



Rewarding Learning

General Certificate of Secondary Education
2024

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

MV18

[GMR11]

THURSDAY 9 MAY, AFTERNOON

Time

1 hour 45 minutes, plus your additional time allowance.

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 on blank pages.

Complete in black ink only.

Answer **all** questions.

Information for Candidates

The total mark for this paper is 160.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Questions **40, 41** and **42**.

An A3 insert has been provided for use with Question **34**.

Answer **all** questions

- 1 According to the Highway Code, on what type of road would you find the sign in **Fig. 1.1** below? [1 mark]
-

Fig. 1.1



- 2 At the start of the driving test, the driver is asked to read a number plate from a distance of _____ metres. [1 mark]
- 3 Cars towing caravans or trailers are restricted to a speed of _____ mph on single carriageways. [1 mark]
- 4 ABS, wipers and lights are all features of _____ safety. [1 mark]

5 The sign in **Fig. 5.1** below means _____
[1 mark]

Fig. 5.1

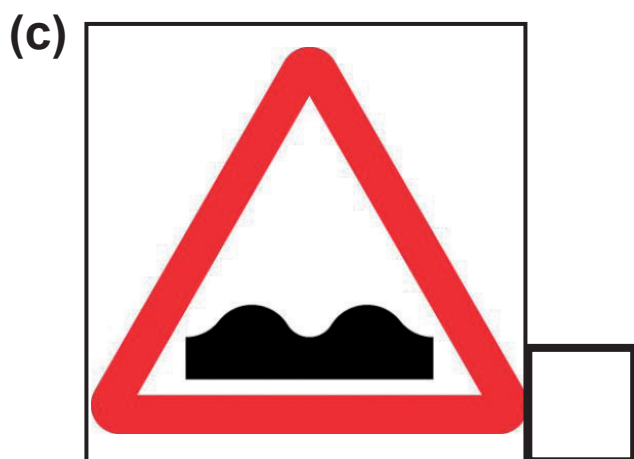
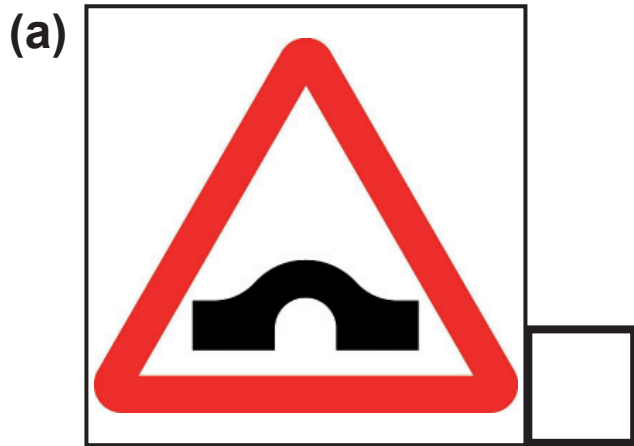


- 6 Which warning sign, (a), (b) or (c) opposite, would be used to highlight the hazard on the road ahead in **Fig. 6.1**?

Fig. 6.1



Tick [✓] the correct box. [1 mark]



