



Rewarding Learning

General Certificate of Secondary Education
January 2019

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

TUESDAY 15 JANUARY, 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 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 **24, 25** and **26**.



Answer **all** questions

1 What is the name given to a motorway in Germany?

_____ [1]

2 Name **one** item which, by law, must be kept clean on a motor vehicle.

_____ [1]

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

1. breath _____ micrograms per 100 ml. [1]

2. blood _____ milligrams per 100 ml. [1]

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

1. _____ [1]

2. _____ [1]

(c) Name **two** punishments which a court can impose on a driver convicted of having excess alcohol.

1. _____ [1]

2. _____ [1]



4 (a) Apart from airbags, name **three** secondary safety devices found on a motor vehicle.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(b) What action must a driver take if there is a rear-facing baby seat positioned in the front passenger seat of the car?

_____ [1]

5 (a) Suggest **two** reasons why roundabouts are used at major junctions.

1. _____ [1]

2. _____ [1]

(b) Explain briefly the term “parallel parking”.

_____ [2]

[Turn over



6 (a) Give **two** reasons why it makes sense for city commuters to use park and ride schemes.

1. _____ [1]

2. _____ [1]

(b) Name **two** actions you cannot take on the hard shoulder of a motorway.

1. _____ [1]

2. _____ [1]

(c) What action should you take if you see an object which has fallen onto the motorway?

_____ [1]



7 Study the photograph in **Fig. 7.1** below.



Source: Chief Examiner

Fig. 7.1

List **five** potential hazards for motorists travelling along the stretch of road in **Fig. 7.1** above.

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

[Turn over



8 (a) Study the road signs below.

State the meaning of each of the road signs in Fig. 8.1 to Fig. 8.6.



Fig. 8.1



Fig. 8.2



Fig. 8.3



Fig. 8.4



Fig. 8.5



Fig. 8.6

© Crown copyright 2015. The Official Highway Code for Northern Ireland prepared by the Department for Infrastructure. <https://www.nidirect.gov.uk/content/crown-copyright>

Fig. 8.1 _____ [1]

Fig. 8.2 _____ [1]

Fig. 8.3 _____ [1]

Fig. 8.4 _____ [1]

Fig. 8.5 _____ [1]

Fig. 8.6 _____ [1]



(b) Examine **Fig. 8.7** below carefully.



Source: Chief Examiner

Fig. 8.7

(i) Suggest a speed limit for traffic in **Fig. 8.7**.

_____ [1]

(ii) Give **one** reason for your answer to question **8(b)(i)** above.

_____ [1]

[Turn over



(c) Examine **Fig. 8.8** below carefully.



Source: Chief Examiner

Fig. 8.8

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

[1]



9 (a) List **three** actions a driver should take when joining a motorway.

1. _____ [1]

2. _____ [1]

3. _____ [1]

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

1. _____ [1]

2. _____ [1]

3. _____ [1]

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

1. _____ [1]

2. _____ [1]

10 (a) List **three** methods the police can use to aid road safety.

1. _____ [1]

2. _____ [1]

3. _____ [1]

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

1. _____ [1]

2. _____ [1]

[Turn over



11 (a) Name **five** legal requirements/documents which motorists must have before taking a vehicle more than four years old onto the road.

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

(b) Name the **three** types of motor insurance cover.

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

(c) Name the type of insurance which offers the most cover or protection.

_____ [1]

(d) Name **one** disadvantage of this type of cover.

_____ [1]



12 (a) Apart from your name and address, list **three** additional pieces of information you are required to give when applying for a driving licence.

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

(b) Write down **two** occasions when you are legally required to inform the DVA of a change to your circumstances regarding

(i) you as a driver,

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

(ii) your car.

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

(c) After how many years, since new, does a car require an MOT in Northern Ireland?

_____ [1]

[Turn over



13 (a) Name **two** exhaust gases which are monitored for air quality.

1. _____ [1]

2. _____ [1]

(b) Where would you expect to find high concentrations of these gases?

_____ [1]

(c) Name **two** advantages of a hybrid car.

1. _____ [1]

2. _____ [1]

14 (a) State **two** measures introduced in "The Road Traffic (NI) Order 2007".

1. _____ [1]

2. _____ [1]

(b) When designing a new road, an environmental assessment is carried out.

Write down **two** items that may be examined in such an assessment.

1. _____ [1]

2. _____ [1]



15 (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 shampoo and water mixture.

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 _____ kml [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]



16 (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) Name **one** possible additional cost for motorists.

_____ [1]

[Turn over



17 A motorist is calculating the cost of owning and running a car. The expenses are summarised below. Calculate the monthly expenditure.

Road Tax £190 p.a.

Insurance £648 p.a.

Servicing £360 p.a.

Parking £20 per month

Fuel 18000 miles p.a. at an average of 36 mpg with fuel costing 135p/litre
(1 gallon = 4.55 litres)

Show all your working out.

Answer _____ [8]



18 (a) List **two** ways in which you could protect the scene of an accident.

1. _____ [1]

2. _____ [1]

(b) List **three** ways in which you could make a vehicle safe at the scene of an accident.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(c) Write down **four** symptoms of shock.

