



General Certificate of Secondary Education
2017

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

MONDAY 15 MAY, 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 **26, 27** and **28**.



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Answer **all** questions.

1 Explain briefly what is meant by a detour.

_____ [1]

2 Explain briefly why you must not remove the helmet from a motorcyclist who has been involved in an accident.

_____ [1]

3 Whom should you inform if there is a change in your medical condition or vision, which may make you unfit to drive?

_____ [1]

4 Give **two** reasons why turning right from a side road onto a busy dual carriageway is always dangerous.

1. _____ [1]

2. _____ [1]

5 Name **two** actions a driver can take, while driving, to reduce excessive wear on the vehicle's tyres.

1. _____ [1]

2. _____ [1]

[Turn over



6 (a) State the rule for using box junctions.

[1]

(b) Examine Fig. 6.1 below carefully.



Source: Chief examiner

Fig. 6.1

What is the purpose of this box junction?

[1]



(c) Examine Fig. 6.2 below carefully.



Source: Chief examiner

Fig. 6.2

Suggest **one** reason why “keep clear” is used instead of a box junction.

[1]

[Turn over



(d) Examine Fig. 6.3 below carefully.



Source: Chief examiner

Fig. 6.3

Name **three** hazards for pedestrians or vehicles.

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



7 (a) Name **two** ways in which you can prepare yourself to drive on a long journey.

1. _____ [1]

2. _____ [1]

(b) Name **two** ways in which you can ensure a vehicle is fit for the road.

1. _____ [1]

2. _____ [1]

(c) List **two** ways in which you could avoid fatigue during a long journey.

1. _____ [1]

2. _____ [1]

8 (a) State **two** factors which would make a car expensive to insure.

1. _____ [1]

2. _____ [1]

(b) Give **two** reasons why a driver might be considered a higher insurance risk.

1. _____ [1]

2. _____ [1]

(c) Explain briefly what is meant by the term “no claims bonus”.

_____ [1]

[Turn over



9 (a) List **three** checks that can be carried out on the tyres of a vehicle.

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



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Fig. 9.1

Fig. 9.1 shows a tyre tread pattern.

(b) Name the parts marked A.

_____ [1]



10 (a) Write down **one** reason why the vehicle test certificate (MOT) was introduced.

_____ [1]

(b) After how many years, since new, does a car require an MOT in:

1. Northern Ireland? _____ Yrs [1]

2. England? _____ Yrs [1]

(c) If a car requires and does not have a valid MOT certificate, write down two occasions when it may be driven on the road.

1. _____ [1]

2. _____ [1]

11 (a) Name the **two** documents which the police can require a driver to produce.

1. _____ [1]

2. _____ [1]

(b) If the driver in part (a) is a learner driver, the police can ask for a third document. What is it?

_____ [2]



12 (a) Name **two** actions which pedestrians can take to ensure their safety while walking on a country road with no footpath.

1. _____ [1]

2. _____ [1]

(b) Name **two** safe places where a pedestrian can cross a busy urban road.

1. _____ [1]

2. _____ [1]





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13 (a) Give the meaning of each of the road signs shown in Fig. 13.1–13.6 below.

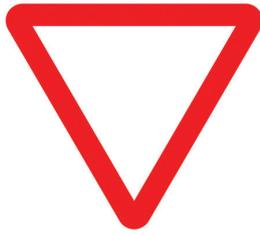


Fig. 13.1



Fig. 13.2

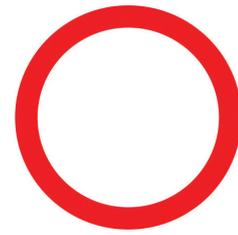


Fig. 13.3



Fig. 13.4



Fig. 13.5



Fig. 13.6

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Fig. 13.1 _____ [1]

Fig. 13.2 _____ [1]

Fig. 13.3 _____ [1]

Fig. 13.4 _____ [1]

Fig. 13.5 _____ [1]

Fig. 13.6 _____ [1]



(b) Examine **Fig. 13.7** below carefully.



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Fig. 13.7

How far is this motorway countdown marker in **Fig. 13.7** from the exit?

_____ [1]

(c) Examine **Fig. 13.8** below carefully.



Source: Chief examiner

Fig. 13.8

What hazard does the warning sign in **Fig. 13.8** above indicate?

_____ [1]



14 Examine the photograph in **Fig. 14.1** below.



Source: Chief examiner

Fig. 14.1

(a) Outline **two** separate reasons why the position of the parked car in **Fig. 14.1** above creates a danger for other road users.