7 The national speed limit in Northern Ireland in mph is _____ . [1 mark]

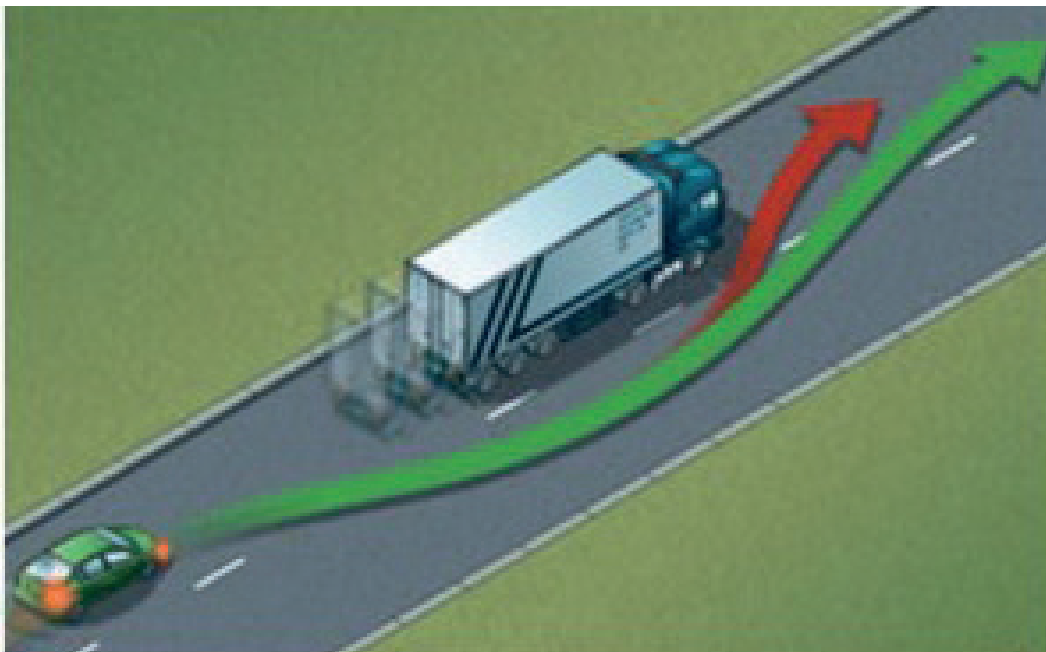
8 On some roads there are features which are intended to slow motorists down.

These are referred to as

_____ measures. [1 mark]

9 **Fig. 9.1** below shows an _____ manoeuvre. [1 mark]

Fig. 9.1

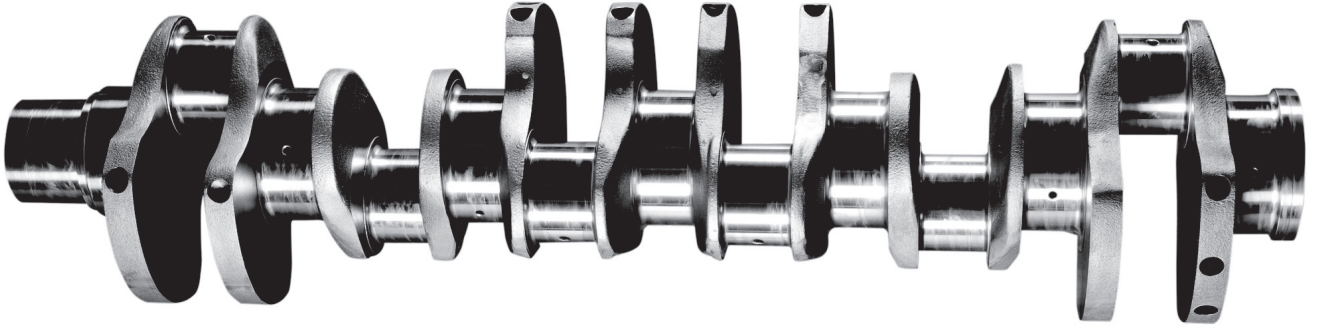


- 10** When joining a motorway, you will approach it from a road on the left known as a _____ road.
[1 mark]
- 11** In Northern Ireland all vehicles over _____ years old must complete an annual MOT test. [1 mark]
- 12** A document which provides details about legal proof of insurance is known as the insurance _____ .
[1 mark]
- 13** A road that is only wide enough for one vehicle is known as a _____ road. [1 mark]
- 14** _____ is the most expensive standing cost for a motorist. [1 mark]

- 15** _____ is a method used to rent a vehicle for an agreed period of time. [1 mark]
- 16** A bruise is an example of a _____ wound. [1 mark]
- 17** The inlet manifold is part of the _____ system. [1 mark]
- 18** Induction, compression, power, transfer and exhaust are cycles found in a _____ engine. [1 mark]

19 Fig. 19.1 below shows a picture of a _____.
[1 mark]

Fig. 19.1



20 A diesel particulate filter is part of the _____ system. [1 mark]

Vehicle Control and Road User Behaviour

21 Fig. 21.1



What is the meaning of the sign in **Fig. 21.1** above?
[1 mark]

22 When might high-sided vehicles have to drive in the middle of the road? [1 mark]

23 Give **two** reasons why a driver should not drive when tired.
[1 mark for each]

1. _____

2. _____

24 Apart from seatbelts, list **three** items of secondary safety found on a motor vehicle. [1 mark each]

1. _____

2. _____

3. _____

25 (a) A broken white line marks the **(i)** _____ of the road.