1. _____ [1]

2. _____ [1]

3. _____ [1]

4. _____ [1]

[Turn over



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

- 1. Coil _____ system [1]
- 2. Solenoid _____ system [1]
- 3. Thermostat _____ system [1]
- 4. Wishbones _____ system [1]

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

_____ [1]

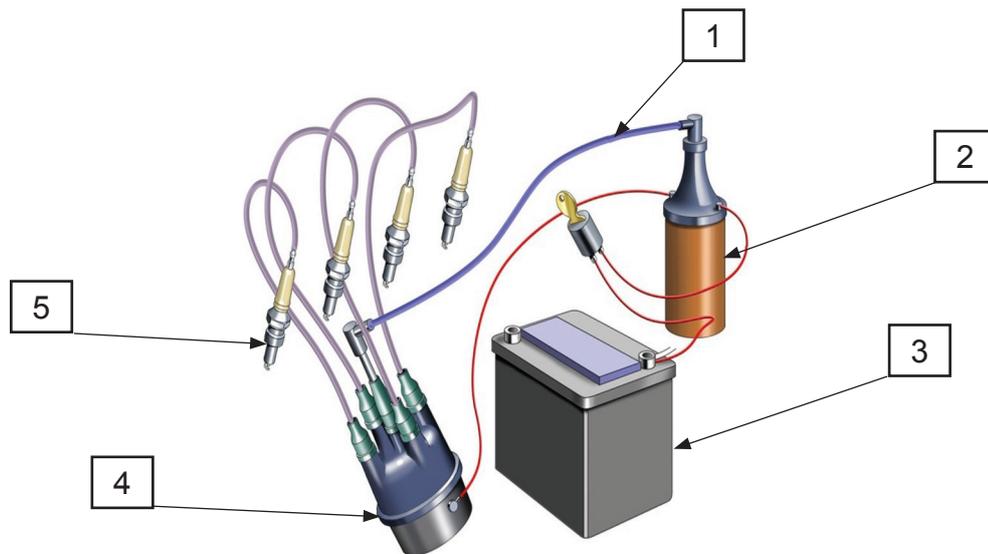
(c) Name the **three** strokes of the four-stroke engine which do not produce power.

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



20 (a) Name the parts labelled 1–5 in Fig. 20.1 below.

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



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Fig. 20.1

(b) Name **three** filters found on a motor vehicle.

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

(c) What is the purpose of a filter?

_____ [1]

[Turn over



21 (a) Explain briefly the purpose of a differential.

_____ [1]

(b) Explain why it is important not to be in an enclosed garage with a vehicle engine running.

_____ [1]

(c) Explain briefly the function of a dip stick in a car engine.

_____ [1]

(d) List **three** basic maintenance checks which should be carried out on the electrical system.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(e) Two components of the water cooling system help maintain it at the correct temperature.

What are these **two** components?

1. _____ [1]

2. _____ [1]

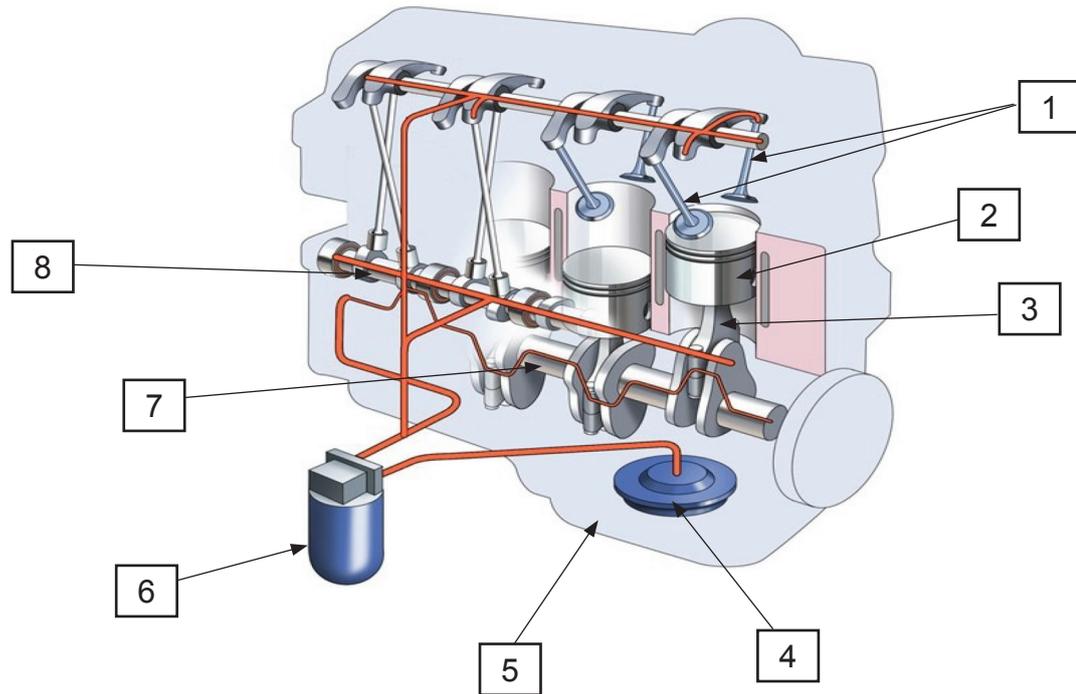
(f) Why is it necessary to maintain the cooling system at the correct temperature?

_____ [1]



22 (a) What vehicle system is shown in Fig. 22.1 below?

[1]



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Fig. 22.1

(b) Name the parts 1–8 in Fig. 22.1 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]

23 Explain briefly how you would drive safely through a busy city.

_____ [6]



24 A responsible driver is always careful.

Give your views on this statement making reference in your answer to visibility, observation and anticipation.

Visibility _____

Observation _____

Anticipation _____

[12]

[Turn over



25 The road user, the environment and the vehicle can all contribute to traffic collisions. Discuss the efforts being made by various bodies to reduce road casualties, making reference to these factors.

Road user _____

Environment _____



Vehicle _____

[12]

[Turn over

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For Examiner's use only	
Question Number	Marks
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Examiner Number

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