1. Danger: _____ [1]

Reason: _____ [1]

2. Danger: _____ [1]

Reason: _____ [1]



(b) Study the photograph in Fig. 14.2 below.



Source: Chief examiner

Fig. 14.2

State **four** reasons why the location of the bus stop in Fig. 14.2 creates dangers for road users.

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

[Turn over



15 (a) In which country would you find an autostrada?

_____ [1]

(b) Name the first European country to develop motorways.

_____ [1]

(c) Give **two** reasons for the reduction of vehicle pollution in recent years.

1. _____ [1]

2. _____ [1]

(d) Explain briefly what the Locomotive Act 1865 (Red Flag Act) required of the motorist.

_____ [1]

16 (a) Name **two** effects which the building of a new road could have on communities and the environment.

1. _____ [1]

2. _____ [1]

(b) State **two** ways in which road planners and builders can minimise the destruction and disruption to the environment when building a new road.

1. _____ [1]

2. _____ [1]



17 (a) How much petrol and oil would be required to fill a 5 litre moped fuel tank if it is marked 24:1?

Petrol _____ litres [1]

Oil _____ litres [1]

(b) Complete the following list of drink/drive limits.

1. _____ micrograms of alcohol per 100 millilitres of breath. [1]

2. _____ milligrams of alcohol per 100 millilitres of blood. [1]

3. _____ milligrams of alcohol per 100 millilitres of urine. [1]



18 The table shows a quick reference price guide to Vauxhall Rental.

Vauxhall Corsa		Vauxhall Astra	
1 day	£25	1 day	£30
2 days	£50	2 days	£60
3 days (w'end special)	£60	3 days (w'end special)	£75
4+ days	£20/day	4+ days	£25/day
7+ days	£17.50/day	7+ days	£20/day
>14 days	£15/day	>14 days	£17.50/day

(a) How much cheaper is it to hire a Vauxhall Astra for three days at the weekend than three days midweek?

_____ [2]

(b) What is the difference between hiring a Vauxhall Corsa for six days and hiring it for seven days?

_____ [2]



(c) A customer is offered two ways of owning a new small car.

A. Deposit of £532 and 36 monthly payments of £275.

or

B. No deposit, 36 monthly payments of £180 and a final payment of £5,000.

Find the difference between **A** and **B**.

£ _____ [2]

(d) What is the meaning of each of the following abbreviations?

1. APR _____ [1]

2. ONO _____ [1]

3. HP _____ [1]

[Turn over



- 19 Look at the graph in Fig. 19.1 below. It shows a return journey by car from Belfast to Dublin.