When this line gets **(ii)** _____ and the gaps between each line get **(iii)** _____, it means that there is a **(iv)** _____ ahead. [4 marks]

(b) Choose **one colour** from the list below to complete each statement correctly. [1 mark for each]

Green

Red

White

Amber

(i) _____ studs separate traffic lanes.

(ii) _____ studs mark the left-hand edge of the carriageway.

(iii) _____ studs mark a side or slip road.

(iv) _____ studs mark the right-hand edge of the carriageway or central reservation.

26 (a) Write down **two** hazards caused by fog.

[1 mark for each]

1. _____

2. _____

(b) Write down **four** precautions which a driver is advised to take in heavy fog. [1 mark for each]

1. _____

2. _____

3. _____

4. _____

27 (a) Write down **two** ways in which crosswinds can cause problems when driving. [1 mark for each]

1. _____

2. _____

(b) Where would a driver be most likely to experience crosswinds? [1 mark]

(c) Write down **two** types of vehicle which would be most vulnerable to crosswinds. [1 mark for each]

1. _____

2. _____

(d) Examine the photograph in **Fig. 27.1** below.

Fig. 27.1



List **three** actions that the motorists in **Fig. 27.1** can take to help with their visibility of the road ahead.
[1 mark for each]

- 1. _____
- 2. _____
- 3. _____

28 Examine the photograph in **Fig. 28.1** below.

Fig. 28.1



(a) List **two** actions a motorist should take when approaching the hazard in **Fig. 28.1** above.

[1 mark for each]

1. _____

2. _____

(b) State **one** action a motorist should not take when approaching the hazard in **Fig. 28.1** above. [1 mark]

(c) Give **one** reason for your answer to question **28(b)** above. [1 mark]

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(Questions continue overleaf)

29 (a) Give the meaning of each of the road signs shown in **Fig. 29.1 a** to **Fig. 29.1 f** opposite. [1 mark for each]

Fig. 29.1 a _____

Fig. 29.1 b _____

Fig. 29.1 c _____

Fig. 29.1 d _____

Fig. 29.1 e _____

Fig. 29.1 f _____

Fig. 29.1 a



Fig. 29.1 d



Fig. 29.1 b



Fig. 29.1 e



Fig. 29.1 c



Fig. 29.1 f



(b) Name the type of sign which would use the colours in Fig. 29.1 g to Fig. 29.1 j below. [1 mark for each]

Fig. 29.1 g



Fig. 29.1 h



Fig. 29.1 i



Fig. 29.1 j



Fig. 29.1 g _____

Fig. 29.1 h _____

Fig. 29.1 i _____

Fig. 29.1 j _____

(c) What is the name given to the edge line along a motorway, which causes a vehicle to vibrate if it is driven on or crossed? [1 mark]

Legal Requirements

30 (a) Write down the meaning of each of the following insurance terms. [1 mark for each]

(i) Proposer

(ii) Agent

(iii) Broker

(iv) Green Card

(b) Give the meanings of the following initials:
[1 mark for each]

MOT

DVA

31 (a) List **three** pieces of information given on a driver's licence. [1 mark for each]

1. _____

2. _____

3. _____

(b) After age 70, how often must a licence be renewed?
[1 mark]

(c) State **two** reasons why motorists of 70 years and over must reapply for their driving licence more frequently than younger drivers. [1 mark]

1. _____

2. _____

(d) State **two** restrictions imposed on newly qualified drivers. [1 mark]

1. _____

2. _____

Road Transport and its Effect on Society

32 When planning and designing a new road, the effects it may have on the environment are examined carefully by the design team.

(a) For each of the factors listed below, state **two** ways in which the effects on the environment can be minimised.
[1 mark for each]

Traffic noise

1. _____
2. _____

Heritage and conservation

1. _____
2. _____

(b) When designing and building a new road, give **one** feature that can be created to allow wild animals to pass safely from one side of the road to the other. [1 mark]

(c) Give **two** examples of traffic noise pollution.
[1 mark for each]

1. _____
2. _____

Motoring Mathematics

33 (a) State **two** legal methods of possessing a car, apart from buying. [1 mark for each]

1. _____

2. _____

(b) Give **two** reasons why fuel consumption figures for a vehicle do not remain constant during a journey.

