



General Certificate of Secondary Education  
2013

# Motor Vehicle and Road User Studies

## Unit 1: Motor Vehicle and Road User Theory

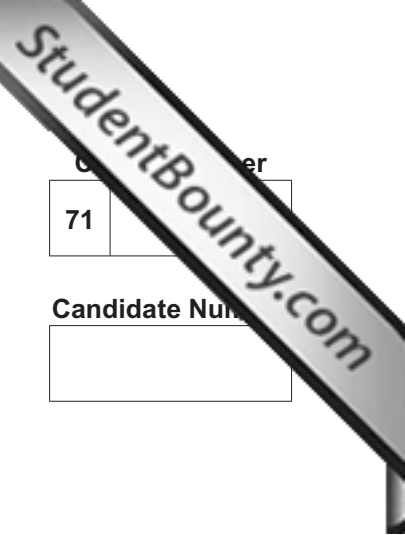
Higher Tier

[GMV12]

THURSDAY 16 MAY, MORNING



GMV12



Centre Number  
71

Candidate Number  
[ ]

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	

<b>Total Marks</b>	
--------------------	--

**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 **27, 28** and **29**.

Answer **all** questions.

Examiner Only

Marks Remark

1 The road shown in **Fig. 1.1** below has no speed restrictions. What is the maximum permitted speed?

Answer \_\_\_\_\_ mph. [1]



Fig. 1.1

© CCEA

2 Give **one** reason why tyres have a tread pattern.

\_\_\_\_\_ [1]

3 (a) State the legal limit for alcohol in:

(i) breath

\_\_\_\_\_ micrograms per 100 ml. [1]

(ii) blood

\_\_\_\_\_ milligrams per 100 ml. [1]

(b) Name **two** ways in which alcohol/drugs can impair a driver.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]



6 (a) Apart from the legal requirement, explain briefly why a motorist needs insurance.

---

---

[1]

(b) List **three** reasons why young, newly qualified, male drivers are a high insurance risk.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3. \_\_\_\_\_ [1]

(c) Explain why the region of the UK in which you live influences the cost of motor insurance.

---

---

---

---

[3]

7 Give the meanings of the following initials:

ABS \_\_\_\_\_ [1]

SORN \_\_\_\_\_ [1]

PCV \_\_\_\_\_ [1]

Examiner Only

Marks Remark

Marks	Remark
-------	--------



(c) Examine **Fig. 9.1** below carefully.

Apart from ramps, name **one** traffic calming feature you would expect to find here.

\_\_\_\_\_ [1]



**Fig. 9.1**

© CCEA

**10 (a)** Name the **three** actions you should complete on arrival at an accident scene, in order of priority.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3. \_\_\_\_\_ [1]

**(b)** At the scene of an accident, list **two** ways in which you could make a vehicle safe.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

11 (a) Apart from the engine, suggest a source of the power for power steering.

\_\_\_\_\_ [1]

(b) Explain briefly a compression ratio of 12:1, in relation to combustion.

\_\_\_\_\_  
\_\_\_\_\_ [1]

(c) List **three** reasons why regular maintenance checks are necessary on a motor vehicle.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3. \_\_\_\_\_ [1]

(d) List **two** items which you should check weekly on your vehicle.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

12 Give the meaning of each of the road signs shown in Figs. 12.1–12.6 below, as stated in the Highway Code.



Fig. 12.1



Fig. 12.2



Fig. 12.3



Fig. 12.4

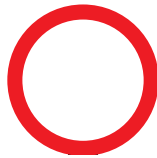


Fig. 12.5



Fig. 12.6

© Crown Copyright – Department for Transport

Fig. 12.1 \_\_\_\_\_ [1]

Fig. 12.2 \_\_\_\_\_ [1]

Fig. 12.3 \_\_\_\_\_ [1]

Fig. 12.4 \_\_\_\_\_ [1]

Fig. 12.5 \_\_\_\_\_ [1]

Fig. 12.6 \_\_\_\_\_ [1]

13 (a) Explain briefly why the two second rule is important to road safety.

\_\_\_\_\_  
 \_\_\_\_\_ [1]

(b) Under what circumstances should the two second rule be increased?

\_\_\_\_\_  
 \_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



14 (a) Explain briefly what a blind spot is.

\_\_\_\_\_ [1]  
\_\_\_\_\_

(b) Where, on a country road without a footpath, should a pedestrian walk?

