1** below, what would you expect it to be carrying?

_____ [1]



Fig. 1.1

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- 2 Suggest **one** situation when a motorist should not proceed at a green traffic light.

_____ [1]

- 3 (a) Name **one** vehicle which must use dipped headlights, even during daylight.

_____ [1]

- (b) Apart from at night or in adverse weather, when should a driver drive at a speed lower than the stated speed limit?

 _____ [2]



4 (a) The legal limit for alcohol in the blood is _____ milligrams per 100 ml. [1]

(b) Name **one** adverse effect excess alcohol has on driving ability. _____ [1]

(c) Name **two** consequences of being convicted of a drink driving offence.
1. _____ [1]
2. _____ [1]

5 (a) Name **two** ways in which cyclists can make themselves safe on the road.
1. _____ [1]
2. _____ [1]

(b) List **two** ways in which urban roads can be made safer for cyclists.
1. _____ [1]
2. _____ [1]

[Turn over



6 (a) List **two** considerations which a motorist should take into account before driving in fog.

- 1. _____
- 2. _____ [2]

(b) Describe **three** actions a driver should take when driving in fog in order to drive safely.

- 1. _____
- 2. _____
- 3. _____ [3]

(c) What is meant by the letters M.S.M.?

_____ [1]

(d) Explain briefly why M.S.M. is a necessary part of safe driving.

_____ [2]



7 (a) What is the main danger in **Fig. 7.1** below?



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Fig. 7.1

[2]

(b) What should a motorist do in a situation such as that in **Fig. 7.2** below?



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Fig. 7.2

[2]

[Turn over



8 (a) State **two** pieces of good advice which could be given to motorists when approaching a high risk area.

1. _____
2. _____ [2]

(b) List **three** areas on public roads which could be described as high risk.

1. _____
2. _____
3. _____ [3]

9 Study the photograph in **Fig. 9.1** below.



Fig. 9.1

Source: Chief Examiner

Write down **two** possible hazards which a motorist may face on this section of road.

1. _____ [1]
2. _____ [1]



10 (a) Name the vehicle system to which each component below belongs.

1. coil _____ system [1]
2. solenoid _____ system [1]
3. rack and pinion _____ system [1]
4. expansion/header tank _____ system [1]

(b) Apart from smell, how could you identify a diesel from a petrol engine?

_____ [1]

11 (a) Examine **Fig.11.1** below carefully.

Apart from cyclists, how many types of vehicle have permission to use the Bus Lane?

_____ [1]



© Chief Examiner
Fig. 11.1

(b) Suggest **three** advantages of having Bus Lanes in a city.

1. _____ [1]
2. _____ [1]
3. _____ [1]

[Turn over



12 (a) Give the meaning of each of the road signs shown in Fig. 12.1–12.6 below.



Fig. 12.1



Fig. 12.2



Fig. 12.3



Fig. 12.4



Fig. 12.5



Fig. 12.6

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- Fig. 12.1 _____ [1]
- Fig. 12.2 _____ [1]
- Fig. 12.3 _____ [1]
- Fig. 12.4 _____ [1]
- Fig. 12.5 _____ [1]
- Fig. 12.6 _____ [1]



(b) Examine Fig. 12.7 below carefully.



Fig. 12.7

© Chief Examiner

(i) Suggest a speed limit for traffic in Fig. 12.7.

_____ [1]

(ii) Give **one** reason for your answer to question 12(b)(i) above.

_____ [1]

(c) Examine Fig. 12.8 below carefully.



Fig. 12.8

© Chief Examiner

Suggest **one** reason why two sets of traffic lights, on one pole, are used at this junction.

_____ [1]

[Turn over



- 13 (a) A car shampoo has to be diluted with water in the ratio of 1:24.

Calculate the amount of shampoo contained in a 5 litre mix of shampoo and water.

