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University Examinations 2023/2024

FIRST YEAR SECOND TRIMESTER EXAMINATION FOR THE DIPLOMA IN AUTOMOTIVE

ENG/CU/AUT/CR/1/6: PERFORM VEHICLE BASIC MAINTAINANCE

DATE: APRIL 2024

TIME: 3 HOURS

INSTRUCTIONS

1. This paper has two sections A and B
2. Attempt questions in each section as per the instructions given in the section.
3. You are provided with a separate answer booklet.
4. Answer all the questions in the answer booklet.
5. Marks for each question are indicated in the brackets.
6. Do not write on the question paper.

SECTION A: (40 Marks)

Answer **all** questions in this section

1. Name FOUR types of spanners used in an automotive garage. (4 Marks)
2. List FOUR safety precautions to be observed when changing truck engine oil in the service bay inspection pit. (4 Marks)
3. list FOUR types of lubricants used in a motor vehicle and give an example of where each is used. (4 Marks)
4. Sketch any four vehicle dashboard warning symbols, and state the color code of each and its meaning. (4 Marks)
5. List one major symptom for each of the following vehicle defects. (3 Marks)
(a) Worn brake pads

- (b) Failed alternator for an electric power steering vehicle
 - (c) Low ATF an auto transmission vehicle
6. Name three types of vehicle exhaust emissions and the possible defect associated with each. (3 Marks)
 7. Name two types of engine oils and state two advantages of each (3 Marks)
 8. Briefly describe any three types of vehicle drive layouts. (6 Marks)
 9. Outline three maintenance procedures done on the lead acid battery. (3 Marks)
 10. List six major elements of a service schedule job card (3 Marks)
 11. Name three types of tire wear patterns and indicate the cause of each. (3 Marks)

SECTION B: (60 MARKS)

Answer any three questions.

- 12 a) Using a neat diagram describe the working principle of the simple carburetor. (10 Marks)
 - b) Describe the procedure for draining and refilling engine oil for a diesel engine. (10 Marks)
- 13 a) With the aid of a neat sketch, explain the operation of a thermosiphon cooling system (12 Marks)
 - b) Describe the procedure for testing engine oil pressure. (8 Marks)
- 14 a) You are working in a routine service bay in a busy automotive workshop. Describe the greasing procedures for a seven-ton truck. (12 Marks)
 - b) Describe the procedure for servicing engine spark plugs. (8 Marks)
- 15 Describe appropriate tests for diagnosing failure of the following parts without removing the part from the vehicle.
 - a) Distributor (5 Marks)
 - b) Alternator (5 Marks)
 - c) Fuel pump for EFI petrol engine (5 Marks)
 - d) Water pump (5 Marks)