Midwest Consortium
40-Hour Technician Posttest
Version B (0603) – Answer Key

1. What does the symbol in the white diamond tell you about the material?
   a. It floats on water.
   b. It is an oxidizer.
   c. It is a biological hazard.
   d. It should not come in contact with water.

2. What types of information must you know to safely wear an Air-Purifying Respirator (APR)?
   a. All of the following types of information.
   b. Oxygen concentration.
   c. Names of the airborne contaminants.
   d. Concentration of airborne contaminants.

3. Which of the following actions should you take if a direct-reading instrument indicates 10% of the Lower Explosive Limit (LEL)?
   a. Continue to work, using spark-proof tools.
   b. Consult the MSDS.
   c. Immediately call your supervisor over and tell him/her.
   d. Leave the work area immediately.

4. A company must make OSHA citations available to workers.

5. Complaints to OSHA about unsafe working conditions can be filed only by supervisors.
A  6.  If a chemical gets on your hands or arms, which of the following health effects could it cause?

   a.  All of the following could be health effects from the exposure.
   b.  You may get a rash from the exposure.
   c.  Your blood may be affected by the exposure.
   d.  One of your body organs —like a kidney or a liver— may be affected by the exposure.

C  7.  You are in Level A protective gear working to confine a spill when a fire breaks out near you. Which of the following actions is your best choice?

   a.  Help spray foam on the fire to keep it from spreading.
   b.  Determine the correct fire control material from the Emergency Response Guide, then help to control the fire.
   c.  Leave the scene because your Level A chemical-protective clothing can melt.
   d.  Continue to contain the chemical release and let the fire brigade handle the fire.

Match the color of the placard with the type of hazard it describes.


       d.  Oxidizer.

B 11.  Which of the following responsibilities are conducted at the Technician level?

   a.  All of the following are conducted at the Technician level.
   b.  Perform assigned role in the incident command system.
   c.  Determine decontamination procedures at an incident.
   d.  Develop a site safety and control plan.
12. In general, a decon worker's level of chemical protection is:
   a. Level A.
   b. Level B.
   c. Modified Level B.
   d. One level lower than the entry team's.

Use the diagram below to answer Questions 13 and 14.

13. Which is the best location for the Command post?
   a. Point A.
   b. Point B.
   c. Point C.
   d. Point D.

14. The decontamination line should be set up between which two points?
   a. Points D to B.
   b. Points F to E.
   c. Points C to B.
   d. Points D to C.

15. An oxidizer is a substance that:
   a. Passes directly from a gas to a solid and condenses to form solid crystals.
   b. Lowers the level of oxygen in a reaction to prevent fires.
   c. May produce fire in the presence of a fuel.
   d. Slows the process of a chemical reaction.
16. Which of the following steps should you take when you put on a chemical-cartridge respirator?

a. Inspect your Level B suit for tears.
b. Perform a positive-pressure and negative-pressure user check.
c. Check air pressure gauge to make sure it is full.
d. Sterilize with ethylene oxide.

17. The characteristic ionization potential (expressed in electron volts [eV]) of a contaminant is measured with which of the following types of monitors?

a. PID.
b. A combustible-gas indicator.
c. Personal charcoal badge.
d. Goniometer.

18. The advantage of direct-reading instruments for evaluating the air during an emergency is:

a. You can use the lab nearest to the facility.
b. Equipment requires no maintenance.
c. The result is certified by an accredited chemist.
d. The result is available immediately.

Indicate whether the following elements should be part of a permit-required confined-space program—Yes (Y) or No (N).

19. Y N The confined space must be monitored before you enter it and during work activity.

20. Y N There must be a communication system in place prior to entry.

21. Y N A safety attendant must be posted outside the entrance.

Indicate whether each of the following statements about pH is true (T) or false (F).

22. T F Chemicals with pH values higher than 12 will cause burns to the eyes, skin, or lungs.
23. T F  Chemicals with pH values of 2 or lower will cause burns to the eyes, skin, or lungs.

Indicate whether each of the following statements about chemical-protective clothing (CPC) is true (T) or false (F).

24. T F  Most CPC suits “breathe,” which will reduce heat build-up when used in hot weather.

25. T F  Almost all CPC suits provide protection from fire for the responder.

26. T F  Responders wearing Level C protection are at increased risk for slips, falls, or tripping accidents, compared with responders wearing Level B protection.

27. T F  Before donning CPC suits, you must check for splits or evidence of strain in the seams.

A 28. Bonding and grounding is used to:

a. Reduce or eliminate ignition by static electricity.
b. Improve team cohesion.
c. Ensure that decontamination is complete.
d. Transfer bulk solids only.

D 29. You are selecting the facepiece for a full-face cartridge respirator to protect against organic vapor hazards (black band on cartridge). During the qualitative fit-test by the safety supervisor, you can smell banana oil. Which of the following could be the problem?

a. All of the following could be the problem.
b. The air pressure gauge is not working properly.
c. It has the wrong type of cartridge.
d. The cartridge is not screwed in tightly.