Answer _____ ml [2]

- (b) A motorist can drive 550 kilometres with a 50 litre tank of fuel. Calculate the vehicle's average fuel consumption.

Answer _____ km/l [1]

- (c) A motorist buys a car for £19,000. He agrees a deposit and pays the balance in 34 monthly payments of £475. Calculate the deposit paid.

Answer £ _____ [2]



14 (a) Name **two** ways in which road builders can reduce the effect of traffic noise on a new bypass.

1. _____ [1]

2. _____ [1]

(b) Name **two** fuels used in a hybrid vehicle.

1. _____ [1]

2. _____ [1]

(c) State **one** reason why lead was removed from petrol.

_____ [1]

[Turn over



15 Study the photograph in **Fig. 15.1** below.



Fig. 15.1

Source: Chief Examiner

(a) What danger does the motorist face in this situation?

[2]

(b) What particular danger would a motorcyclist face here in autumn?

[1]



16 (a) What is the legal minimum insurance requirement for a driver?

_____ [1]

(b) Name **three** documents which an insurance company may issue to an insured driver.

1. _____

2. _____

3. _____ [3]

(c) List **three** factors which could affect the cost of motor insurance.

1. _____

2. _____

3. _____ [3]

(d) Match the terms in **A** to the explanation in **B** below.

A The Proposer

The Agent

The Third Party

B _____ is any other person that becomes involved in a road accident.

_____ is the insurance company representative.

_____ is the person who has bought the insurance cover or who is looking for insurance cover. [3]

[Turn over

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17 (a) The diagram in **Fig. 17.1** below shows the main parts of the

_____ system.

[1]

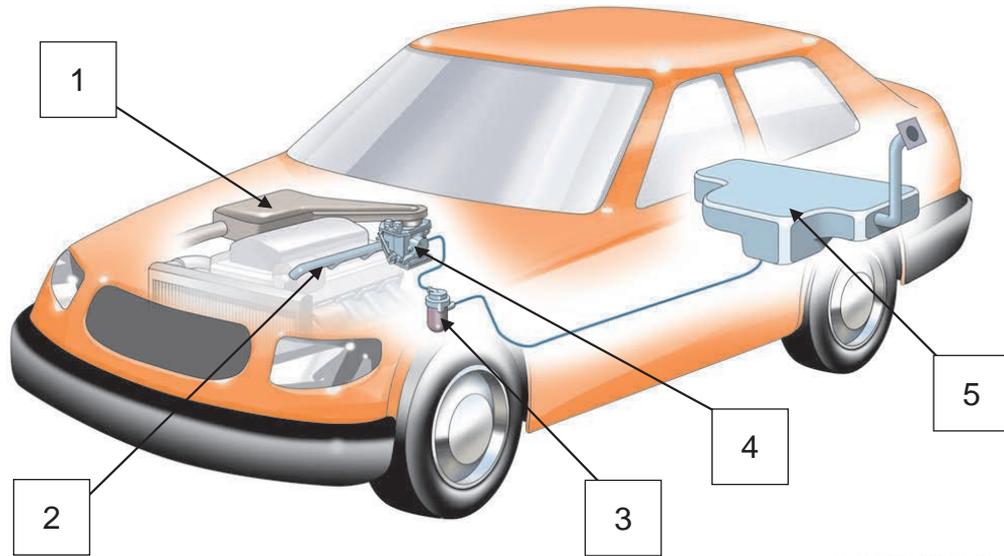


Fig. 17.1

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(b) Name the parts 1–5 above.

1. _____
2. _____
3. _____
4. _____
5. _____

[5]

(c) Write down **two** advantages of fuel injection.

1. _____
2. _____

[2]



(d) Name **two** filters found on a vehicle.

1. _____

2. _____

[2]

(e) What is the function of a filter?

[2]

18 (a) What is the purpose of “catseyes” and coloured road studs?

[2]

(b) Choose **one** colour from the list below to complete each statement correctly.