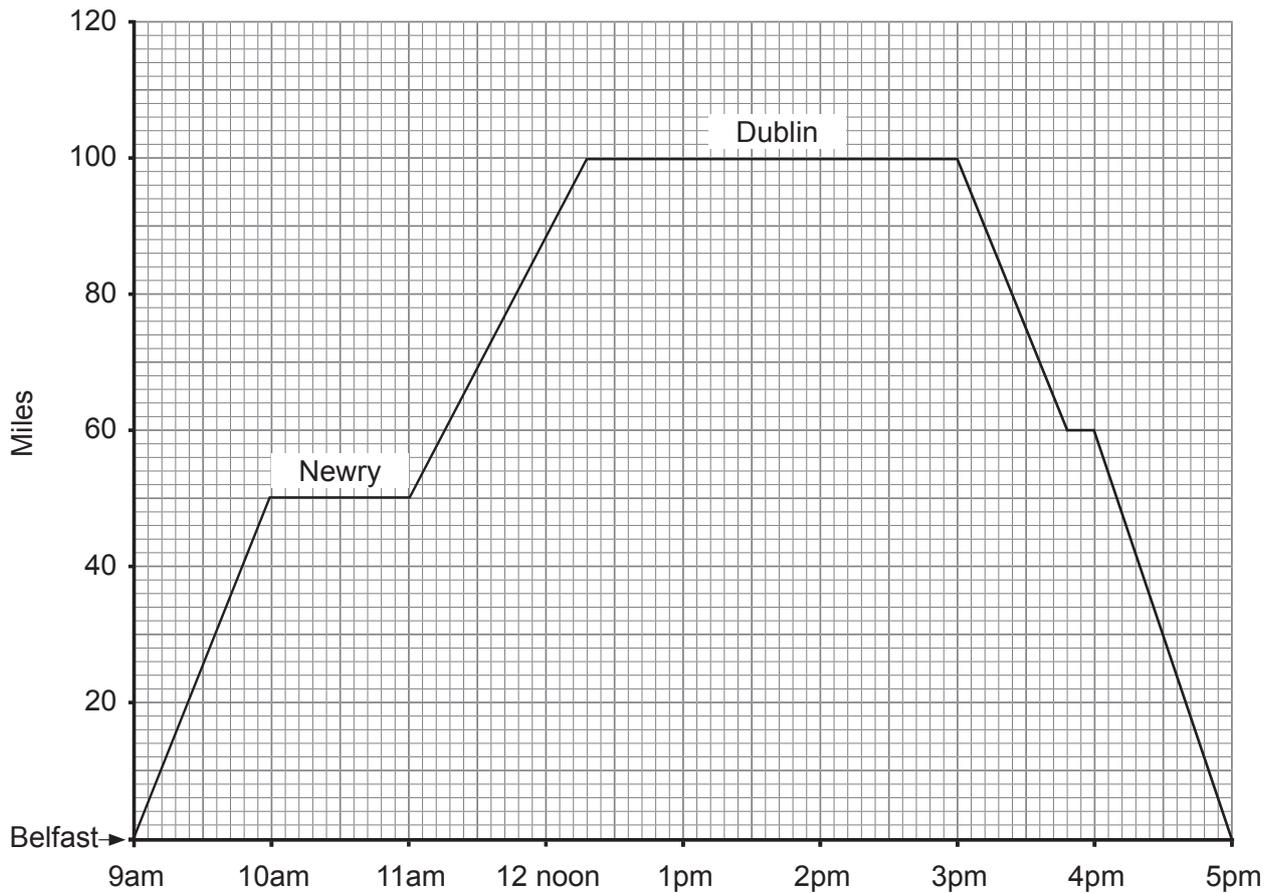


Fig. 19.1

- (a) What was the total time for which the vehicle was stopped?

_____ [1]

- (b) How long did the journey from Newry to Dublin take?

_____ [1]



(c) Petrol costs £3.50/gallon and the car's consumption was 50 miles/gallon.

What was the cost of fuel for the total return journey?

_____ [2]

20 (a) Name the **three** legal obligations if you are involved in an accident which causes personal injury.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(b) Describe briefly how you would treat an unconscious casualty.

_____ [1]

(c) When would you give mouth-to-mouth resuscitation (CPR)?

_____ [1]

(d) If you arrive at the scene of an accident, list the **four** priorities that should be carried out **in the correct order**.

1. _____ [1]

2. _____ [1]

3. _____ [1]

4. _____ [1]

[Turn over



21 (a) Name **two** ways in which cyclists can protect themselves on the road.

1. _____ [1]

2. _____ [1]

(b) Name **four** benefits of cycle lanes in a city.

1. _____ [1]

2. _____ [1]

3. _____ [1]

4. _____ [1]

(c) Name **three** actions you must not take while cycling on public roads.

1. _____ [1]

2. _____ [1]

3. _____ [1]





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22 (a) Match the components **A** to **D** below to their systems 1–4.

Components

- A** inlet manifold
- B** clutch
- C** master cylinder
- D** solenoid

Systems

- 1. braking _____ [1]
- 2. transmisson _____ [1]
- 3. starting _____ [1]
- 4. fuel _____ [1]

(b) Name the **two** strokes of the four-stroke engine where the piston is at the bottom of the cylinder.

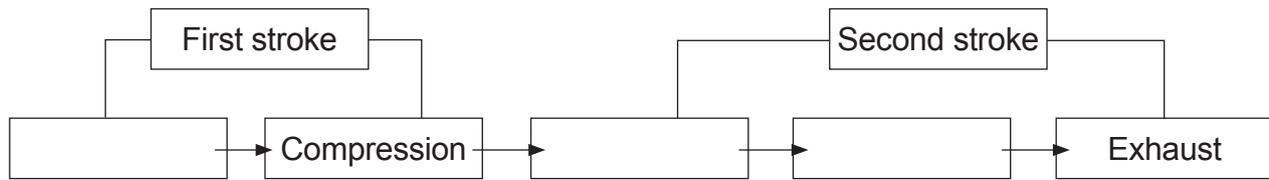
- 1. _____ [1]
- 2. _____ [1]

(c) Name the **three** ports found in a two-stroke engine.

