



Rewarding Learning

General Certificate of Secondary Education  
2022

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--	--

# Motor Vehicle and Road User Studies

Unit 1: Motor Vehicle and Road User Theory



[GMR11]

\*GMR11\*

**THURSDAY 12 MAY, MORNING**

## TIME

1 hour 45 minutes.

## 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 black ink only. **Do not write with a gel pen.**

Answer **all** questions.

## INFORMATION FOR CANDIDATES

The total mark for this paper is 160.

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 **42, 43 and 44** .



**BLANK PAGE**  
**DO NOT WRITE ON THIS PAGE**

12929



\*32GMR1102\*

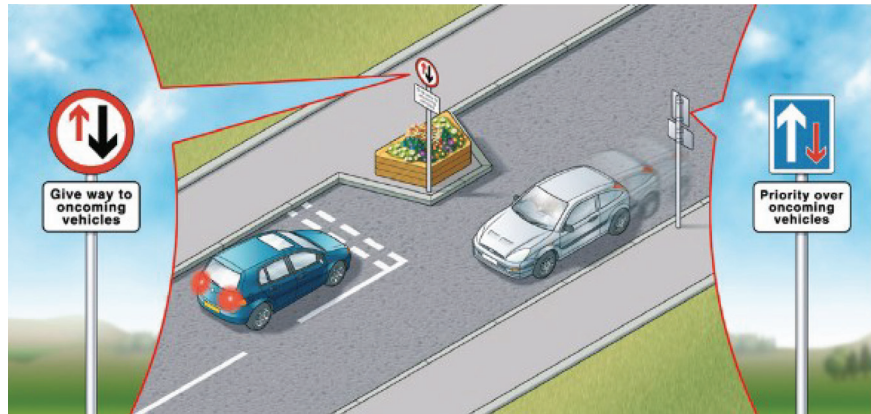


Answer **all** questions

1 Autostrada is the name given to a motorway in \_\_\_\_\_ . [1]

2 Good visibility is an example of \_\_\_\_\_ safety in car design. [1]

3 What is the name given to the traffic calming measure shown in **Fig. 3.1** below?  
\_\_\_\_\_ [1]



**Fig. 3.1**

4 Unless a different speed limit is shown, the presence of street lights will usually mean that a \_\_\_\_\_ mph speed limit is in place. [1]

5 A \_\_\_\_\_ is where a road crosses a railway. [1]

[Turn over



6 Pelican, toucan and puffin are three types of \_\_\_\_\_ . [1]

7 \_\_\_\_\_ is a word used to describe travelling in a neutral gear or with the clutch pressed down. [1]

8 According to the Highway Code, on what type of road would you find the sign in **Fig. 8.1** below? [1]

\_\_\_\_\_

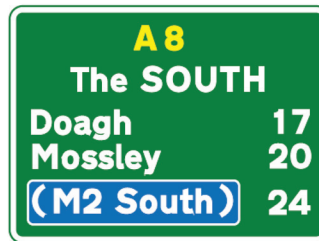


Fig. 8.1

9 Where would the sign in **Fig. 9.1** below be displayed? [1]

\_\_\_\_\_



Fig. 9.1



**10** A strong wind which blows against road users, slowing their forward movement, is referred to as a \_\_\_\_\_ . [1]

**11** Name the only vehicle fluid examined in the MOT test. \_\_\_\_\_ [1]

**12** A vehicle's registration details are shown on a \_\_\_\_\_ form. [1]

**13** In 1913, the first car assembly line was introduced by \_\_\_\_\_ . [1]

**14** The word used for the amount by which a vehicle decreases in value is \_\_\_\_\_ . [1]

**15** On a journey of 100 miles, how many gallons of petrol are used by a car with a fuel consumption of 40 mpg? \_\_\_\_\_ [1]

[Turn over



16 The emergency procedure shown in Fig. 16.1 below is known as

\_\_\_\_\_ .

