



Rewarding Learning

**General Certificate of Secondary Education
2013**

Motor Vehicle and Road User Studies

Unit 1: Motor Vehicle and Road User Theory

Higher Tier

[GMV12]

THURSDAY 16 MAY, MORNING

**MARK
SCHEME**

General Marking Instructions

Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

| | | | AVAILABLE MARKS |
|---|--|-----|--------------------|
| 1 | 70 mph. | [1] | 1 |
| 2 | To channel water away/to provide grip. | [1] | 1 |
| 3 | (a) (i) breath 35 micrograms per 100 ml. | [1] | |
| | (ii) blood 80 milligrams per 100 ml. | [1] | |
| | (b) Any two from: slows reactions, impairs vision, alters judgment etc. | [2] | 4 |
| 4 | white/green. | [2] | 2 |
| 5 | (a) Hump Bridge. | [1] | |
| | (b) Lose control etc. | [2] | 3 |
| 6 | (a) To protect others/property. | [1] | |
| | (b) Any three from: cocky, take risks/dare, show off, more accident prone, drive fast etc. | [3] | |
| | (c) higher claims rate/higher crime rate; higher accident rate or lower etc. | [3] | 7 |
| 7 | ABS: antilock braking system. | [1] | |
| | SORN: statutory off road notification. | [1] | |
| | PCV: passenger carrying vehicle. | [1] | 3 |
| 8 | Any two from: Cannot see road ahead, sign, bend in the road etc. | [2] | 2 |
| 9 | (a) Any three from: safety cage, anti-burst locks, air bags, seatbelts, pretensioners, safety glass, side impact bar etc. | [3] | |
| | (b) Any two from: catalytic convertor, unleaded fuel, working exhaust, tax on emissions etc. | [2] | |
| | (c) gating, chicane, speed cushions etc. | [1] | 6 |

| | | | AVAILABLE MARKS |
|---------------|--|-----|-----------------|
| 10 (a) | 1. Protect the scene. | [1] | 5 |
| | 2. Summon emergency vehicles. | [1] | |
| | 3. Make vehicles safe. | [1] | |
| (b) | 1. Switch off ignition. | [1] | |
| | 2. Put on handbrake. | [1] | |
| 11 (a) | Electric motor/battery. | [1] | |
| (b) | Fuel is compressed to $\frac{1}{12}$ of its volume (or similar). | [1] | 7 |
| (c) | Any three from: to ensure all items such as tyres, lights, etc are legal. to reduce costs, e.g. fuel consumption. to ensure vehicle has optimum value etc. | [3] | |
| (d) | Any two from: oil, water, tyres etc. | [2] | |
| 12 | Fig. 12.1 – No through road. | [1] | |
| | Fig. 12.2 – Light signals ahead (at level crossing). | [1] | |
| | Fig. 12.3 – Slippery road. | [1] | |
| | Fig. 12.4 – No overtaking. | [1] | |
| | Fig. 12.5 – No vehicles. | [1] | |
| | Fig. 12.6 – Ahead only. | [1] | 6 |
| 13 (a) | Gives safe separation distance at any speed. | [1] | 2 |
| (b) | In bad weather, rain, snow, fog, ice. | [1] | |
| 14 (a) | Where driver cannot see adjacent to the vehicle, or similar. | [1] | 4 |
| (b) | Facing oncoming traffic, or on the right. | [1] | |
| (c) | Muck, dirt, animals, debris, soft verges etc. | [2] | |

| | | | AVAILABLE MARKS |
|---------------|--|-----|--------------------|
| 15 (a) | 1. Piston. | [1] | 9 |
| | 2. Connecting/con rod. | [1] | |
| | 3. Crankshaft. | [1] | |
| (b) | Up/down movement changed to circular motion by the crankshaft. | [2] | |
| (c) | 1. Flywheel. | [1] | |
| | 2. Friction plate. | [1] | |
| (d) | To engage and disengage the drive. | [1] | |
| (e) | A. | [1] | |
| 16 (a) | Any two from: plan route/rest stops, book accommodation. | [2] | |
| (b) | Any two from: check tyres, water, oil, have car serviced, clean vehicle. | [2] | |
| (c) | Any one from: more bends/junctions, hills, hazards etc. | [1] | |
| 17 (a) | A Flywheel. | [1] | 10 |
| | B Spark plug. | [1] | |
| | C Crankshaft. | [1] | |
| | D Connecting rod. | [1] | |
| | E Gudgeon pin. | [1] | |
| | F Piston. | [1] | |
| (b) | Four cylinder. | [1] | |
| (c) | They are bolted together. | [1] | |
| (d) | They provide a gas tight seal. | [1] | |
| (e) | Big end bearing. | [1] | |

