



General Certificate of Secondary Education
2012

Motor Vehicle and Road User Studies
Unit 1: Motor Vehicle and Road User Theory
Higher Tier
[GMV12]
THURSDAY 17 MAY, MORNING



Centre Number

71	
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Candidate Number

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For Examiner's
use only

Question Number	Marks
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Total Marks	
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TIME

2 hours.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
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 **35**, **36** and **37**.

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Answer **all** questions in the spaces provided.

- 1 At a roundabout, you should always give way to traffic coming from
 _____ [1]

- 2 Name the traffic calming measure shown in the photograph in **Fig. 2.1**
 below.
 _____ [1]



Fig. 2.1

- 3 (a) A motorist entitled to 3 years' no claims discount at 50% is quoted an insurance premium of £640, before deduction. How much does he have to pay?
 _____ [1]
- (b) If he decides to pay by monthly payments over 10 months and is charged 10% interest, how much will his monthly instalments be?
 _____ [3]

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Marks	Remark

4



Fig. 4.1

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(a) Where would you see the sign in Fig 4.1 above?

_____ [1]

(b) State **one** time of day when the hazard shown in Fig. 4.1 above is likely to occur.

_____ [1]

5 (a) Write down **one** advantage of an air cooled engine.

_____ [1]

(b) Write down **three** parts in the water cooling system.

1. _____ [1]

2. _____ [1]

3. _____ [1]

6 List **three** methods the police can use to aid road safety.

1. _____ [1]

2. _____ [1]

3. _____ [1]

7 Write down **two** advantages of a pedestrianised zone.

1. _____ [1]

2. _____ [1]

Examiner Only	
Marks	Remark

8 (a) Give **two** reasons why newly qualified drivers should display an R plate.

1. _____ [1]

2. _____ [1]

(b) List **two** reasons why drivers between 18–21 years are more likely to be involved in an accident than any other age group.

1. _____ [1]

2. _____ [1]

9 Calculate the average speed of a vehicle which travels 108 miles in $1\frac{1}{2}$ hours.

_____ mph [1]

10 Explain the meaning of the term “contraflow”.

_____ [2]

Examiner Only	
Marks	Remark

11 (a) In which of the following vehicle systems would a catalytic converter be found?

1. Electrical
2. Fuel
3. Exhaust
4. Transmission system

_____ system [1]

(b) What is the main function of a catalytic converter?

_____ [1]

12 Apart from the sign, name **two** ways in which you can be reminded that you are approaching a roundabout.

1. _____ [1]

2. _____ [1]

13 (a) Name **two** groups of vulnerable pedestrians.

1. _____ [1]

2. _____ [1]

(b) After age 70, how often must a licence be renewed?

_____ [1]

(c) State **two** reasons why motorists of 70 years and over must reapply for their driving licence more frequently than younger drivers.

1. _____ [1]

2. _____ [1]

Examiner Only	
Marks	Remark

- 14 (a) If you arrive at the scene of a serious road accident, list the priorities, in the correct order, for dealing with the injured.

_____ [3]

- (b) Write down **three** symptoms of shock.

1. _____ [1]

2. _____ [1]

3. _____ [1]

- 15 (a) State **two** ways in which a motorist could reduce the cost of owning a vehicle.

1. _____ [1]

2. _____ [1]

- (b) Explain **two** ways in which your driving style can reduce running costs.

1. _____ [1]

2. _____ [1]

- (c) Antifreeze has to be added to a 4.4 litre engine cooling system in the ratio of 1:10. Calculate the amount of antifreeze required.

_____ [2]

Examiner Only	
Marks	Remark

16 The table below shows part of the speed limit table from the Highway Code. Some speeds have been replaced by the letters A–F. In the spaces provided write down the correct speed.

SPEED LIMITS	Built-up Areas*	Elsewhere		Motorways
		Single carriageways	Dual carriageways	
				
 Cars and motorcycles (including car derived vans up to 2 tonnes maximum laden weight)	30	60	A	70
 Cars towing caravans or trailers (including car derived vans and motorcycles)	30	B	60	C
 Buses and coaches (not exceeding 12 metres in overall length)	30	D	60	E
 Goods vehicles (exceeding 7.5 tonnes maximum laden weight)	30	40	50	F

Fig. 16.1

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- A _____ [1]
- B _____ [1]
- C _____ [1]
- D _____ [1]
- E _____ [1]
- F _____ [1]

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Marks	Remark

17 Which vehicle component:

1. reduces engine noise?

_____ [1]

2. allows the brakes to be applied with only a little pressure?

_____ [1]

3. opens to allow coolant to circulate around the engine to permit cooling?