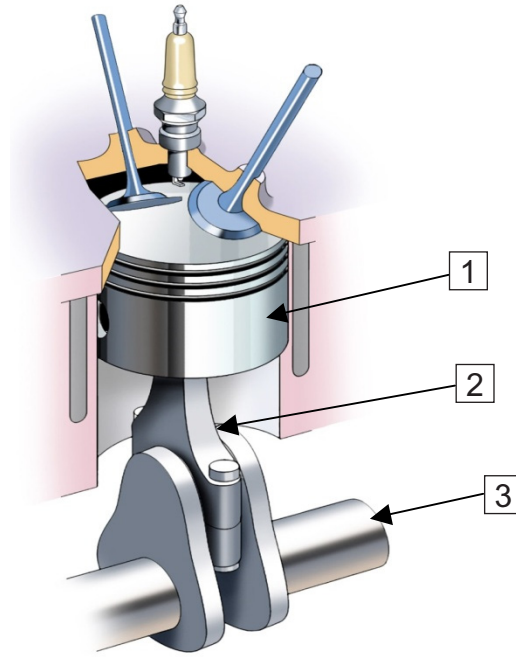
\_\_\_\_\_ [1]

(c) Name **two** dangers which might be experienced when driving on rural roads.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



**Fig. 15.1**

© Motor Vehicle and Road Users Studies by Eamonn McPolin,  
published by Colourpoint Books, 2009. ISBN 9781906578312

**(a)** Name the parts marked 1 to 3 in **Fig. 15.1** above.

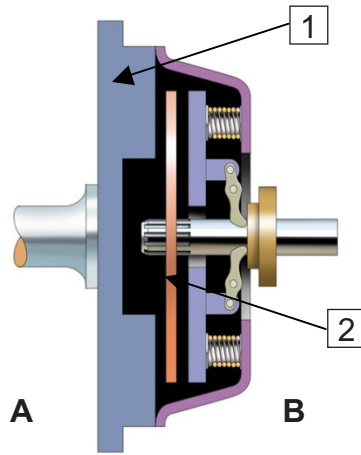
- 1. \_\_\_\_\_ [1]
- 2. \_\_\_\_\_ [1]
- 3. \_\_\_\_\_ [1]

**(b)** Explain briefly how linear motion is changed into circular motion in a car engine.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

(c)



**Fig. 15.2**

*© Motor Vehicle and Road Users Studies by Eamonn McPolin, published by Colourpoint Books, 2009. ISBN 9781906578312*

Name the parts marked 1 and 2 in **Fig. 15.2** above.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

**(d)** Explain briefly the function of a clutch.

\_\_\_\_\_  
\_\_\_\_\_  
[1]

**(e)** On which side of the clutch in **Fig. 15.2** would you expect to find the engine? Answer **A** or **B**.

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

16 (a) Apart from resting the night before, list **two** ways **you** could prepare for a long car journey.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

(b) Apart from checking fuel, list **two** ways you could prepare **your vehicle** for a long journey.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

(c) Suggest **one** reason why speed limits are lower on single carriageway roads rather than on dual carriageways or motorways.

\_\_\_\_\_  
\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark



18 A motorist is calculating the cost of owning and running a modern family car (no MOT required). His expenses are summarised below. Calculate his monthly expenditure.

- Road Tax £190 pa.
- Insurance £648 pa.
- Servicing, etc. £360 pa.
- Parking/cleaning £20 per month
- Fuel 18,000 miles pa. at an average of 36mpg with fuel costing 135p/litre (1 gal= 4.55 litres)

Show all your working out.

Examiner Only	
Marks	Remark

Answer \_\_\_\_\_ [9]



**Fig. 19.1**

© *Motor Vehicle and Road Users Studies* by Eamonn McPolin,  
published by Colourpoint Books, 2009. ISBN 9781906578312

- (a)** What is the common name given to the object shown in **Fig. 19.1** above?

\_\_\_\_\_ [1]

- (b)** What property does the material used in this object have?

\_\_\_\_\_ [1]

- (c)** How can this be useful to a driver?

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

**20** While motorways are considered to be the safest roads, they require some additional care.

**(a)** Explain briefly how a driver should act when joining a motorway.

---

---

---

[3]

**(b)** If your vehicle breaks down on a motorway, list **three** actions you should take to maximise your safety.

---

---

---

---

[3]

**(c)** Write down **two** types of vehicle which should not use the right-hand lane of a motorway with three or more lanes.

---

---

[2]

**(d)** Write down **two** actions a driver must not take on a motorway.

---

---

[2]

Examiner Only	
Marks	Remark



21 (a) Vision is very important to a driver. Explain briefly how a driver can be affected by poor peripheral vision.

---

---

---

 [2]

(b) Describe how a driver could prepare his/her vehicle to ensure good vision.

---

---

---

 [3]

22 (a) Write down **two** elements contained in The Highways and Locomotives Act (The Red Flag Act) 1865.

---

---

 [2]

(b) When designing a new road, an environmental assessment is carried out. Write down **three** items that may be examined in such an assessment.