| | | | AVAILABLE MARKS |
|-----------|---|-----|-----------------|
| 18 | $\text{£}190 \div 12 = \text{£}15.83$ | [1] | |
| | $\text{£}648 \div 12 = \text{£}54.00$ | [1] | |
| | $\text{£}360 \div 12 = \text{£}30.00$ | [1] | |
| | $\text{£}20.00 \quad \text{£}20.00$ | [1] | |
| | $18,000 \div 36 = 500\text{gals}$ | [1] | |
| | $= 2275 \text{ ltrs}$ | [1] | |
| | $2275 \times 135 = 3071.25$ | [1] | |
| | $3071.25 \div 12 = \text{£}255.9375$ | [1] | |
| | Total = 375.7675 i.e. 375.77 | [1] | 9 |
| 19 | (a) Cat's eye. | [1] | |
| | (b) Reflective. | [1] | |
| | (c) Shows centre of road at night/bad visibility etc. | [1] | 3 |
| 20 | (a) Any three from: give way to traffic already on the motorway, match your speed to the traffic on the motorway, stay on slip road until it is safe to join the carriageway, remain in left hand lane long enough to adjust speed. | [3] | |
| | (b) Any three from: pull onto hard shoulder, try to stop near an emergency telephone, leave vehicle by passenger door, keep yourself and passengers away from the carriageway, go to nearest phone, return to vehicle and wait for assistance, face oncoming traffic at all times etc. | [3] | |
| | (c) Bus, towing a trailer, large goods vehicle. | [2] | |
| | (d) Any two from: reverse, cross central reservation, drive against the flow of traffic, exceed 70 mph etc. | [2] | 10 |
| 21 | (a) Cannot see outside direct line of vision, may not see action at the sides of vision. | [2] | |
| | (b) Clear windscreen, clear rear window, have no obstructions on dashboard/rear shelf etc. | [3] | 5 |

| | | AVAILABLE MARKS |
|---------------|--|-----------------|
| 22 (a) | Any two from: three persons required to drive, one of these to walk (60 yds) in front, speed limit of 4mph etc. [2] | |
| (b) | Any three from: effects of traffic noise, effects on agriculture, effect on community severance, air pollution, visual impact, effects on wildlife, disruption during construction etc. [3] | 5 |
| 23 (a) | $\text{£}15,300 \div 36 = \text{£}425$ [1] | |
| (b) | $\text{£}15,300$ $20\% = \text{£}3,060$ $15,300 - 3,060 = \text{£}12,240$ $\text{£}12,240 \div 36 = \text{£}340$ [2] | |
| (c) | $\text{£}12,000 \times 8 \div 100 = \text{£}960$ $\text{£}960 \times 3 = \text{£}2,880 + 12,000 = \text{£}14,880$ $\text{£}15,300 - \text{£}12,000 = \text{£}3,300$ $\text{£}3,300 + \text{£}14,880 = \text{£}18,180$ [4] | |
| (d) | $15 \times 55 = 825$ miles [1] | 8 |
| 24 (a) | 1. Cooling fan. [1] | |
| | 2. Radiator. [1] | |
| | 3. Radiator cap [1] | |
| | 4. Thermostat. [1] | |
| | 5. Water jacket. [1] | |
| | 6. Bottom hose. [1] | |
| (b) | Water can freeze, leaks can occur, loose fan belt can cause overheating. [2] | |
| (c) | Air cooling. [1] | |
| (d) | Motorcycles. [1] | 10 |
| 25 (a) | When unconscious but breathing. [2] | |
| (b) | Tilt chin downward and head back, turn person onto side, lift chin forward, place hand underneath cheek to prevent rolling. [3] | 5 |

| | | AVAILABLE MARKS |
|---|--|-----------------|
| 26 (a) | Any three from: cost, make of vehicle, reg. no. of vehicle, date issued, expiry date, fuel used. | [3] |
| (b) | Take form to local vehicle licensing office or post office. Provide insurance cert., MOT if required, appropriate fee. | [4] |
| (c) | Make, colour, model, date of registration, chassis no., taxation class, previous owners, fuel. | [5] |
| | | 12 |
| 27 | Candidates refer to: Observation: windows clean and clear; lights clean and working; mirrors adjusted; eyesight OK; observe all road signs; speed limits etc; pay attention at junctions; watch for other road users including pedestrians. Courtesy: consideration for other road users – give way appropriately; show appropriate consideration for others including pedestrians, elderly, horse riders etc; correct use of horn and headlights; reduce radio/CD volume; avoid aggressive driving etc. Anticipation: predicting what may happen; expect the unexpected; reading/observing the road ahead – doors opening; bouncing balls, animals etc. Relevant examples required in all three categories. | [12] |
| | | 12 |
| 28 | Candidates may mention: adverse weather, road design/layout, deposits on road (mud, oil etc), surface conditions (not weather), masked signage, road furniture, defective traffic lights, faded markings etc. Candidates may suggest precautions related to factors mentioned. | [12] |
| | | 12 |
| 29 | Roundabout problems Motorists in wrong lane on approach, motorists not signalling entering or exiting, long vehicles cutting off space, motorbikes hard to see, speed, motorists already on the roundabout changing lanes, motorists giving the wrong signal, rush hour, vehicles bumper to bumper, slow moving vehicles, cyclists. Correct procedures Slow down on approach, get into correct lane as early as possible, signal your intent, give way to vehicles from right, signal to exit roundabout again, mirror, signal, manoeuvre, check blind spot, lifesavers, patience, caution. | |
| [0] a zero mark will be awarded if the response is not worthy of credit. | | |

Level 1 ([1]–[4])

The candidate may focus only on one or two of the required references and give limited or irrelevant detail. Specialist vocabulary will be limited or inappropriately used. The answer may lack clarity and/or cohesion and may also contain significant grammatical, punctuation or spelling errors.

Level 2 ([5]–[8])

The candidate addresses at least two of the required references in some relevant detail. Specialist vocabulary is correctly used. The style of writing is appropriate and the meaning is clear although there may be some errors in spelling, punctuation or grammar.

Level 3 ([9]–[12])

The candidate addresses all of the required references in line with the detail set out above. Specialist vocabulary is used correctly. The answer is well structured and relevant material is presented with a high degree of clarity and coherence. Spelling, punctuation and grammar will generally be correct. [12]

TotalAVAILABLE
MARKS

12

180