_____ [1]

18 A used car may be bought from a garage, or privately from the owner. State **one** advantage and **one** disadvantage in each case.

Garage: Advantage _____ [1]

Disadvantage _____ [1]

Privately: Advantage _____ [1]

Disadvantage _____ [1]

19 (a) What is the legal limit of alcohol per 100 ml of breath?

_____ micrograms. [1]

(b) Describe briefly how alcohol is broken down and dispersed in the body.

 _____ [2]

(c) Write down **two** factors which influence the rate at which alcohol is broken down.

1. _____ [1]

2. _____ [1]

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Marks Remark

22 (a) Name **two** ways in which motor vehicle technology plays a part in accident reduction.

1. _____ [1]

2. _____ [1]

(b) State **two** ways in which road engineers/planners can manage parking in a city.

1. _____ [1]

2. _____ [1]

23 Match the insurance meanings in **List A** to the insurance terms in **List B**.

List A

a : A person acting for an insurance company who will sell you one of their policies.

b : A person who sells insurance for many companies.

c : The person who has bought the insurance.

List B

1. Broker _____
_____ [1]

2. Insurance Agent _____
_____ [1]

3. Policy Holder _____
_____ [1]

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Marks Remark

26 (a) What rule applies when fitting a rear facing baby seat in a vehicle?

_____ [1]

(b) Who is responsible to ensure that a child under 14 years is properly restrained when travelling in a vehicle?

_____ [1]

(c) If a passenger aged 16 years is travelling in a vehicle not wearing a seat belt, who is responsible?

_____ [1]

(d) How can a seat belt exemption be obtained?

_____ [1]

(e) Give **one** example of when/why a driver may obtain an exemption.

_____ [1]

(f) What rule applies if a child under 3 years of age is travelling in a taxi?

_____ [1]

(g) State **one** consequence for a motorist found not wearing a seatbelt.

_____ [1]

(h) Fig. 26.1 to Fig. 26.3 below shows three examples of child restraints. Write their names in the spaces provided.



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Fig. 26.1

_____ [1]



© Hemera / Thinkstock

Fig. 26.2

_____ [1]



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Fig. 26.3

_____ [1]

Examiner Only	
Marks	Remark

27 The front wheel and rear wheel suspension systems are shown in Fig. 27.1 and Fig. 27.2 below.

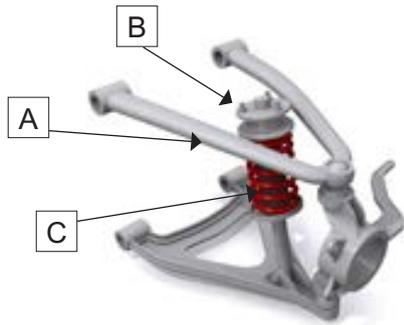


Fig. 27.1

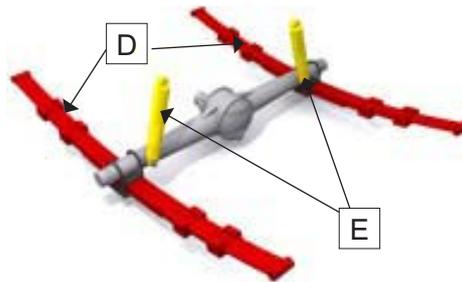


Fig. 27.2

Fig. 27.1 & Fig. 27.2 Copyright ©1994 - 2012 Christopher J Longhurst. All Rights Reserved

(a) State which is the front wheel suspension.

Fig. _____ [1]

(b) Name the parts A–E of the front and rear wheel suspension systems.

A _____ [1]

B _____ [1]

C _____ [1]

D _____ [1]

E _____ [1]

(c) State **two** functions of the suspension system.

1. _____ [1]

2. _____ [1]

