

New  
Specification



Rewarding Learning

General Certificate of Secondary Education  
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



**[GMR11]**

\*GMR11\*

**WEDNESDAY 8 MAY, AFTERNOON**

## 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 **41**, **42** and **43**.

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Answer **all** questions

- 1 The *Highway Code* states that, unless a different speed limit is shown, it is illegal to drive at a speed greater than \_\_\_\_\_ mph. [1]
- 2 Road signs giving orders are mostly \_\_\_\_\_ in shape. [1]
- 3 \_\_\_\_\_ crossings allow cyclists and pedestrians to share crossing space and to cross at the same time. [1]
- 4 The abbreviation "BAC" stands for blood \_\_\_\_\_ concentration. [1]
- 5 ABS and windscreen wipers are two examples of \_\_\_\_\_ safety features. [1]
- 6 Parking attendants wear \_\_\_\_\_ and black coloured uniforms. [1]
- 7 Mirror, signal and \_\_\_\_\_ (MSM) are essential actions for safe driving. [1]

[Turn over



8 On what type of road would you find this sign?



Fig. 8.1

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

9 The sun is more dangerous for motorists during the season of \_\_\_\_\_ because it is lower in the sky. [1]

10 An endorsable ticket issued by the police imposes a fine and \_\_\_\_\_ . [1]

11 The legal tread depth for cars, vans and light vehicles is \_\_\_\_\_ mm. [1]

12 To drive an LGV, you must be at least \_\_\_\_\_ years of age. [1]

13 A \_\_\_\_\_ vehicle can use both electricity and petrol. [1]



14 A motorist entitled to a 30% no claims discount is quoted an insurance premium of £540, before deduction. This means the actual payment will be

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

15 Purchasing, standing, \_\_\_\_\_ and additional are all costs associated with motoring. [1]

16 Incised, lacerated, contused and punctured are all types of \_\_\_\_\_ . [1]

17 A \_\_\_\_\_ is used to check the amount of oil in a vehicle's engine. [1]

18 Fig. 18.1 below shows a picture of a \_\_\_\_\_ . [1]



Fig. 18.1

19 A thermostat is part of the \_\_\_\_\_ system in a vehicle. [1]

20 Inlet, \_\_\_\_\_ and transfer are all ports found on a two-stroke engine. [1]

[Turn over



## Vehicle Control and Road User Behaviour

21 What does the number 11 stand for on the motorway sign in Fig. 21.1 below?

[1]



Fig. 21.1

22



Fig. 22.1

At the sign in Fig. 22.1 above, would you be travelling uphill or downhill?

[1]



23 What is the meaning of the information given inside the red circle on the road sign in Fig. 23.1 below?

[1]



Fig. 23.1

24 What action should the motorist towing the caravan in Fig. 24.1 below have taken before pulling out of the junction?

[1]

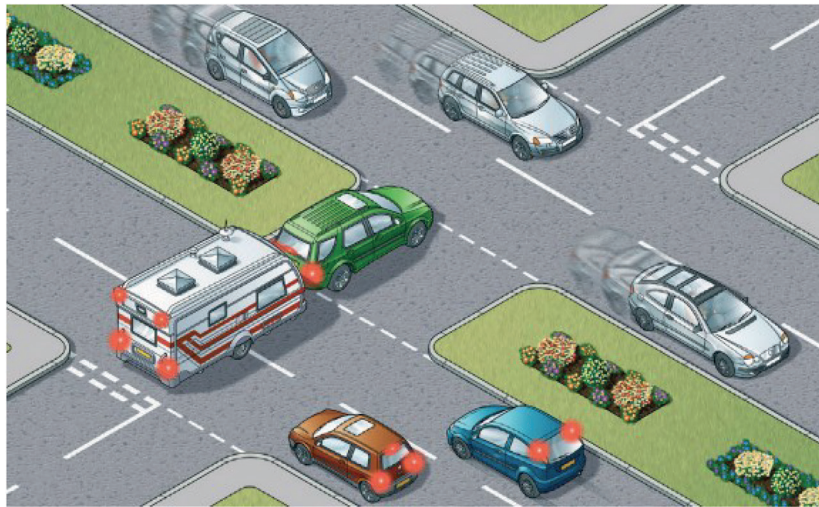


Fig. 24.1



25 (a) Give **two** reasons why motorists should drive more slowly than normal on the stretch of road shown in **Fig. 25.1** below.

