**2021 Worksheet # 10**

**Category 3:**

**Piped Gas and Vacuum Systems:**

**Pages:**

**73 - 74**

**Chapter 15:**

**Dental Gas and Vacuum Systems:**

**Pages:**

**132 – 153**

1. Category 3 piped gas and vacuum systems. What sedation shall be only permitted\_\_\_\_\_\_\_\_.

 A. deep sedation

B. general anesthesia

**C. minimal sedation**

D. all of the above

2. Category 3 Piped gas and Vacuum distribution systems. . What category should category 3 distribution comply with\_\_\_\_\_\_\_\_\_\_?

 A. Category 2

B. Category 1

C. Category 4

D. Category 5

3. Category 3 Medical Air supply, Medical- Surgical vacuum and WAGD systems shall comply with category 1 except they are allow to be \_\_\_\_\_\_\_\_\_\_\_.

 A. Duplex

B. Triplex

**C. Simplex**

D. Complex

4. Category 2 Dental gas and vacuum system cylinders in service or in storage shall be \_\_\_\_\_\_\_\_\_ secured and located to prevent falling or being knocked over.

A. only in service

B. only in storage

C. all cylinders

**D. individually**

5. Category 2 Dental nonmetallic hose and Flexible connectors shall not exceed 1.52 m \_\_\_\_\_\_\_\_ in length and shall not be concealed or penetrate walls, floors, ceilings, or partitions.

 A. 6 ft.

B. 10 ft.

C. 4 1/2 ft.

**D. 5 ft.**

6. What Category does dental piped gas and piped vacuum system requirements shall be applied in facilities where general anesthesia and deep sedation is performed \_\_\_\_\_\_\_\_\_\_\_\_?

 **A. Category 1**

B. Category 2

C. Category 3

D. Category 4

7. Category 2 installers of medical gas systems shall be certified in accordance with\_\_\_\_\_\_\_\_\_ Professional Qualification Standard for Medical Gas Systems Installers, regardless of the capacity of the source equipment.

 A. ANSI/ASME

B. ASSE 6015

**C. ASSE 6010**

D. ASSE 6035

8. Piping systems shall be designed and sized to deliver the required flow rates at the utilization pressures. What is the minimum pipe size for Category 2 oxygen system \_\_\_\_\_\_\_\_\_\_\_\_?

A. NPS 3/8 in – 5/8 in O.D

B. NPS1/4in – 1/2in O.D

**C. NPS 3/8in – 1/2in O.D**

D. NPS 1/2in – 5/8in O.D

9. Piping systems shall be designed and sized to deliver the required flow rates at the utilization pressures. What is the minimum pipe size for category 2 nitrous oxide system\_\_\_\_\_\_\_\_\_\_\_\_?

 A. NPS 3/8in – 5/8in O.D

**B. NPS 1/4in – 3/8 in O.D**

C. NPS 3/8in – 1/2in O.D

D. NPS 1/2in – 5/8in O.D

10. Nitrous Oxide Scavenging. Shall be limited to portions of dental facilities where moderate or minimal sedation is administered. What system shall be used where the dental treatment involves general anesthesia or deep sedation?

 A. Dental vacuum

B. Scavenging unit

**C. WAGD system**

D. Dental air

11. Category 2 Dental, Warning Systems (Oxygen and Nitrous Oxide). The master alarm panel shall be permitted to be a single alarm panel and shall be located in the facility at a point of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the facility is in operation.

 **A. Continuous surveillance**

B. Continuous daily

C. Only when facility is open

D. Only when facility is closed

12. Hose and flexible connectors, both metallic and nonmetallic, shall be no longer than necessary and shall not penetrate or be concealed in walls, floors, ceilings, or partitions. Hose and flexible connectors, metallic or nonmetallic, shall have a minimum burst gauge pressure of \_\_\_\_\_\_\_\_\_. Dental installation, medical gas hose and flexible connectors shall be oxygen compatible.

