

091205T4PTT

PERIOPERATIVE THEATER TECHNOLOGY 5

HE/OS/TT/CR/04/5/A

Provide Perioperative Theatre Technical Services

July/Aug 2023



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

WRITTEN ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. This paper has three sections **A**, **B** and **C**.
2. You are provided with a separate answer booklet.
3. Marks for each question are as indicated.
4. Do not write on the question paper.

This paper consists of EIGHT 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.

1. A perioperative theatre technician assists in monitoring a patient who is on general anesthesia. He should be aware that in the anesthetized patient there will be absence of:
 - A. Pain, sensory perception and cognition.
 - B. Respirations, ante grade and long term memory.
 - C. Short term memory loss, all autonomic reflexes and pain
 - D. Muscle contraction, all autonomic reflexes and cognition.
2. What is the acceptable timeframe for gathering additional supplies needed to ensure all the required instruments are complete in the operating room?
 - A. Not more than 1 hour.
 - B. Not more than 30 minutes.
 - C. Not more than 2 hours.
 - D. Not more than 10 minutes.
3. A licensed perioperative theatre technician is supervising a student in setting up the sterile field. Which action by the student indicates a break in sterility?
 - A. Opens the large supplies before the small ones.
 - B. Requests replacement of forceps that falls below the table-top.
 - C. Places the basic pack containing towels, drapes, and gowns on the back table.
 - D. Opens the sterile supplies within 2 hours of the time surgery begins.
4. Draping is performed immediately after the skin prep in order to provide a wide sterile area around the surgical site. Which action by the assistant surgeon indicates a break in sterility during draping?
 - A. Uses non-operating towel clamps to secure drapes and prevent them from falling off the patient.
 - B. Moves around the table to place a drape on the far end while avoiding contact with the prepped surgical site.
 - C. Avoids touching the patient's body while placing a drape.
 - D. Places a drape around the patient's shoulder and moves it towards the chest.

5. Biological controls should be administered at least once weekly in all sterilizers in the 'process challenge monitoring' in order to determine if the conditions inside the sterilizer meet the parameters for sterilization. In a steam sterilizer, the test bacteria should be placed:
 - A. Near the outlet drain of the chamber.
 - B. In the center of the load.
 - C. Over the packaging of a set.
 - D. In the inlet of the chamber.
6. The surgeon is preparing for a laparoscopic surgery. In order to insufflate the abdomen and expand the space in which the surgeon is operating, you should anticipate use of:
 - A. Nitric oxide.
 - B. Carbon dioxide.
 - C. Oxygen.
 - D. Hydrogen peroxide.
7. You are preparing to autoclave theatre instruments. You understand that the bowie dick test is now known as the:
 - A. Dynamic air removal test
 - B. Air challenge test
 - C. Process challenge test
 - D. Diagnostic test
8. You are preparing for an explorative laparotomy for a patient with an acute abdomen. You realize that one disadvantage of choosing Chlorhexidine Gluconate as a prepping agent is:
 - A. It irritates the skin
 - B. It is not effective in the presence of soap and organic debris
 - C. It continues to kill microorganisms for some time after application
 - D. It requires repeated application for its full antimicrobial activity to be effective.
9. A perioperative theatre technician is arranging theatre supplies. Which of the following should she classify as high-flow oxygen delivery devices?
 - A. Nasal cannulas and non-rebreather masks,
 - B. Simple face masks and Tracheostomy collar
 - C. Venturi mask and Non-invasive Ventilation
 - D. Partial re-breather mask and T-piece

10. You are preparing to transfer a patient who has undergone a craniotomy under general anesthesia to the PACU unit. The most appropriate position to maintain the patient in is:
- A. Neutral with the head of bed elevated 90 degrees
 - B. Neutral with the head of bed elevated 30-45 degrees
 - C. Trendelenburg position with head flexed at 10 degrees
 - D. Recovery position
11. A patient who has previously undergone pacemaker insertion is now scheduled for pyloromyotomy. Which of the following electrosurgical precautions should you apply?
- A. Maintaining a safe distance between the pacemaker and its leads and any electrosurgical cords and cables to prevent interference or damage.
 - B. Consistently monitoring the patient's condition during electro surgery by regularly observing their ECG and peripheral pulse at a minimum.
 - C. Ensuring the presence of a defibrillator at all times during the surgery to be ready for any potential emergencies.
 - D. Whenever feasible, employing bipolar electro surgery and selecting the lowest achievable setting on the ESU to minimize risks.
12. Where are test packs placed to present the greatest challenge to the steam sterilizer?
- A. Bottom rack back
 - B. Top rack back
 - C. Center
 - D. Over the drain
13. The duration between the occurrence of a machine malfunction and its subsequent repair and restoration to working order is referred to as the:
- A. Down time
 - B. Break Down time
 - C. Idle time
 - D. Repair time