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

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



**Fig. 25.1**

(b) How could driving too fast in the conditions in **Fig. 25.1** affect the handling of a vehicle?

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

26 List **three** pieces of advice given in the *Highway Code* for driving in fog.

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

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

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





Fig. 27.1

(a) What is the common name given to the object shown in **Fig. 27.1** above?

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

(b) How can the object in **Fig. 27.1** be useful to a driver?

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

(c) Explain what is meant by a “crawler” lane.

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

(d) How does traffic calming help prevent accidents?

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

[Turn over



28 (a) Write down **three** types of road user not permitted to use a motorway.

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

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

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

(c) List **three** actions a driver should take if the car breaks down on a motorway.

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





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**(Questions continue overleaf)**

**[Turn over**



29 The table in **Fig. 29.1** below shows part of the speed limit table from the *Highway Code*.

Some speeds have been replaced by the letters **A** to **F**. In the spaces provided opposite write down the correct speed in mph.

Speed Limits	Built-up areas	Elsewhere		Motorways
		Single carriageways	Dual carriageways	
				
 <b>Cars &amp; motorcycles</b> (including car-derived vans up to 2 tonnes maximum laden weight)	30	<b>A</b>	70	70
 <b>Cars towing caravans or trailers</b> (including car-derived vans and motorcycles)	30	<b>B</b>	60	<b>C</b>
 <b>Buses, coaches and minibuses</b> (not exceeding 12 metres in overall length)	30	50	<b>D</b>	70
 <b>Goods vehicles</b> (not exceeding 7.5 tonnes maximum laden weight)	30	50	<b>E</b>	70
 <b>Goods vehicles</b> (exceeding 7.5 tonnes maximum laden weight)	30	<b>F</b>	50	60

**Fig. 29.1**



A \_\_\_\_\_

[1]

B \_\_\_\_\_

[1]

C \_\_\_\_\_

[1]

D \_\_\_\_\_

[1]

E \_\_\_\_\_

[1]

F \_\_\_\_\_

[1]

[Turn over



30 (a) Give the meaning of each of the road signs shown in Fig. 30.1 to Fig. 30.6 below.



Fig. 30.1



Fig. 30.2



Fig. 30.3

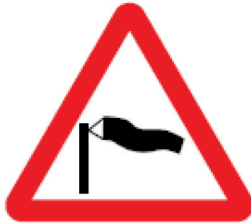


Fig. 30.4



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]



(b) What benefit is the sign in Fig. 30.7 below to a disabled person?

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[1]



Fig. 30.7



Fig. 30.8

(c) Explain briefly what a controlled zone is as in Fig. 30.8 above.

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[1]

(d) Write down **three** places where a driver must not park.

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

[Turn over



31 Study the photographs in **Fig. 31.1** and **Fig. 31.2** below.



**Fig. 31.1**



**Fig. 31.2**

(a) Give **two** reasons why the position of the lorry in **Fig. 31.1** is dangerous for passing motorists.

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

(b) What action might motorists in **Fig. 31.2** have to take if they were to meet an approaching vehicle coming past the lorry?

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



**Fig. 31.3** and **Fig. 31.4** below show buses reversing into the parking bay.



**Fig. 31.3**



**Fig. 31.4**

**(c)** Why could the bus manoeuvre be dangerous to passing motorists?

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



## Legal Requirements

32 (a) Insert the following words in the paragraph below.

insurance certificate      no claims discount      premium  
policy holder      insurance company

The \_\_\_\_\_ had an accident. He phoned the  
\_\_\_\_\_ right away. He was able to produce his  
\_\_\_\_\_ to the police within 24 hours.

His \_\_\_\_\_ will not increase as his  
\_\_\_\_\_ was protected.

[5]

(b) Name the **three** legal requirements for a passenger who is supervising a learner driver.

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

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

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

33 (a) Write down **four** items of equipment on a car that are tested in an MOT test in Northern Ireland.

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

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

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

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

(b) When examining a tyre for wear or damage, list **two** things you would look for.

