

073203T4PLM

PLUMBER LEVEL 3

CON/OS/PL/CR/03/3/A

INSTALL STORAGE AND PUMPING SYSTEMS

July/August 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATE:

1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in sections **A** and **B** in the answer booklet provided.
3. Marks for each question are indicated
4. Do not write on the question paper

This paper consists of SIX (6) 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 (20 MARKS)

Answer all questions in this section. Each question carries 1 mark.

Select if the following statements are TRUE or FALSE:

1. Gasket is used to create a seal between two pipes component
A. True
B. False
2. Non-return valve protects pumps and compressor equipment.
A. True
B. False
3. Strainer is important because it can cause a pressure drop.
A. True
B. False
4. Black plastic water tank does not limit algae growth.
A. True
B. False
5. Millimetres are the units of measurements used to show dimensions in a working drawing?
A. True
B. False

Match the following terms to their correct Meaning

NO.	TERM	DEFINITION
6.	Dust pit	i. Involves management of duties e.g., cleaning
7.	Housekeeping	ii. The surface the materials are going to cover.
8.	Working Area	iii. Places where wastes are disposed
9.	Storage cistern	iv. Is a waterproof receptacle for holding liquids, usually water
10.	A cistern	v. It is designed to hold a reserve of water to supply cold water taps and flush cisterns below.

Choose the correct answer from the multiple choices given.

11. A plumbing system is an integral part of any building's infrastructure, responsible for the distribution of water and the removal of waste water. Which one of the following is the main use of a hydraulic bender machine in plumbing?

- A. Bending GI pipes.
 - B. Making thread on pipes
 - C. Fastening and loosening pipes
 - D. Bending PVC pipes.
12. Water distribution in a plumbing system involves the process of delivering potable water from the source to various points of use within a building. Which one of the following is the main use of a water valve in water distribution?
- A. To control the flow of water to different appliances.
 - B. To generate water within the building.
 - C. To store water for future use.
 - D. To seal the joint in the pipe
13. A booster pump is a device used in plumbing systems to increase the water pressure in a building when the existing water pressure is inadequate. Which of the following is an advantage of a booster pump?
- A. It has the highest operating cost.
 - B. It has the highest maintenance cost.
 - C. Its control system is sophisticated and requires a knowledgeable maintenance
 - D. The installation does not impose a large weight on the building structure.
14. Engineering drawings are detailed technical illustrations that represent the design, specifications, and construction of an object or a system. Select a way of representing vent lines in engineering drawings.
- A. Double lines
 - B. Red lines
 - C. Solid lines
 - D. Broken lines
15. Testing equipment is essential in various fields such as engineering, manufacturing, construction, and quality control to ensure that materials, components, and systems meet required standards and specifications. Which of the following is NOT a type of testing equipment that can be used?
- A. Hydraulic test equipment
 - B. Gas test equipment
 - C. Compressed air test equipment
 - D. Wire test equipment

16. Fittings in plumbing are essential components used to connect, redirect, extend, or terminate sections of pipes within a plumbing system. Which of the following fitting is used when changing direction of three pipes?
- A. Tee
 - B. Reducing Tee
 - C. Cross
 - D. Elbow
17. Workshops can be found in diverse settings, from industrial facilities to educational institutions. Which of the following is not a safety measure in the workplace?
- A. Working without helmet
 - B. Wearing safety boots
 - C. Keeping the working area tidy
 - D. Tie long hair behind
18. Valves are mechanical devices used to control the flow of fluids within a system by opening, closing, or partially obstructing passageways. Which one is a one-way valve among the given valves?
- A. Check valve
 - B. Ball valve
 - C. Gate valve
 - D. Butterfly valve
19. Sealant are crucial for preventing leaks, protecting surfaces from moisture damage, and providing insulation. Which one following is not a type of a sealant?
- A. Pipe sealant
 - B. Magnesium sealant
 - C. Tin sealant
 - D. Polyurethane sealant
20. Storage tanks serve a wide range of purposes across industries such as oil and gas, chemical processing, water treatment, agriculture and many more. Which one of the following factors does NOT influence the choice of storage tank?
- A. Cost of the tank
 - B. Strength of tank
 - C. Ease handling and suitability of the tank
 - D. Length of the tank

SECTION B: (30 Marks)

Answer all questions in this section.

21. The measurements of storage tanks can vary widely depending on their intended use, capacity, and the materials they are designed to hold. Convert the following from millimetres to meters.
- i. 400mm. (1 mark)
 - ii. 350mm. (1 mark)
22. The choice of plumbing materials depends on factors such as cost, durability, ease of installation, and compatibility with the specific requirements of the plumbing system. List FIVE materials required for installation of storage water tanks. (5 marks)
23. Storage systems encompass a wide range of solutions designed to store goods, materials, data, energy, or other resources efficiently and securely. Give TWO types of storage systems used in water storage systems. (2 marks)
24. Constructing a water storage system involves several key steps to ensure its functionality, durability, and safety. Name and sketch FIVE tools used in construction and installation of a water storage systems. (5 marks)
25. Storage facilities utilize a variety of fittings to ensure efficient operation, safety, and compliance with regulations. Outline FOUR fittings used in storage tanks installation. (2 marks)
26. Plumbing works involve the installation, repair, and maintenance of plumbing systems, which are essential for the conveyance of water, gas, and waste within buildings and structures. List TWO functionality tests conducted in plumbing works. (2 marks)
27. Faults in plumbing systems can lead to various issues, ranging from minor leaks and clogs to more severe problems like burst pipes and sewage backups. State THREE faults associated with storage and ancillary systems. (3 marks)
28. Pumping and storage systems are commonly used in various industries, municipalities, and residential settings to ensure the reliable supply and management of fluids. Give FOUR factors to consider before commissioning pumping and storage system to a client. (4 marks)
29. Polyvinyl Chloride pipes are widely used in plumbing works due to their numerous advantages. Name TWO grades of Polyvinyl Chloride pipes in plumbing works. (2 marks)

30. Plumbing systems are essential components of buildings and structures that provide the infrastructure for the distribution of water, removal of wastewater and supply of gas. Outline THREE importance of having a storage tank. (3 marks)

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