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



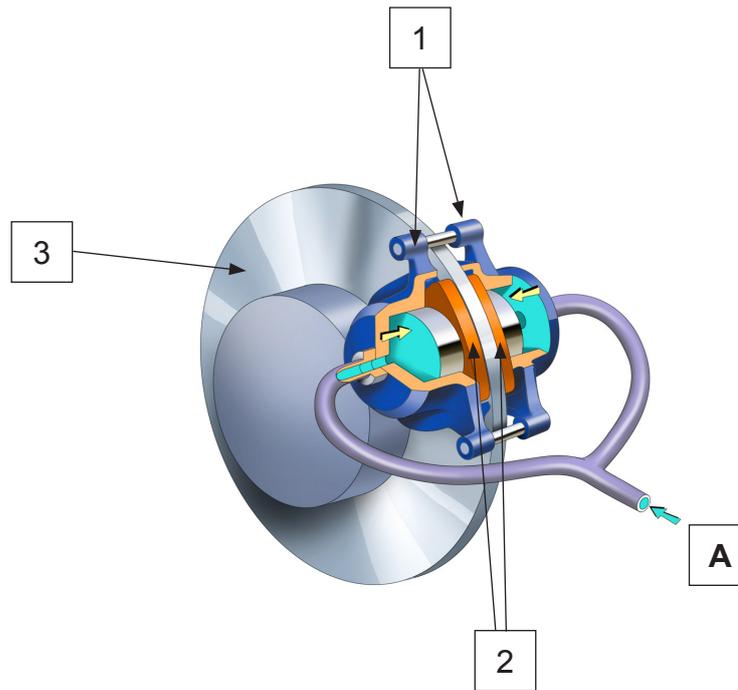
(d) Complete the block diagram to show the two-stroke cycle.



[3]



23



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Fig. 23.1

(a) Name the type of brakes shown in **Fig. 23.1**.

_____ [1]

(b) Name the parts numbered 1–3 in **Fig. 23.1** above.

1. _____ [1]

2. _____ [1]

3. _____ [1]

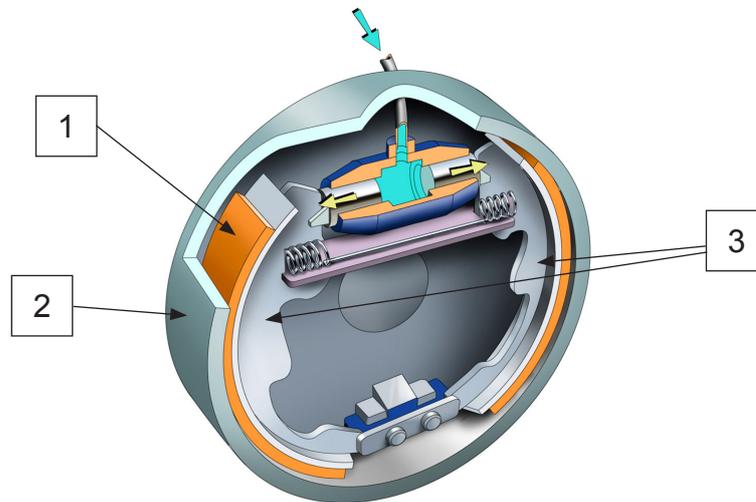
(c) Name the liquid which fills the tube marked **A** in **Fig. 23.1**.

_____ [1]



(d) Explain briefly why this fluid has to be changed every two years.

[1]



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Fig. 23.2

(e) Name the type of brakes shown in Fig. 23.2.

[1]

(f) Name the parts numbered 1–3 in Fig. 23.2 above.

1. _____ [1]

2. _____ [1]

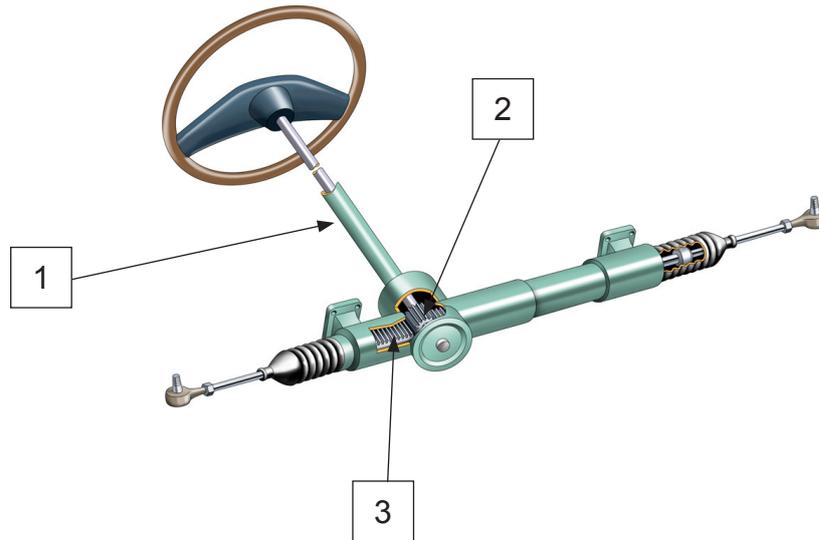
3. _____ [1]