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

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



## Road Transport and its Effect on Society

34 (a) Write down **two** advantages and **two** disadvantages of using public transport.

Advantages

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

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

Disadvantages

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

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

(b) Name **three** exhaust pollutants.

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

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

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

[Turn over



## Motoring Mathematics

35 Fig. 35.1 below shows road users killed and injured over a period of one year.

Ages	Pedestrians		Drivers of Motor Vehicles		Motor Cyclists	
	Killed	Injured	Killed	Injured	Killed	Injured
Under 5	1	115	–	–	–	–
5–10	4	263	–	–	–	–
11–15	4	204	–	3	–	1
16–19	3	97	4	421	–	31
20–24	3	114	12	1757	2	84
25–34	1	77	10	948	1	65
35–44	6	69	6	1052	3	35
45–54	3	67	4	650	1	17
55–59	2	24	2	189	–	3
60–64	5	25	3	119	–	2
65 +	15	127	7	261	1	2
<b>Totals</b>	<b>47</b>	<b>1182</b>	<b>48</b>	<b>5400</b>	<b>8</b>	<b>240</b>

Fig. 35.1

(a) What age group shows the largest number of pedestrians injured?

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

(b) Suggest **two** reasons which might account for this.

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

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



(c) What was the total number of injuries recorded over the year?

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

(d) What driver group suffers most fatalities and injuries?

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

(e) Give **two** reasons why this age group suffers most fatalities and injuries.

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

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

[Turn over



**36** A new Audi TT costs £33,000. The new owner has asked for a personalised number plate costing £75, Audi seat covers and mats costing £125 and a set of alloy wheels costing £450 to be fitted. The new owner has agreed to pay a deposit of £7,000 and use finance to pay the remaining sum over five years.

**(a)** Calculate the total cost of the vehicle.

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

**(b)** Calculate the cost of the monthly payments over five years.

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



(c) The new owner drove the car home at an average speed of 56mph for the first hour and spent a further two hours travelling the remaining 120 miles.

(i) What was the total distance travelled?

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

(ii) What was the average speed for the whole journey?

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

[Turn over



## Collision Procedures

- 37 (a) How many minutes would it take for the brain to be deprived of oxygen before permanent damage would occur?

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

- (b) If a casualty is not breathing, what action should you take?

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

- (c) List **three** items of equipment which can be carried in a vehicle and may be useful at the scene of an accident.

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

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

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

- (d) State **two** actions that you should take if you find a casualty suffering from shock.

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

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





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## Motor Vehicle Technology

38 (a) Write down **four** different electrical signals a driver can use.

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

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

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

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

(b) List **four** maintenance checks which should be made on the cooling system.

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

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

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

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

(c) State the **two** main purposes of oil in an engine lubricating system.

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

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



39 (a) Name the parts labelled 1–3 in Fig. 39.1 below.

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

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

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

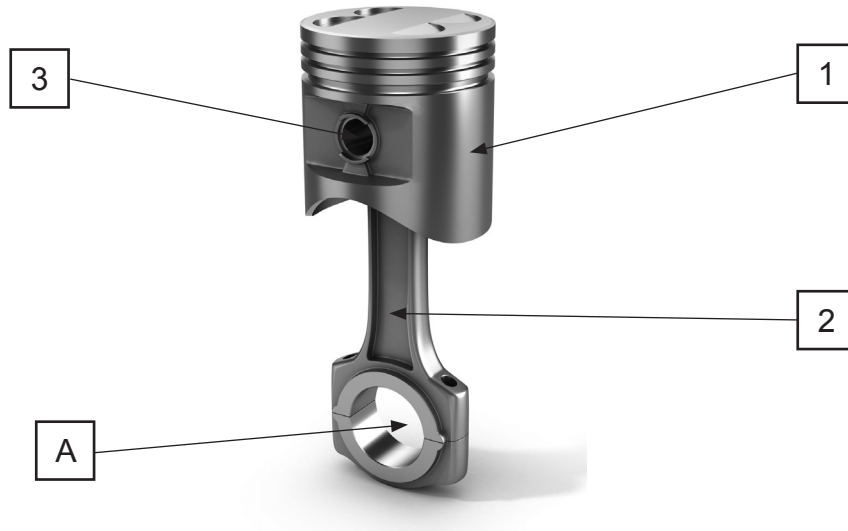


Fig. 39.1

(b) Which component passes through part A in Fig. 39.1 above?