Examiner Only	
Marks	Remark

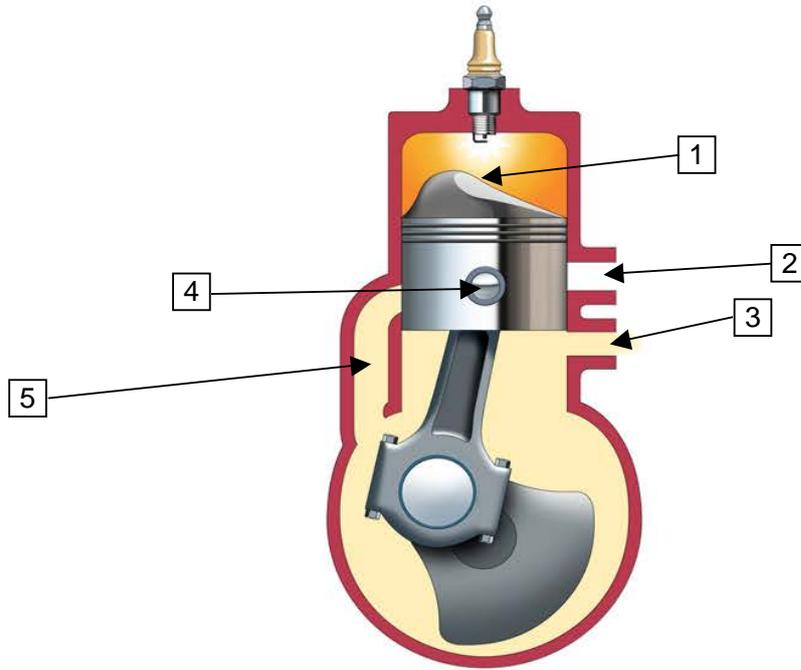


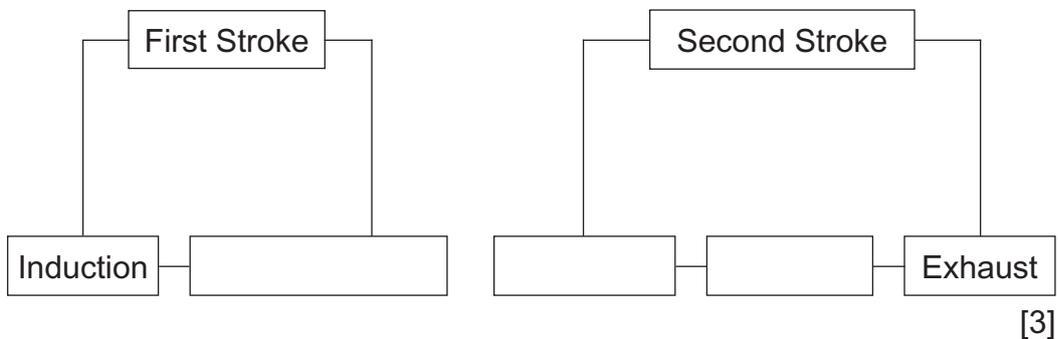
Fig. 28.1

© *Motor Vehicle and Road User Studies* by Eamonn McPolin, pages 100/101, published by Colourpoint Books, 2009. ISBN 9781906578312

(a) Name the parts marked 1 to 5 on **Fig. 28.1** above.

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

(b) Complete the block diagram below for the two stroke cycle.



[3]

(c) State **one** main advantage which two stroke engines have over four stroke engines.

_____ [1]

Examiner Only	
Marks	Remark

29



Fig. 29.1



Fig. 29.2

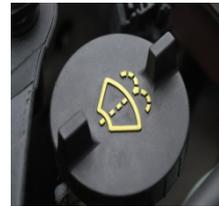


Fig. 29.3



Fig. 29.4



Fig. 29.5

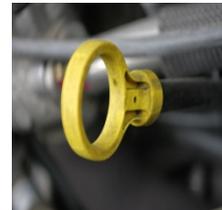


Fig. 29.6

Fig. 29.1–Fig. 29.6 above show where some vehicle fluids are checked/filled.

In the spaces below write down which fluid is associated with each.

Fig. 29.1 _____ [1]

Fig. 29.2 _____ [1]

Fig. 29.3 _____ [1]

Fig. 29.4 _____ [1]

Fig. 29.5 _____ [1]

Fig. 29.6 _____ [1]

30



Fig. 30.1

Describe **one** danger facing the car driver in Fig. 30.1 above.

_____ [1]

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31 (a) State **three** checks which can be carried out on a vehicle's tyres.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(b) The following information can be found written on the side of a tyre.

230/30 R20.

What does the R20 mean?

_____ [1]

32



Fig. 32.1

(a) What name is given to the type of junction shown in **Fig. 32.1** above?

_____ [1]

(b) Describe briefly how this type of junction can ease congestion.

 _____ [2]

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Marks	Remark

33



Fig. 33.1

Describe briefly **three** hazards facing a motorist in the situation shown in Fig. 33.1 above.

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

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34 (a) Write down **three** types of vehicle not permitted to use a motorway.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(b) List **three** actions you must not take on a motorway.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(c) Write down **one** type of vehicle which must not use the right-hand lane of a three or more lane motorway.

_____ [1]

(d) Describe briefly how you would overtake on a motorway.

 _____ [4]

(e) If your car breaks down while driving on a motorway, describe briefly what actions you should take.

 _____ [4]

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Marks	Remark

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