---

---

---

 [3]

Examiner Only

Marks Remark

**23 (a)** A car costs £15,300. Calculate the monthly repayments over 36 months.

Answer \_\_\_\_\_ [1]

**(b)** The buyer decides to make a 20% deposit to buy the car with repayments over 36 months. Calculate the monthly repayments.

Answer \_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

(c) The buyer decides to borrow £12,000 from his/her bank at 8% APR over 3 years and pay the remainder in cash. Calculate the total cost of the vehicle.

Examiner Only	
Marks	Remark

Answer \_\_\_\_\_ [4]

(d) Calculate the distance a vehicle would travel with a 15 gallon tank and a fuel consumption of 55 mpg.

Answer \_\_\_\_\_ [1]

24 (a) Name the parts marked 1 to 6 in Fig. 24.1 below.

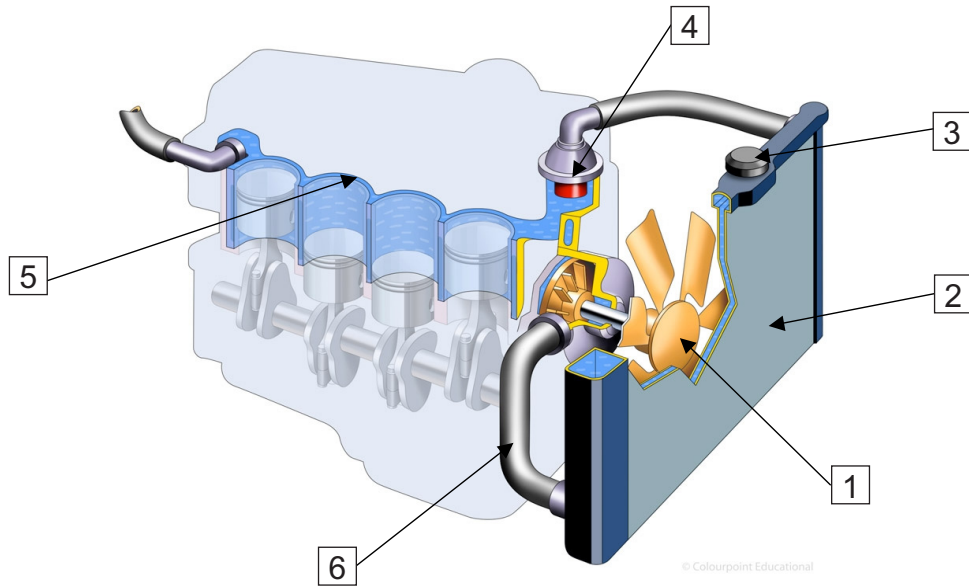


Fig. 24.1

© Motor Vehicle and Road Users Studies by Eamonn McPolin, published by Colourpoint Books, 2009. ISBN 9781906578312

- 1. \_\_\_\_\_ [1]
- 2. \_\_\_\_\_ [1]
- 3. \_\_\_\_\_ [1]
- 4. \_\_\_\_\_ [1]
- 5. \_\_\_\_\_ [1]
- 6. \_\_\_\_\_ [1]

(b) Write down **two** problems which can occur in the water cooling system.

- 1. \_\_\_\_\_ [1]
- 2. \_\_\_\_\_ [1]

(c) Name another cooling system.

\_\_\_\_\_ [1]

(d) What type of vehicle would this be best suited to?

\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark

25 (a) In dealing with casualties at the scene of an accident, when should a casualty be placed in the “recovery position”?

---

---

[2]

(b) Describe briefly how you would place a casualty in the “recovery position”.

---

---

---

---

[3]

Examiner Only	
Marks	Remark

26 (a) Write down **three** items of information found on a Vehicle Excise Licence.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3. \_\_\_\_\_ [1]

(b) How is a Vehicle Excise Licence obtained and what items will you have to provide?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [4]

(c) List **five** pieces of information contained on a vehicle registration document (V5).

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3. \_\_\_\_\_ [1]

4. \_\_\_\_\_ [1]

5. \_\_\_\_\_ [1]

Examiner Only

Marks

Remark

27 Discuss how observation, courtesy and anticipation can each contribute to driver safety.

Observation

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

Courtesy

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

Examiner Only	
Marks	Remark

# Anticipation

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

[12]

Examiner Only	
Marks	Remark





**29** Roundabouts can often pose difficulties for motorists.  
 Outline the different types of difficulties which motorists may encounter at a roundabout and explain how best to deal with them.

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

[12]

Examiner Only	
Marks	Remark

---

**THIS IS THE END OF THE QUESTION PAPER**

---

Permission to reproduce all copyright material has been applied for.  
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA  
will be happy to rectify any omissions of acknowledgement in future if notified.

7989.03 R