(g) What is the main function of a handbrake in a motor vehicle?

[2]

[Turn over





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Fig. 24.1

(a) Name the parts numbered 1–3 in Fig. 24.1 above.

1. _____ [1]

2. _____ [1]

3. _____ [1]

(b) What does the abbreviation PAS mean?

_____ [1]

(c) Give the **two** advantages of power steering.

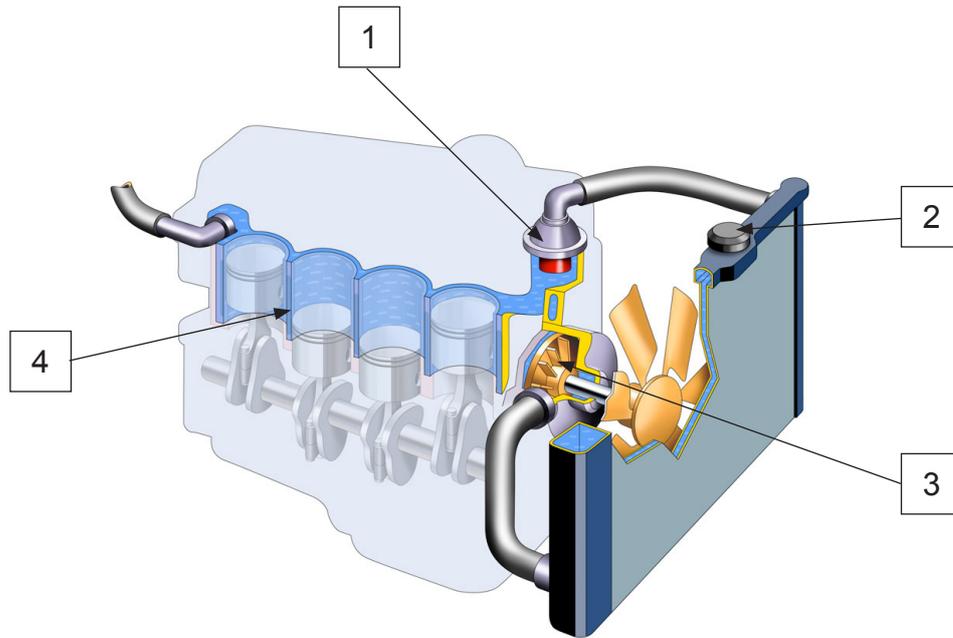
1. _____

_____ [1]

2. _____

_____ [1]





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Fig. 24.2

(d) Name the cooling system parts numbered 1–4 in Fig. 24.2 above.

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

(e) Explain briefly why it is important for an engine to be cooled.

_____ [1]

(f) Name **one** other way in which engines can be cooled.

_____ [1]

[Turn over



25 Name three secondary safety features and explain how each has contributed to greater protection for vehicle drivers and passengers in the event of an accident.

Feature: _____ [1]

Explanation: _____
_____ [1]

Feature: _____ [1]

Explanation: _____
_____ [1]

Feature: _____ [1]

Explanation: _____
_____ [1]



27 Outline potential hazards for drivers in residential areas, explaining the precautions they should take.

Explain how the development of traffic engineering methods has helped reduce accidents.

Hazards _____

Precautions _____

Traffic Engineering _____

[12]



28 "Driving in poor weather conditions requires some basic precautions to be taken in terms of stopping, seeing and being seen." Discuss this statement.

Stopping _____

Seeing _____

Being seen _____

[12]



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- Fig. 13.1: ... Highway Code Booklet
- Fig. 13.2: ... Highway Code Booklet
- Fig. 13.3: ... Highway Code Booklet
- Fig. 13.4: ... Highway Code Booklet
- Fig. 13.5: ... Highway Code Booklet
- Fig. 13.6: ... Highway Code Booklet
- Fig. 13.7: ... Highway Code Booklet

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