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



(c) Fill in the gaps to complete the sentences below. Choose **one** word from each numbered column.

1	2	3	4
driver	as	Pressure	induction
passenger	more	Fluid	inlet
system	under	Gas	water
fluid	less	Vacuum	exhaust

The brake servo increases the force applied by the (1) \_\_\_\_\_ on the pedal. It makes the brakes (2) \_\_\_\_\_ effective.

(3) \_\_\_\_\_, from the engine (4) \_\_\_\_\_ manifold, is used to work most brake servos. [4]

(d) What is the name of the vehicle part shown in **Fig. 39.2** below?

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

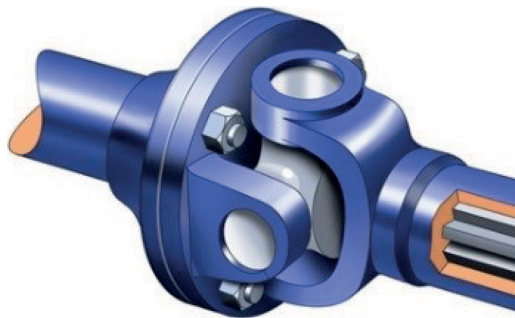


Fig. 39.2





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40 (a) Match the diagrams Fig. 40.1 to Fig. 40.3 to the engine types below.



Fig. 40.1

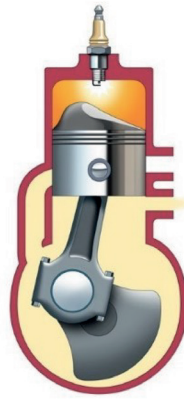


Fig. 40.2

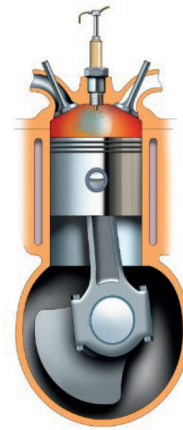


Fig. 40.3

1. Diesel engine
2. Four-stroke engine
3. Two-stroke engine

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

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

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



(b) The diagram in Fig. 40.4 below shows the main parts of the

\_\_\_\_\_ system.

[1]

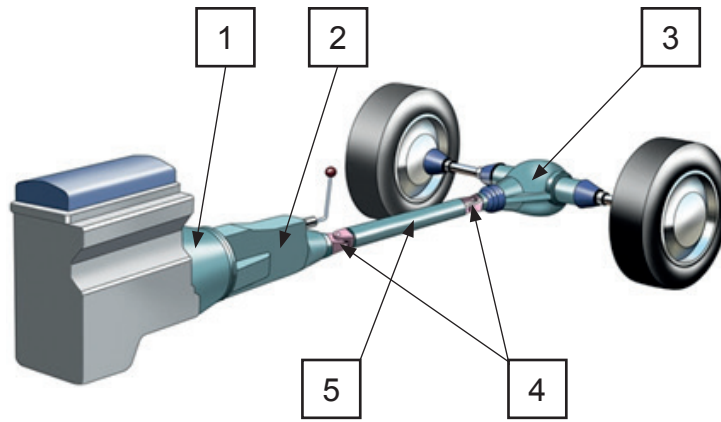


Fig. 40.4

(c) Name the parts 1–5 in Fig. 40.4.

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

[Turn over



41 Explain why a speed limit is not a target to aim for or to exceed.

Give **three** reasons.

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[6]





42 Accidents at night are more likely to have serious or fatal results. Describe **three** dangers of night-time driving and suggest what precautions can be taken by drivers to minimise them.

Dangers

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Precautions

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[10]

[Turn over



43 It has been said that the safest type of road is the motorway. Discuss how vehicle preparation, route planning and driver strategy can be used to ensure that this level of safety is maintained.

Vehicle preparation

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Route planning

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Driver strategy

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[10]





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Question Number	Marks
1-7	
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<b>Total Marks</b>	
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Examiner Number

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