[1]

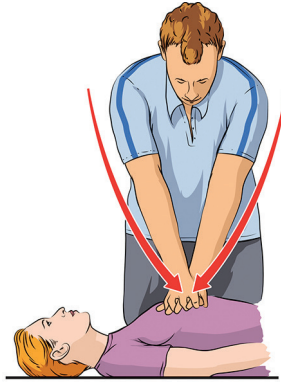


Fig. 16.1

17 Oil is stored in the \_\_\_\_\_ at the bottom of the engine. [1]

18 In an engine, three types of \_\_\_\_\_ that need to be replaced are oil, air and fuel. [1]

19 Fig.19.1 below shows a diagram of a \_\_\_\_\_ . [1]



Fig. 19.1





20 "PAS" is the abbreviation for power assisted \_\_\_\_\_ .

[1]

[Turn over

12929



\*32GMR1107\*

## Vehicle Control and Road User Behaviour

21 Where would you find the sign in Fig. 21.1 below?

[1]



Fig. 21.1

22 How could a colour-blind driver recognise a red traffic light?

[1]

23 State **one** danger for a motorist overtaking another vehicle.

[1]



24 (a) Fig. 24.1 and Fig. 24.2 below show two photographs of a car parked on a hill. Study each picture and state whether the car is facing uphill or downhill.

Fig. 24.1 \_\_\_\_\_ [1]

Fig. 24.2 \_\_\_\_\_ [1]



Fig. 24.1



Fig. 24.2

(b) "Parallel parking" requires a series of manoeuvres to be completed. State **two** of these manoeuvres.

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

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

25 (a) What colour of paint is used for a box junction?

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

(b) When should a motorist enter a box junction?

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

(c) Instead of using a box junction at an entrance or exit, what wording can be painted on a road surface?

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

[Turn over



26 (a) What is meant by the phrase “to beckon traffic on”?

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

(b) Fig. 26.1–Fig. 26.3 show three images of police officers’ signalling. State the direction from which the traffic being beckoned is approaching.



Fig. 26.1



Fig. 26.2



Fig. 26.3

Fig. 26.1 \_\_\_\_\_ [1]

Fig. 26.2 \_\_\_\_\_ [1]

Fig. 26.3 \_\_\_\_\_ [1]

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

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

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

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

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



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

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

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

28 (a) Study Fig. 28.1 below and identify **two** hazards.

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

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



Fig. 28.1

[Turn over



(b) Study **Fig. 28.2** below and state **three** hazards for motorists driving in wet weather.

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

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

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



**Fig. 28.2**

(c) Why should the two-second rule be increased in wet weather?

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

(d) Give **two** reasons why aquaplaning occurs.

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

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





Fig. 29.1

Identify **five** dangers that make the road in **Fig. 29.1** above challenging for motorists.

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

[Turn over



30 Give the meaning of each of the road signs shown in Fig. 30.1–Fig. 30.6 below.



Fig. 30.1



Fig. 30.2



Fig. 30.3



Fig. 30.4

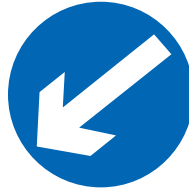


Fig. 30.5



Fig. 30.6

Fig. 30.1 \_\_\_\_\_ [1]

Fig. 30.2 \_\_\_\_\_ [1]

Fig. 30.3 \_\_\_\_\_ [1]

Fig. 30.4 \_\_\_\_\_ [1]

Fig. 30.5 \_\_\_\_\_ [1]

Fig. 30.6 \_\_\_\_\_ [1]



31 (a) Write down **two** ways in which drivers can be affected by alcohol/drugs.

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

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

(b) Apart from legal punishment, list **two** financial costs to a motorist following a drink-driving conviction.

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

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

(c) State the legal limit for alcohol in:

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

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

[Turn over



## Legal Requirements

**32** Give the meaning of the following initials:

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

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

**33** List **five** pieces of information contained on a vehicle registration document.

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

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

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

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

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

**34 (a)** What rule applies when fitting a rear-facing baby seat on the front passenger seat in a vehicle?

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

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

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

**(c)** If a passenger aged 16 is travelling in a vehicle not wearing a seat belt, who is legally 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 three years of age is travelling in a taxi?

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

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

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

[Turn over



## Road Transport and its Effect on Society

35 (a) Fig. 35.1–Fig. 35.3 below show three different types of road. Name each type.