14. You are assisting in a thyroidectomy procedure. You should expect that the last accessory to be worn by the surgeon will be the:
- A. Googles
 - B. Surgical gloves
 - C. Gown
 - D. Theatre boots
15. What is the most appropriate method of processing used sharps in a perioperative theatre?
- A. Chemical sterilization
 - B. Disinfection
 - C. Autoclaving
 - D. Cleaning
16. You are preparing instruments for transport to the sterilization department. Which action is appropriate?
- A. Dip instruments with stiff hinges in mineral oil.
 - B. Use silicone on stiff hinges.
 - C. Rinse steel instruments in instrument milk.
 - D. Flush lumens of ophthalmic cannulas with clean water after use.
17. The temperature of the operating room is maintained at: (The conversion formula for Fahrenheit to Celsius is $-32 \times 5/9$. The formula for Celsius-to-Fahrenheit conversion is $\times 9/5 + 32$.)
- A. 68° to 73° F
 - B. 60° to 65° F
 - C. 74° to 79° F
 - D. 60° to 73° F.
18. Which is the optimal location to place the dispersive electrode during laparotomy?
- A. Gluteal region
 - B. Thigh
 - C. Calf
 - D. Attached to the drapes

19. You have received a patient in the imaging area for colposcopy. The most appropriate position for this procedure is:
- A. Trendelenburg position
 - B. Lithotomy position
 - C. Sims position
 - D. Prone position
20. You are reviewing information related to mechanical ventilators. Which statement is appropriate?
- A. Artificial ventilators do not require humidifiers
 - B. Accessories such as endotracheal tubes should be sterilized in jik
 - C. The ventilator itself may be sterilized in ethylene oxide
 - D. Filters in the ventilators should not be autoclaved to avoid damage

SECTION B: (40 MARKS)

Answer all questions in this section.

21. Briefly explain the functions of the following operating table accessories. (5 marks)
- a) Cylindrical pads
 - b) Wedges
 - c) Shoulder braces
 - d) Abduction pads
 - e) Horseshoe rest
22. Outline FOUR factors that should be considered in selecting an appropriate type of anesthesia for a patient. (4 marks)
23. A perioperative theatre technician reviews the stages of general anesthesia with a group of students in her unit. Briefly explain the FOUR stages that he should review. (4 marks)
24. You are preparing to pre-test the anesthesia machine. State FIVE safety features that you will check in this machine. (5 marks)
25. A patient has undergone open reduction and internal fixation and is ready to be discharged from post anesthesia care unit to the orthopedic ward. Explain FIVE safety guidelines you will employ in the transfer. (5 marks)
26. State FOUR precautions that a theatre technician should follow when cleaning used instruments in an operating theater. (4 marks)
27. You are working in the central sterile services department. A glass container has been brought for sterilization using gas plasma since it is very sensitive to heat. Explain the FOUR phases of gas plasma sterilization cycle. (4 marks)
28. Differentiate between a two-stage skin prep and a single stage prep. (2 marks)
29. Contamination in the operating theater is frequently observed when adequate preventative measures are not implemented. Outline THREE potential sources of contamination in theater. (3 marks)
30. To prevent eye fatigue and ensure adequate illumination of the surgical site, outline FOUR qualities that the lighting used in the operating room should possess. (4 marks)

SECTION C: (40 MARKS)

Answer any two questions in this section.

31. You are checking the functionality of suction machine in anticipation for surgery.
- a) Describe the process of checking for the functionality of the suction machine
(10 marks)
 - b) During performance check you identify that the suction machine is faulty. Describe the steps you will take to repair the machine
(10 marks)
32. You have reported to work on a Monday morning at 8.00 am. The theatre list shows a busy day with a variety of surgeries scheduled for the day.
- a) Explain any FIVE points on how you will arrange and prepare the operation theatre prior to surgery
(10 marks)
 - b) The different surgical procedures will require different patient positions. Explain any FIVE surgical positions used in theatre and examples of surgical procedures indicated for each.
(10 marks)
33. A craniotomy procedure has just been completed in your theatre. You are required to clean and decontaminate the instruments used.
- a) Describe the process of cleaning and decontamination you will follow. (12 marks)
 - b) Explain any FOUR reasons why cleaning and decontaminating instruments is important.
(8 marks)