 **A. 1000 psi**

B. 500 psi

C. 150 psi

D. 1200 psi

13. Dental air shall be used as a support gas for driving dental tools and shall be permitted to be used to supply air-driven equipment. Dental compressed air shall not be used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 A. Purging

B. Pressure testing

**C. Respiration**

D. Nebulizer

14. The two banks of each medical gas source (oxygen, nitrous oxide) shall be manifold so that either bank can supply its distribution piping system. Where the source equipment is remote from a Dental single treatment facility and an in-use bank is unable to supply the system, the manifold shall \_\_\_\_\_\_\_\_\_\_\_\_\_ switch to the secondary bank.

  **A. Automatically**

B. Manually

C. The bank is unable to

D. An emergence shutoff valve

15. Medical gas source equipment (oxygen and nitrous oxide) that serves one or two Dental treatment facilities shall include two banks of one or more cylinders of oxygen and (if used) two banks of one or more cylinders of nitrous oxygen, each bank shall contain at least \_\_\_\_\_\_average day’s supply.

 A. Three

B. Two

**C. One**

D. Four

16. Piping for Dental Category 2 Medical Gas, the piping for the Oxygen, Nitrous oxide systems the pipe shall be hard-drawn seamless copper tube conforming to what standard \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 A. ASTM B88

**B. ASTM B819**

C. ASTM B280

D. ASTM D1785

17. In category 3 dental gas and vacuum systems. What sedation shall be limited to \_\_\_\_\_\_\_\_\_\_\_\_.

1. Moderate sedation
2. General sedation
3. Deep sedation
4. **Minimal sedation**

18. Piping for dental vacuum systems and scavenging systems shall be copper, PVC plastic, or CPVC plastic. What schedule of PVC pipe should be used to pipe in category 2 dental vacuum system \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

 A. 40/60

B. 80/60

C. 120/80

**D. 40/80**

19. Individuals who perform the initial and final tests of the oxygen and nitrous oxide piping systems shall be certified to ASSE 6010, What should the Individuals who verify the oxygen and nitrous oxide piping systems shall be certified to what standard \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 A. ASSE 6010

B. ASSE 6035

**C. ASSE 6030**

D. ASSE 6040

20. A dental area alarm panel shall be centrally located where two or more treatment areas are supplied from the same zoned dental gas and vacuum piping. At what percent should the alarm for the oxygen and the nitrous oxide shall indicate at \_\_\_\_\_\_\_\_\_\_\_ from normal?

 A. +/- 32 %

B. +/- 40 %

**C. +/- 20 %**

D. +/- 35

21. Brazing procedures and brazier performance for the installation of dental piping shall be in accordance of \_\_\_\_\_\_\_\_\_\_\_. “Welding and Brazing Qualifications.

 A. AWS B 2.1

B. AWS B 2.3

C. Section V111

**D. Section 1X**

22. Where plastic vacuum and plastic scavenging piping systems are installed, they shall be visually inspected for cross-connections to positive-pressure systems before applying positive test pressures to the \_\_\_\_\_\_\_\_\_\_\_ piping systems.

 A. PVC

B. CPVC

C. Standard

**D. Copper**

23. What shall the test pressure be for oxygen and nitrous oxide piping in a dental lab. The pressure shall be \_\_\_\_\_\_\_\_\_\_ the system operating pressure but not less than a gauge pressure of\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 A. 2.5 time /200 psi

B. 3.5 time /150 psi

C. 4.5 time / 100 psi

**D. 1.5 time / 150 psi**

24. All Dental Category 2 medical gas systems shall have an \_\_\_\_\_\_\_\_\_\_ valve accessible from all use-point locations in an emergency.

**A. emergency shutoff**

B. oxygen shutoff

C. nitrous shutoff

D. vacuum shutoff

25. Category 3 piped gas, cylinder or cryogenic liquid container headers shall have sufficient cylinder connections to provide for at least one average day’s supply and with the appropriate number of connections determined only after consideration of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**A. the delivery schedule**

B. only 2 and 2 cylinders

C. only 3 cylinders is required

D. the alternate supplies