[1 mark for each]

1. _____

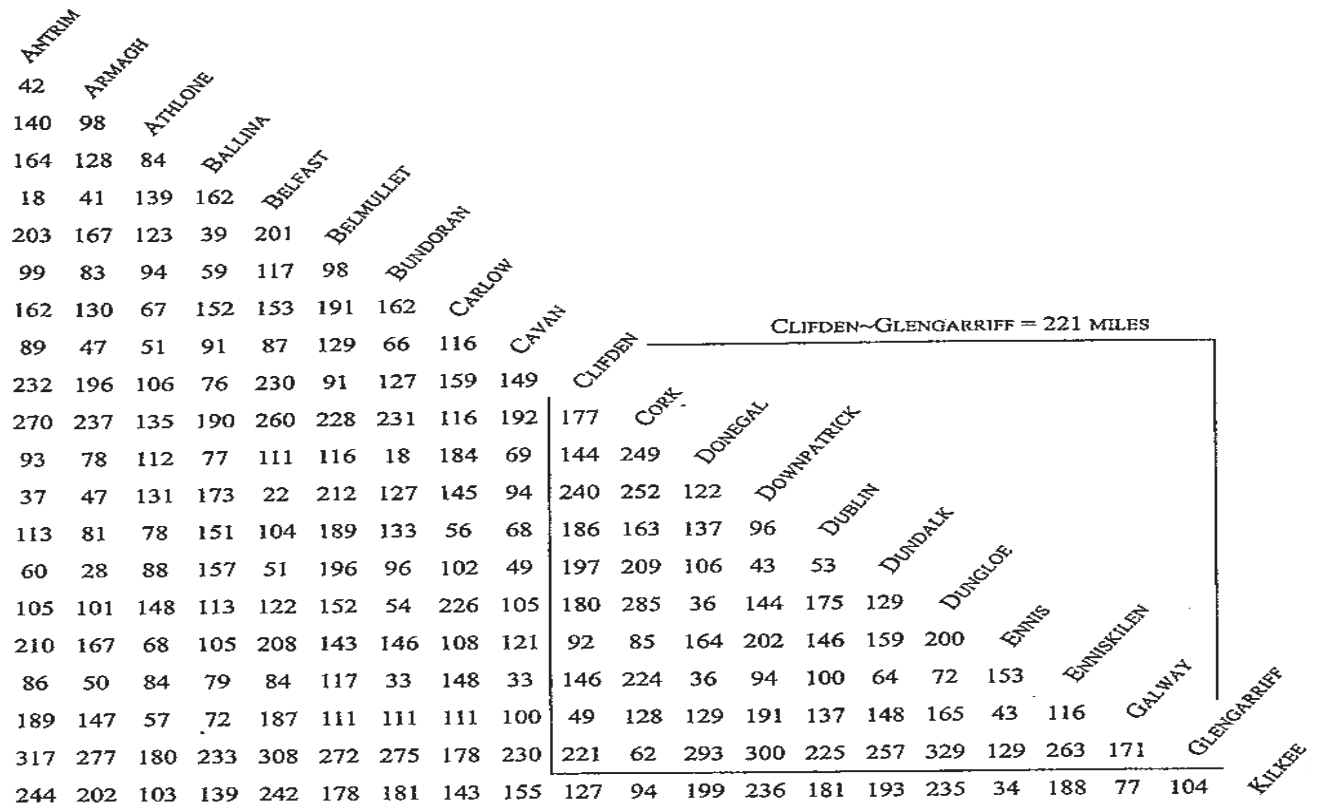
2. _____

(c) State **two** advantages of using a credit card to pay for fuel for a vehicle. [1 mark for each]

1. _____

2. _____

Fig. 34.1



(a) Study the distance chart shown in Fig. 34.1 above. An A3 insert has also been provided for clarity.

What is the distance in miles from Galway to Belfast?
[1 mark]

(b) Motorist **A** leaves Armagh at 10.00 hrs to travel to Galway.

