

071305T4RAC

REFRIGERATION AND AIR CONDITIONING LEVEL 5

ENG/OS/RAC/CC/01/5/B

PERFORM WORKSHOP PRACTICE

July/August 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL**

(TVET CDACC)

WRITTEN ASSESSMENT

3 HOURS

INSTRUCTIONS TO CANDIDATE

1. This paper consists of two sections; A and B
2. Answer **ALL** the question as guided in each section
3. Marks for each question are as indicated in the brackets
4. You are provided with a separate answer booklet to answer the questions
5. Do not write in this question paper

This paper consists of THREE (3) printed pages

Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A: (40 MARKS)

Answer ALL the questions in this section.

1. To prevent accidents, injury and damage to tools and equipment, you observe safe practices in your workplace at all times. State FOUR general health and safety precautions to observe in a workshop. (4 Marks)
2. Different engineering materials are used for different applications in the workshop. Name FOUR types of engineering materials used in a workshop for fabrication and production of products (4 Marks)
3. Clamping devices are important for holding work on a machine or bench when carrying out an operation. Identify FOUR clamping devices used for holding work in a refrigeration and air conditioning workshop. (4 Marks)
4. Workshop materials are supplied in different forms depending on their applications. List FOUR material forms used in a refrigeration and air conditioning workshop. (4 Marks)
5. When swaging a pipe to be joined to another pipe of the same diameter it's important to follow the right procedure. State FOUR steps followed by technicians when swaging a copper tube in installation of air conditioning units. (4 Marks)
6. Soft soldering can only be used on metals that are lapped one over another to form a joint. State FOUR types of joints used in soft soldering. (4 Marks)
7. Marked out templates are made of thin sheet metal. Name FOUR basic marking out tools used in a refrigeration and air conditioning workshop. (4Marks)
8. Stakes are very important when performing hand operations such bending and planishing. Identify FOUR types of stakes used for these operations. (4 Marks)
9. Files are used to perform a variety of tasks from simple removal of sharp edges to producing intricate shapes. Name FOUR types of files used in a workshop. (4 Marks)
10. In a refrigeration and air conditioning workshop, work instructions may be obtained from a variety of sources. State FOUR sources from which a refrigeration and air conditioning technician can obtain work instructions. (4 Marks)

SECTION B: (60 MARKS)

Answer any THREE questions from this section.

11. Workshop accidents are unforeseen occurrence or situation resulting in breakage of tool and equipment or personal injuries.
- a) Describe FIVE types of accidents that usually occur in a refrigeration and air conditioning workshop (10 Marks)
 - b) Explain FIVE classes of fire the occur in a refrigeration and air conditioning workshop (10 Marks)
12. Brazing is used extensively to join pipes and fittings in refrigeration and air conditioning installation, servicing, repair and maintenance.
- a) Describe THREE types of brazing flames that can be applied when brazing pipes in refrigeration and air conditioning (6 Marks)
 - b) Explain FIVE merits of brazing in refrigeration and air conditioning (10 Marks)
 - c) Describe the difference between welding and brazing processes (4 Marks)
13. Almost every fluid is handled in pipes during its production, processing, transportation and utilization.
- a) Explain FIVE pipe procedures when preparing pipes in refrigeration and air conditioning. (10 Marks)
 - b) Describe FIVE mechanical properties for refrigeration and air conditioning pipes (10 Marks)
14. For tools and equipment or machine to operate well and for a long time, produce good results and prevent accidents, they should be maintained well.
- a) Discuss THREE types of maintenance done to tools, equipment and machine in a refrigeration and air conditioning workshop. (6 Marks)
 - b) Explain TWO merits of maintenance of tools, equipment and machines (4 Marks)
 - c) Describe FIVE first aid procedures to be performed on a person cut and bleeding as result of poor maintained equipment (10Marks)