Green

Red

White

Amber

_____ studs mark the left hand edge of the carriageway.

_____ studs separate traffic lanes.

_____ studs mark the right hand edge of the carriageway or central reservation.

_____ studs mark a side or slip road.

[4]

[Turn over



19 There are several ways a motorist can reduce his/her motoring costs.

Describe how a motorist can reduce costs regarding:

(a) Tyre pressure

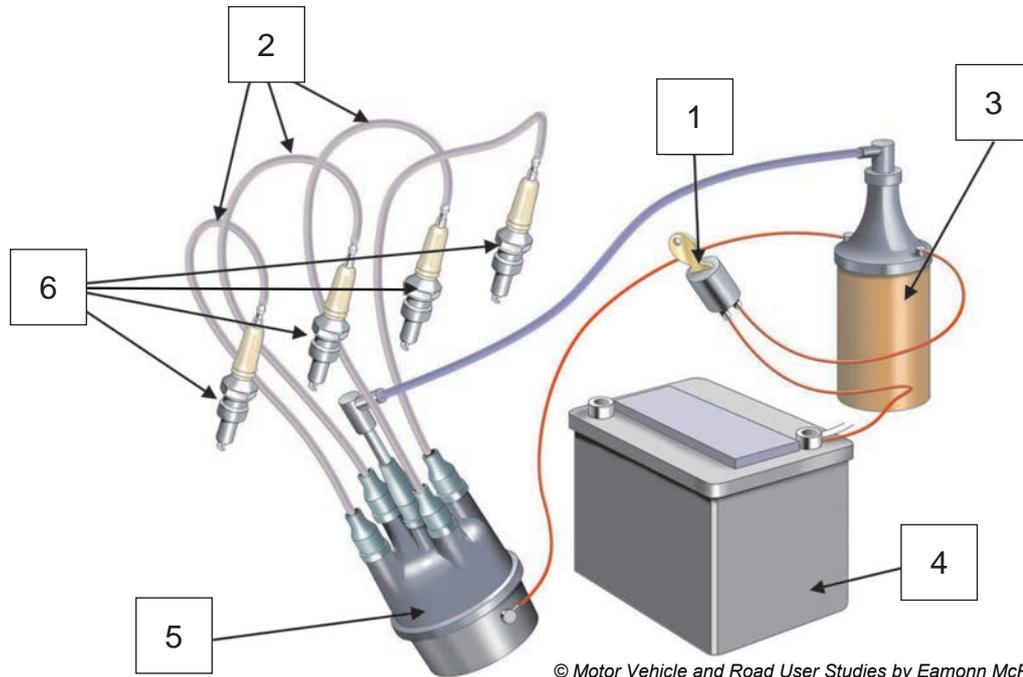
(b) Air conditioning

(c) Car sharing

[6]



22 (a) Name the parts numbered 1–6 in Fig. 22.1 below, which shows the ignition system.



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Fig. 22.1

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

[6]

(b) Describe briefly the function of the ignition system in the internal combustion engine.

[3]



(c) How is fuel ignited in the compression-ignition engine?

[3]

(d) Most modern cars have catalytic converters fitted to the exhaust system.

Explain briefly the function of a catalytic converter.

[2]

23 Human error is the single biggest factor in road accidents. Describe briefly how your driving could contribute to road safety.

[6]

[Turn over



24 (a) Name **two** items, excluding a mobile phone, which you could carry in your car and could prove useful in the event of an emergency or accident.

1. _____ [1]

2. _____ [1]

(b) List **two** ways in which a vehicle could be made safe at an accident scene.

1. _____ [1]

2. _____ [1]

(c) State briefly why it is important to make a vehicle safe at an accident scene.

_____ [1]





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25 (a) Name the **four** strokes in the four stroke cycle.