Motorist **B** leaves Belfast at 9.30 hrs to travel to Galway.

If both motorists **A** and **B** travel at the same average speed of 60 mph, which motorist will get to Galway first and by how many minutes?

Show all calculations. [7 marks]

Motorist _____
by _____ minutes.

Collision Procedures

35 (a) What is the primary aim of protecting the scene of an accident? [1 mark]

(b) List **three** steps that should be taken to protect an accident scene. [1 mark for each]

1. _____

2. _____

3. _____

(c) Following an injury accident, when does a driver have to produce driving documents to the police? [1 mark]

(d) In what circumstances would a casualty be moved from a crashed vehicle? [1 mark]

(e) How should a grazed wound be treated? [1 mark]

Motor Vehicle Technology

36 (a) Explain the term “viscosity” with reference to engine oil.
[1 mark]

(b) Which of the following oil types flows better in cold conditions, 10W-50 or 30W-50? [1 mark]

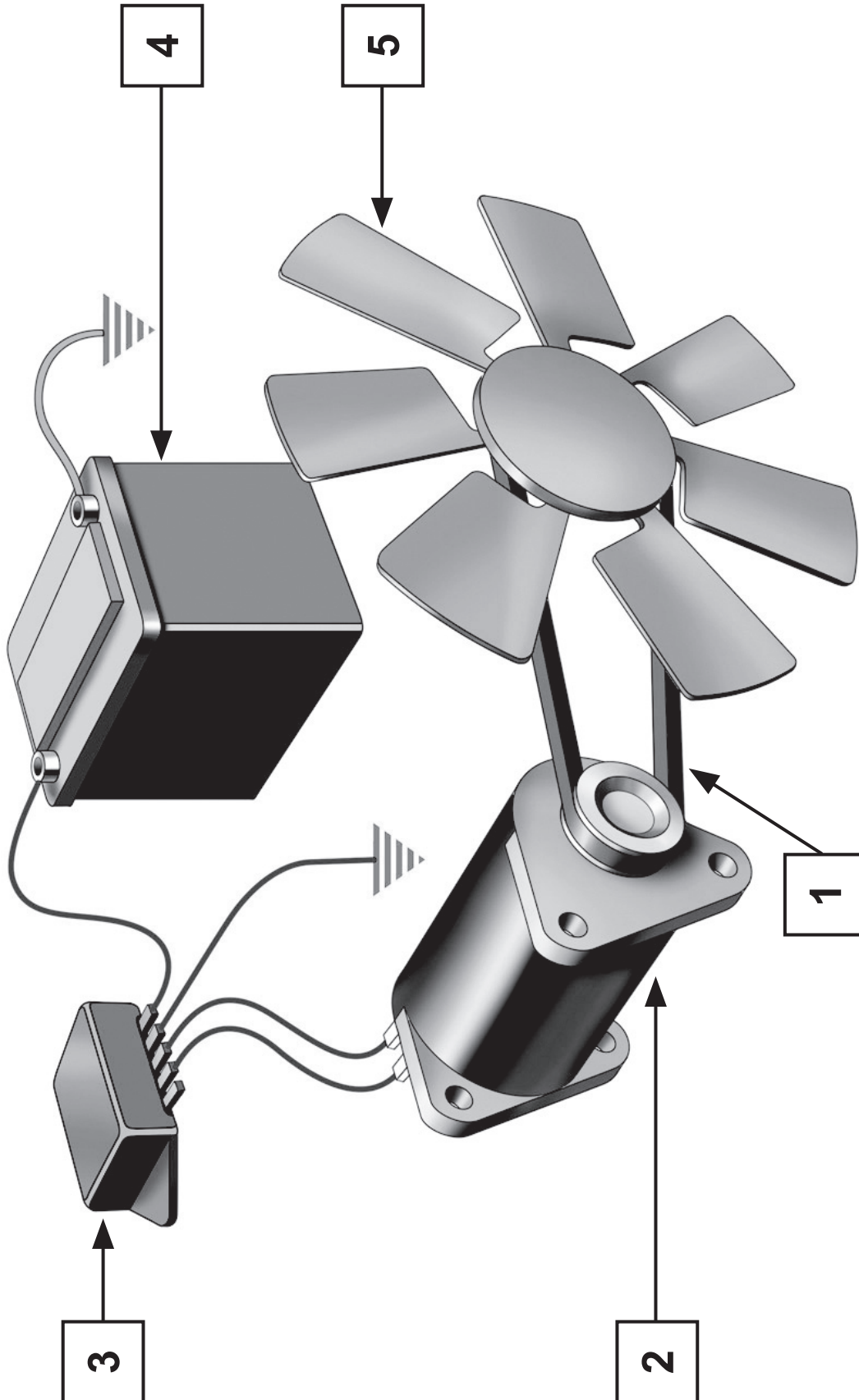
(c) State **two** main reasons for using oil in a vehicle’s engine. [1 mark for each]