Fig. 35.1

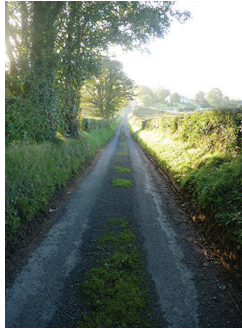


Fig. 35.2



Fig. 35.3

Fig. 35.1 \_\_\_\_\_ [1]

Fig. 35.2 \_\_\_\_\_ [1]

Fig. 35.3 \_\_\_\_\_ [1]

(b) List **four** areas covered during an environmental assessment, when a new road is being designed.

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

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

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

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



## Motoring Mathematics

- 36 (a)** State **one** advantage and **one** disadvantage of buying a car privately rather than from a car dealer.

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

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

- (b)** Give **two** ways a motorist can look to reduce standing costs to make the owning of a vehicle more affordable.

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

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

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

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

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

- (d)** Secondhand vehicles are often advertised for sale with "FSH".

Give the meaning of the initials.

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

- 37 (a)** A car costs £17,100. Calculate the monthly repayments over three years.

(Show all working out.)

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

[Turn over



- (b) The buyer decides to make a 30% deposit to buy the car with the remaining repayments spread across  $2\frac{1}{2}$  years. Calculate the monthly repayments.

(Show all working out.)

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

- (c) The fuel tank of a car holds 60 litres of fuel. If the car averages 35 miles per gallon, and 4.55 litres of fuel is equal to one gallon, what is the distance, in miles, the car can travel on a full tank of fuel (correct to the nearest mile)?

(Show all working out.)

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

- (d) Apart from buying, state **two** other methods of possessing a car.

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

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



## Collision Procedures

38 (a) State **three** ways in which you could make an accident scene safe.

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

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

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

(b) Name **two** legal obligations if you are involved in an injury accident.

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

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

(c) What is the third priority at the scene of an accident?

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

(d) Explain briefly how you would treat an incised wound.

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

[Turn over



## Motor Vehicle Technology

- 39 Identify the structures marked (i) in Fig. 39.1 below, which shows an exhaust silencer box.

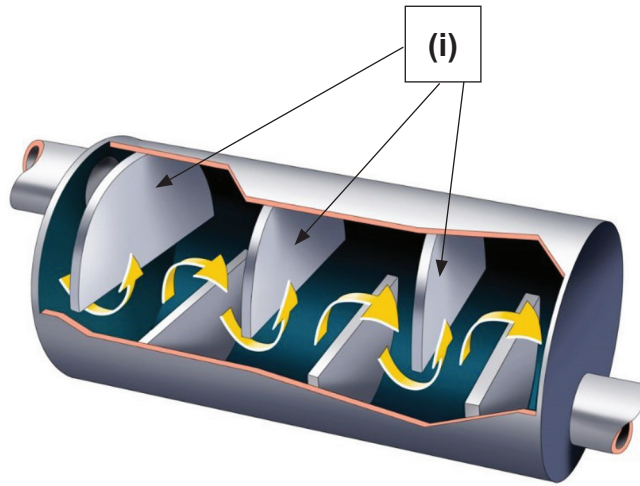


Fig. 39.1

(a) \_\_\_\_\_ [1]

(b) Explain the purpose of these structures.

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

(c) Name the component which attaches the exhaust system to the engine.

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

(d) Name the **two** checks which a motorist can carry out on a vehicle's exhaust system.

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

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



40 (a) What vehicle system is shown in Fig. 40.1 below?

[1]