1. _____ [1]
2. _____ [1]
3. _____ [1]
4. _____ [1]

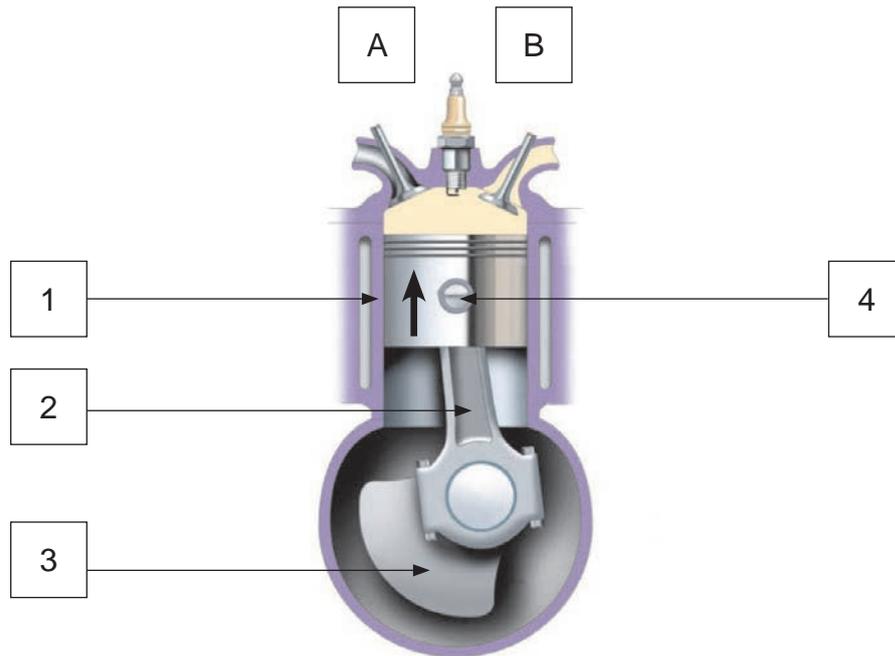


Fig. 25.1

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(b) Name the parts numbered 1–4 in **Fig. 25.1** above.

1. _____ [1]
2. _____ [1]
3. _____ [1]
4. _____ [1]



(c) Name the valves labelled A and B in **Fig. 25.1**.

A _____ [1]

B _____ [1]

(d) Name the component which opens and closes the valves A and B in **Fig. 25.1**.

_____ [2]



26 Describe how drivers, vehicles and road improvements have all made a contribution to the recent reduction in road accident fatalities.

Drivers

Vehicles



Road improvements

[12]

[Turn over

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SOURCES:

Fig. 1.1: ... Adapted from Highway Code Booklet
 Fig. 7.1: ... www.learnerdriving.com/hazardtypes
 Fig. 7.2: ... www.learnerdriving.com/hazardtypes
 Fig. 9.1: ... Photograph taken by Chief Examiner
 Fig. 11.1: ... Photograph taken by Principal Examiner
 Fig. 12.1: ... Highway Code Booklet
 Fig. 12.2: ... Highway Code Booklet
 Fig. 12.3: ... Highway Code Booklet
 Fig. 12.4: ... Highway Code Booklet
 Fig. 12.5: ... Highway Code Booklet
 Fig. 12.6: ... Highway Code Booklet
 Fig. 12.7: ... Photograph taken by Principal Examiner
 Fig. 12.8: ... Photograph taken by Principal Examiner
 Fig. 15.1: ... Photograph taken by Chief Examiner
 Fig. 17.1: ... Motor Vehicle and Road User Studies, Eamon McPolin, Colour Point Educational, 2009
 Fig. 22.1: ... Motor Vehicle and Road User Studies, Eamon McPolin, Colour Point Educational, 2009
 Fig. 25.1: ... Motor Vehicle and Road User Studies, Eamon McPolin, Colour Point Educational, 2009

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Question Number	Marks
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Total Marks	
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Examiner Number

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