D 30. The incident commander wants to use a different type of glove because of its "permeation problems." What does she mean?

a. The glove is too thick.
b. The glove does not have metallic thread.
c. The cuff is not tight enough to keep chemicals from leaking in.
d. The glove allows the chemicals we are working with to pass through it easily and quickly.
_C_ 31. The NIOSH Pocket Guide tells you that mercury has a specific gravity of about 13.6 and a solubility of 0.0%. The mercury has spilled into a neighborhood stream. How would you plan to contain the mercury spill from going further downstream?

a. All of the following are correct.
b. With a floating boom.
c. With a sand bag dike and an overflow dam.
d. With AFFF foam.

**Use the table provided below to answer Questions 32–36.**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>PEL in ppm</th>
<th>IDLH in ppm</th>
<th>Vapor Pressure (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allyl chloride</td>
<td>1</td>
<td>300</td>
<td>295</td>
</tr>
<tr>
<td>Phenol</td>
<td>5</td>
<td>250</td>
<td>0.36</td>
</tr>
<tr>
<td>Sulfur pentafluoride</td>
<td>.025</td>
<td>1</td>
<td>561</td>
</tr>
<tr>
<td>Vinyltoluene</td>
<td>100</td>
<td>5,000</td>
<td>1.1</td>
</tr>
</tbody>
</table>

_ C_ 32. Given only the information above, name the chemical posing the greatest potential inhalation hazard for emergency responders entering a confined space.

a. Allyl chloride.
b. Phenol.
c. Sulfur pentafluoride.
d. Vinyltoluene.

Imagine that all four chemicals were each present at 25 ppm. Indicate whether any of these chemicals require respiratory protection according to OSHA.

33. Y N Allyl chloride.
34. Y N Phenol.
35. Y N Sulfur pentafluoride.
36. Y N Vinyltoluene
37. A drum filled with oleum (fuming sulphuric acid) is punctured accidentally. An acid mist is forming. What is the lowest level of protection you should have on to safely work on the drum?

a. Level A.
b. Level B.
c. Level C.
d. Level D.

38. Water run-off from the decontamination line should be handled as if it is:

a. Potentially contaminated wastewater.
b. Not hazardous because the chemicals are diluted with water.
c. Hazardous only if the material is water-reactive.
d. Hazardous only if the incident is in or near a community.

39. Which of the following types of monitors is least useful if you were monitoring for an explosive environment?

a. Oxygen meter
b. Flame Ionization Detector.
c. LEL meter.
d. Combustible-gas indicator.

40. According to 1910.120, the HAZWOPER standard, which of the respirators is acceptable for responding to unknown spills?

a. Half-face air-purifying respirator (APR).
b. Full-face air-purifying respirator (APR).
c. Dust mask (minimum requirement).
d. SCBA, positive pressure.

41. You are wearing Level B protection. What is the last piece of chemical-protective clothing that should be taken off before you exit the decontamination line, assuming you are wearing all four listed?

a. Inner gloves.
b. Respirator facepiece.
c. Disposable booties.
d. Inner coveralls.
42. The item that should be disposed of after a spill clean-up because it cannot be properly decontaminated is:

a. Wooden-handled tool.
b. Air monitor.
c. SCBA cylinder.
d. Communications equipment worn inside a Level A suit.

43. Which of the following events would be considered non-compliant with OSHA requirements for the plant’s Emergency Response Plan (ERP)?

a. The ER team skipped debriefing after a minor incident.
b. A new production process was brought on-line in March 1998 and the ERP was revised within thirty days.
c. The plant’s new incident commander was appointed and trained in April 1999 and the ERP was revised immediately.
d. A new chemical has been accepted by the QA, and the ER team immediately receives emergency response training for handling this new chemical.
Match each of the hand signals with its correct interpretation.

_D_ 44. Need Help.

_A_ 45. Out of air, cannot breathe.

_C_ 46. Task cannot be completed with remaining air.

a. Hands clutching throat  
b. One arm over head, one arm horizontal

c. One thumb down, one arm horizontal  
d. Hands over head
47. Propane has an LEL of 2.1% and a UEL of 9.5%. In a confined space, you detect a propane level of 20% by volume of air. There are no other chemicals present in the unventilated confined space, and no movement is detected in the air. Which of the following is most correct about the confined space?

a. An explosion of the propane gas is very likely to happen at the entrance to this confined space.
b. The percent of propane by volume of air must be 50% or higher before we have to worry about an explosion in this situation.
c. An explosion proof ventilator is not required to ventilate this space.
d. The percentage of propane by volume of air has nothing to do with the chance of an explosion.

48. Which of the following actions is implemented at every emergency response?

a. Follow directions from the Incident Commander.
b. Check if workers in the area might have any symptoms from the release.
c. Check if the plant’s ventilation system could be spreading the vapor.
d. Check the MSDS to see if the chemical is reactive.

49. When airborne and liquid contaminants cannot seriously harm the skin and cannot be absorbed through the skin, but half-mask respiratory protection is needed, what is the minimum level of CPC you can wear?

a. Level A totally encapsulating, chemical-protective suit.
b. Level B hooded, chemical-resistant suit.
c. Level C hooded, chemical-resistant suit.
d. Level D cotton coveralls.

50. Which of the following activities is carried out in the Hot zone?

a. Outer glove removal.
b. Tool/equipment drop.
c. Boot removal.
d. Decon shower for workers who are changing air tanks only.