NESA NATIONAL EXAMINATION AND SCHOOL INSPECTION AUTHORITY

AES – Automotive Electrical Starting and Charging System

T160

Wednesday, 21/7/2021

08:30 – 11:30 AM

Names:.....

Index number:.....

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

QUESTIONS and ANSWERS BOOKLET

OPTION/TRADE: **AUTOMOBILE ELECTRICITY AND ELECTRONICS SYSTEMS**

SUBJECT: **Automotive Electrical Starting and Charging System**

ACADEMIC YEAR: **2020-2021**

Read carefully the instructions on page (i) & (ii).

FOR EXAMINER'S USE ONLY

QUESTIONS	1	2	3	4	5	6	7	8	9	10	Total
Marks											
QUESTIONS	11	12	13	14	15	16	17	18	19	20	Total
Marks											
QUESTIONS	21	22	23	24	25	26	27	28	29	30	Total
Marks											

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

INSTRUCTIONS TO CANDIDATES: PART I (Answer Booklet)

1. A candidate should fill in the actual names and the index number on the cover of this questions and answer booklet on the provided place (Black Box).

2. It is illegal for a candidate to write any of his/her names, index number or a school name inside the answer booklet.

3. A candidate should check if all pages of the answer booklet are complete. No candidate should remove or tear any pages or part of it from the answer booklet.

4. A candidate should answer in the language in which the examination is set. (See page ***(ii)***)

5. A candidate should sign on the sitting plan when submitting the answer booklet. He/she has also to check if the answer booklet is well sealed.

6. No extra paper is allowed in the examinations room. If a candidate is caught with it his/her results will be nullified.

7. No candidate is allowed to write answers not related to the subject being sat for, otherwise it will be considered as a cheating case.

8. Write your answers on the 12 lined pages (From page 1 of 12 to page 12 of 12).

9. Use the last non-lined pages as draft.

10. Results for any candidate who is caught in examination malpractices are nullified. The cheating can be recognized during examinations administration, marking exercise or even thereafter.

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

OPTION/TRADE: AUTOMOBILE ELECTRICITY AND ELECTRONICS SYSTEMS

SUBJECT: Automotive Electrical Starting and Charging System

DURATION: 3 hours

INSTRUCTIONS TO CANDIDATES: PART II (Question paper)

The paper is composed of two (2) Sections as follows:

Section I: Attempt all the Twelve (12) questions **(60 marks)**

Section II: Attempt any Four (4) questions out of Six (6) **(40 marks)**

Allowed materials:

- Ruler or square
- Calculator

Note:

Every candidate is required to carefully comply with the provided assessment instructions.

Section I : Attempt all the Twelve (12) questions (60 marks)

01. Describe the main purpose of motor vehicle charging system.

(5 marks)

02. Clarify the difference between a DC generator and an AC generator. **(5 marks)**

03. With a help of sketch, show the flow of current through the rotor of an AC generator. **(5 marks)**

04. Describe the main difference between the two (2) types of stator winding connections. **(5 marks)**

05. Differentiate the **A** Field-circuit from **B** Field-circuit.

(5 marks)

06. State any five (5) causes of Alternator noise. **(5 marks)**

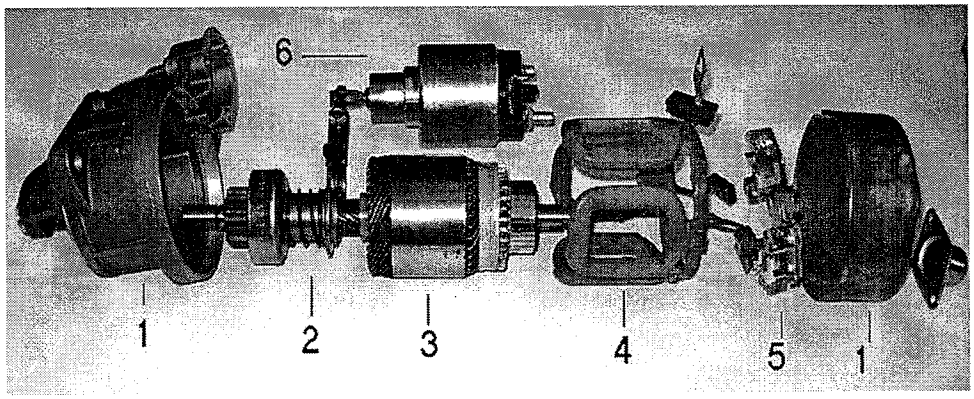
07. Enumerate any five (5) parts to inspect with the charging system. **(5 marks)**

08. (a) What is the purpose of starting system?

(b) Define a starter motor. **(5 marks)**

09. Give the classification of D.C motor according to the type of excitation. **(5 marks)**

10. Name the parts of the sketch below: **(5 marks)**



11. Enumerate five (5) steps of removing a starter motor on the vehicle. **(5 marks)**

12. Give the procedures should be followed while performing starter bench Testing. **(5 marks)**

Section II: Attempt any Four (4) questions out of Six (6)

(40 marks)

13. Enumerate any five (5) causes and their remedies of the charging system which is not charging. **(10 marks)**

14. During disassembling of an alternator there are procedures that must be followed, state those procedures. **(10 marks)**

15. Identify any (10) recommendations should be followed by using the jumper between two cars. **(10 marks)**

16. Enumerate any five (5) main components of starting system and their functions. **(10 marks)**

17. List and explain five (5) components of starter motor.

(10 marks)

18. Describe the procedures to follow while disassembling a conventional starter motor. **(10 marks)**

Do not write anything on this page !

NESA2021