1. _____

2. _____

37 (a) Fig. 37.1 below shows the main parts of the _____ system. [1 mark]

Fig. 37.1



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(b) Name the parts marked **1 – 5** in **Fig. 37.1** opposite.

[1 mark for each]

1. _____

2. _____

3. _____

4. _____

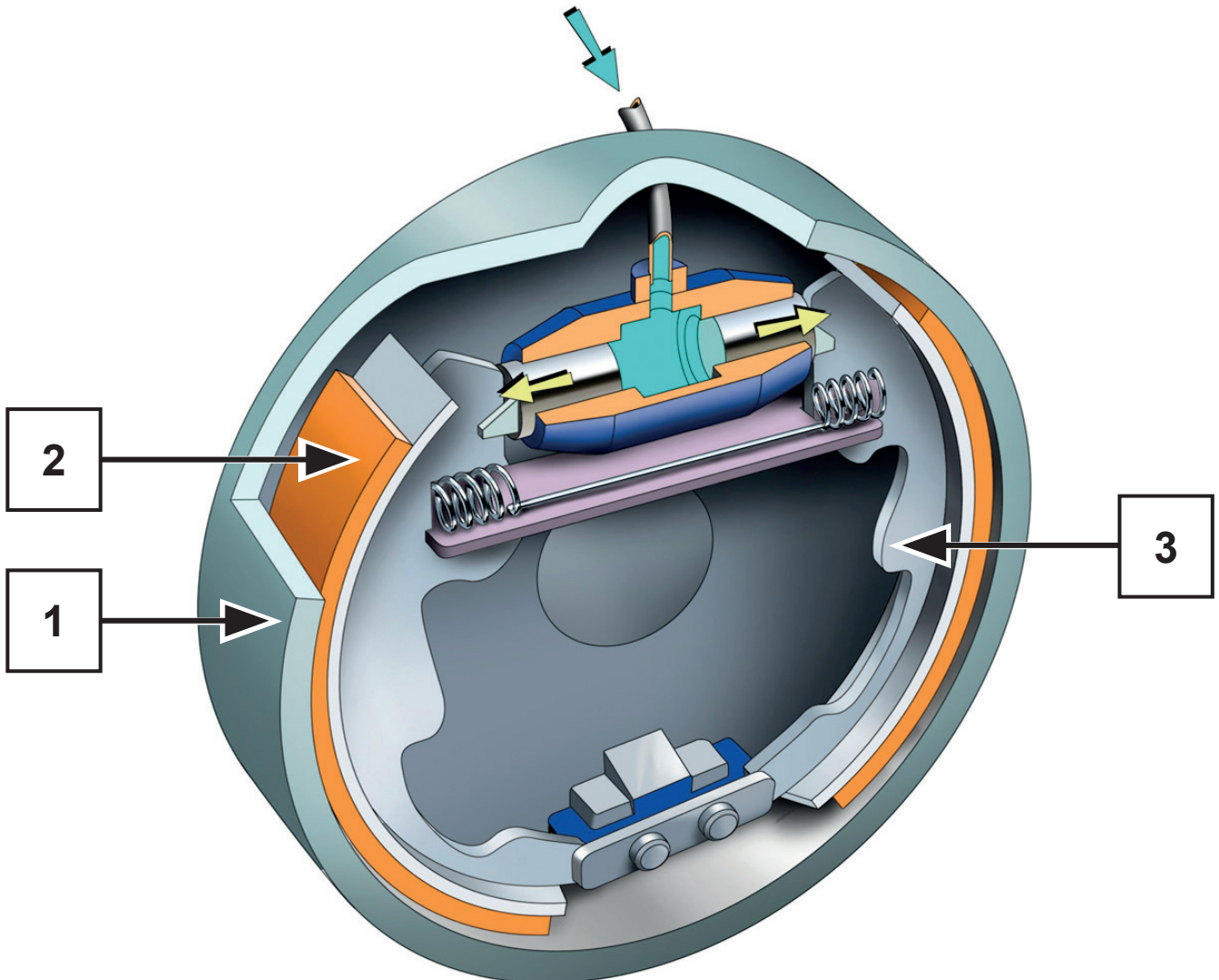
5. _____

(c) Explain briefly the purpose of a vehicle's suspension system. [1 mark]

(d) Apart from the fact that the engine will not run, why is it important to ensure that a car's fuel tank is never completely emptied? [1 mark]

38 (a) Fig. 38.1 below shows the main parts of a _____ brake. [1 mark]

Fig. 38.1



(b) Name the parts numbered 1 – 3 in Fig. 38.1 above. [1 mark for each]

1. _____
2. _____
3. _____

(c) Name the component which [1 mark for each]

1. attaches the piston to the connecting rod

2. forces the coolant to circulate around the engine

3. distributes fuel to the individual cylinders

(d) State the reason why an engine's flywheel is toothed.
[1 mark]

39 (a) What **two** maintenance checks could be carried out on a vehicle's exhaust system? [1 mark for each]

1. _____

2. _____

(b) Fig. 39.1

Gear wheel **B**
= 13 teeth



Gear wheel **A**
= 39 teeth

In **Fig. 39.1** opposite, if gear wheel **A** makes 12 revolutions, gear wheel **B** will turn _____ times. [1 mark]

(c) Fig. 39.2 below shows common dashboard clocks.

Fig. 39.2



What information is provided on each of the dashboard clocks labelled **1 – 3** in **Fig. 39.2** opposite?

[1 mark for each]

1. _____

2. _____

3. _____

(d) What speed in mph is the vehicle currently travelling in **Fig. 39.2** opposite? [1 mark]

(e) What information does the number 412631 in **Fig. 39.2** opposite give? [1 mark]