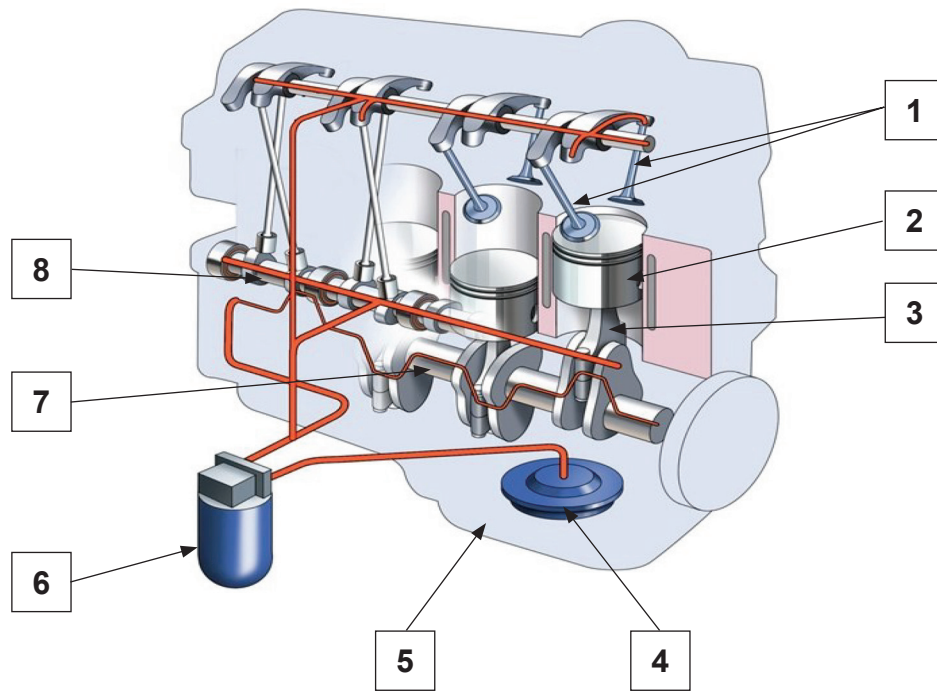


Fig. 40.1

(b) Name the parts 1–8 in Fig. 40.1 above.

1. \_\_\_\_\_ [1]
2. \_\_\_\_\_ [1]
3. \_\_\_\_\_ [1]
4. \_\_\_\_\_ [1]
5. \_\_\_\_\_ [1]
6. \_\_\_\_\_ [1]
7. \_\_\_\_\_ [1]
8. \_\_\_\_\_ [1]

[Turn over



(c) Apart from lubrication, state **one** other reason for the need for oil in a vehicle's engine.

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

(d) Find a phrase in **Group B** to complete each sentence in **Group A** below.

Place a circle around your answer.

**Group A**

1. The high tension lead connects the **a b c d e** [1]

2. The top hose connects the **a b c d e** [1]

3. The negative lead connects the **a b c d e** [1]

4. The universal joint connects the **a b c d e** [1]

5. The big end bearing connects the **a b c d e** [1]

**Group B**

- a battery to the car body.
- b drive shaft to the differential.
- c crankshaft to the connecting rod.
- d coil to the distributor.
- e radiator to the thermostat.

**41 (a)** Name the **two** strokes of the four-stroke cycle where one valve is open.

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

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



(b) Name **two** functions of the flywheel.

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

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

(c) Name **three** checks which a motorist should carry out regularly on the braking system.

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

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

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

(d) What is meant by ABS?

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

[Turn over







**43** “Bad weather makes driving difficult.”

Discuss the challenges of bad weather and the precautions which a driver should take.

Challenges

---

---

---

---

---

---

---

---

---

---

Precautions

---

---

---

---

---

---

---

---

---

---

[10]

[Turn over







---

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

---

**BLANK PAGE**

**DO NOT WRITE ON THIS PAGE**

12929



\*32GMR1129\*

**BLANK PAGE**  
**DO NOT WRITE ON THIS PAGE**

12929



\*32GMR1130\*





**BLANK PAGE**  
**DO NOT WRITE ON THIS PAGE**

12929



\*32GMR1131\*

## SOURCES

Fig.3.1, Fig 8.1, Fig.9.1, Fig.24.1, Fig.24.2, Fig.26.1, Fig.26.2, Fig.26.3, Fig.30.1, Fig.30.2, Fig.30.3, Fig.30.4, Fig.30.5, Fig.30.6:

The Official Highway Code for Northern Ireland. Prepared by the Department for Infrastructure.  
 © Crown copyright 2015.  
 Contains public sector information licensed under the Open Government Licence v3.0.

Fig.6.1, Fig.28.2, Fig.29.1, Fig.35.1; © Getty Images

Fig.19.1, Fig.39.1, Fig.40.1: © Motor Vehicle and Road User Studies by Eamonn McPolin (ISBN: 978-1906578312) Published by Colourpoint Educational, 2009

**DO NOT WRITE ON THIS PAGE**

For Examiner's use only	
Question Number	Marks
1-5	
6-15	
16-20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	

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

Examiner Number

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.

