

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE

ASSESSMENT AND QUALIFICATIONS ALLIANCE
and
THE DRIVING INSTRUCTORS ASSOCIATION
June 2004



DIPLOMA IN DRIVING INSTRUCTION
Module III: Vehicle Maintenance and
Mechanical Principles

0963/1

Wednesday 19 May 2004 9.00 am to 11.00 am

In addition to this paper you will require:

- a 12-page answer book;
- a pen, pencil and rubber;
- a ruler.

Time allowed: 2 hours

Instructions

- Answer **all** questions in the answer book provided.
- Do all rough work in the answer book. Cross through any work you do not want marked.

Information

- The maximum mark for this paper is 100.
- Mark allocations are shown in brackets.

Answer **all** questions.

1 The main type of steering system on a modern car is the **rack and pinion** mechanism.

- (a) Why are most modern cars fitted with rack and pinion steering? (2 marks)
- (b) Explain the components and principles of the rack and pinion mechanism. (5 marks)
- (c) How could a driver notice any deterioration in the steering system that can occur through use? (3 marks)
- (d) What are the advantages and disadvantages of using power steering on a driving school vehicle? (5 marks)
- (e) What additional advice should be given to clients before they drive their own cars which are **not** fitted with power steering? (2 marks)
- (f) What maintenance check should you make to the power steering system? (1 mark)
- (g) What could be the cause of a vibration in steering at specific speeds? (2 marks)

2 State **two** important consequences of damage or excessive wear to each of the following:

- (a) disc pads; (2 marks)
- (b) alternator belt; (2 marks)
- (c) clutch friction plate; (2 marks)
- (d) wheel bearings; (2 marks)
- (e) wiper blades. (2 marks)

3 Safety features are an important consideration when choosing a vehicle.

Give **ten** examples of these safety features and explain how they reduce injuries to occupants and other road users. (20 marks)

4 The engine serves different purposes.

- (a) List **three** purposes of the engine. (3 marks)
- (b) Identify sub-systems in the engine. (6 marks)
- (c) Describe with the aid of diagrams the four stroke cycle. (6 marks)

5 The MOT Test covers certain components in a vehicle.

- (a) What lighting requirements are tested? (5 marks)
- (b) List **five** other vehicle components which are tested. (5 marks)

6 A newly qualified driver, who possesses little mechanical knowledge, is preparing for a long winter journey.

What advice or recommendations would you give to the driver regarding preparation and additional equipment. (15 marks)

7 Electrical power is required to start the vehicle.

- (a) What **two** functions does the alternator have? (2 marks)
- (b) What is the function of a battery? (1 mark)
- (c) What **two** purposes do fuses have? (2 marks)
- (d) What does the fan belt operate? (1 mark)
- (e) What maintenance is required to the electrical system? (4 marks)

END OF QUESTIONS