In Questions **40**, **41** and **42** you will be assessed on your written communication skills.

40 Giving **three** reasons, explain why a speed limit is not a target to aim for or to exceed. [6 marks]

This is the end of the question paper

SOURCES

Fig. 5.1: "The Official Highway Code for Northern Ireland. Prepared by the Department for
 Fig. 6.1: Infrastructure.© Crown copyright 2015. Contains public sector information licensed under the
 Fig. 9.1: Open Government Licence v3.0."
 Fig. 21.1:
 Fig. 29.1a–f:

Fig.6.1 © Getty Images
 Fig.19.1
 Fig.27.1
 Fig.28.1
 Fig.39.1
 Fig.39.2

Fig. 37.1: © Motor Vehicle and Road User Studies by Eamon McPolin, publisher Colourpoint Educational
 Fig. 38.1: (2009) ISBN: 978-1-1906578312

For Examiner's use only	
Question Number	Marks
1–5	
6–8	
9–14	
15–20	
21	
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Total Marks	
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Examiner Number

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Fig. 34.1

	Clifden	Cork	Donegal	Downpatrick	Dublin	Dundalk	Dungloe	Finis	Fniskillen	Galway	Glengarriff	Kilkee
Artrim	177	144	240	186	197	180	92	146	49	221	127	
Armagh	144	249	252	163	209	285	85	224	128	62	94	
Athlone	240	122	137	106	43	144	202	36	129	293	199	
Ballyna	186	163	137	96	53	175	129	159	148	300	236	
Belfast	197	209	106	43	53	146	200	72	165	257	193	
Belmullet	180	285	36	144	175	129	200	153	43	263	188	
Bundoran	92	85	164	202	146	159	200	72	153	129	34	
Carlow	146	224	36	94	100	64	72	153	43	329	235	
Cavan	49	128	129	191	137	148	165	43	116	171	77	
Clifden	221	62	293	300	225	257	329	129	263	171	104	
Clifden - Glengarriff - 221 miles	127	94	199	236	181	193	235	34	188	77	104	