

PRACTICE EXAM 15: HAZMAT & TANKER SIMULATION (50 QUESTIONS)

HAZMAT SECTION (Questions 1–30)

1. A driver transporting 1,000 pounds of Class 3 Flammable Liquid picks up an additional 1,200 pounds of Division 5.1 Oxidizer at a second stop. After confirming segregation requirements can be met, the driver recalculates the placarding requirement. The Class 3 material was below the 1,001-pound threshold before the second pickup. Now both materials are on the vehicle. What is the correct placarding decision?

A. Only OXIDIZER placards, because Division 5.1 at 1,200 pounds exceeds the threshold while Class 3 at exactly 1,000 pounds does not reach 1,001 pounds

B. Both FLAMMABLE and OXIDIZER placards, because the presence of a second hazard class automatically requires all materials to be placarded

C. OXIDIZER placards for the Division 5.1 exceeding the 1,001-pound threshold — the Class 3 at exactly 1,000 pounds does not reach 1,001, but the combined Table 2 total of 2,200 pounds also allows DANGEROUS placards as an alternative display option

D. DANGEROUS placards only, because two hazard classes are present and neither requires individual class-specific placards

2. A driver is transporting a load of hazardous materials when a fellow driver on the CB radio warns of a roadside wildfire approximately two miles ahead that is spreading toward the highway. Smoke is already visible on the horizon. What should the HazMat driver do?

A. Slow down, assess the situation as it develops, and if the fire appears to be approaching the highway, stop well before the fire zone and seek an alternate route — never drive a placarded vehicle through or near an active fire

B. Continue at full speed to pass through the fire zone before it reaches the highway, minimizing exposure time to the smoke and heat

C. Pull over immediately and wait on the shoulder for the fire department to provide an all-clear before continuing through the area

D. Remove the placards before entering the smoke zone to prevent them from melting or being damaged by heat exposure

3. Under the Hazardous Materials Regulations, what is the significance of the letters "UN" preceding a four-digit identification number on shipping papers?

A. "UN" indicates the material is classified as "Urgently Needed" and qualifies for expedited routing through toll facilities

B. "UN" indicates the material is "Unclassified and Neutral" and does not require any specific hazard class designation

C. "UN" indicates the material is regulated only within the United States and has no international classification or recognition

D. "UN" indicates the identification number is internationally recognized by the United Nations and is valid for both domestic and international transport

4. A driver is loading Class 8 Corrosive liquid drums onto a flatbed trailer. The shipper provides protective gloves and safety glasses for the driver to wear during loading. Should the driver use this personal protective equipment?

A. No, because PPE creates a false sense of security that may cause the driver to handle the corrosive drums less carefully

B. Yes, chemical-resistant gloves and safety glasses provide essential protection against splashes, drips, or contact with residue on the drum exteriors during handling

C. No, because federal HazMat regulations prohibit drivers from wearing PPE during loading operations to ensure they remain cautious

D. Yes, but only if the corrosive material is Packing Group I — PG II and PG III corrosives do not require any PPE during handling

5. A driver is reviewing shipping papers for a load that includes a material identified as "Compressed gas, toxic, oxidizing, n.o.s., 2.3, UN3303." The entry shows hazard class 2.3 with

subsidiary hazards of 5.1 and 8. What does the presence of three hazard designations tell the driver?

- A. The material has been improperly classified because no material can have more than two hazard designations simultaneously
- B. The three hazard codes indicate the material requires three separate shipping paper entries — one for each hazard it presents
- C. The subsidiary hazard numbers are reference codes for the shipper's internal inventory system and have no regulatory significance
- D. The material presents a primary hazard (Division 2.3 Poison Gas) plus two subsidiary hazards (Division 5.1 Oxidizer and Class 8 Corrosive), each of which may require subsidiary labels and placards

6. A vehicle is carrying 700 pounds of Class 3 Flammable Liquid, 400 pounds of Class 8 Corrosive, and 100 pounds of Division 2.3 Poison Gas. What placards must be displayed?

- A. POISON GAS placards for the Table 1 material at any quantity — the Class 3 and Class 8 materials do not individually reach 1,001 pounds, but their combined total of 1,100 pounds exceeds the threshold, allowing DANGEROUS placards as well
- B. FLAMMABLE, CORROSIVE, and POISON GAS placards — all three classes must be individually placarded whenever three or more classes are present
- C. DANGEROUS placards only, because the total of all materials exceeds 1,001 pounds and covers all hazard classes with a single placard
- D. No placards are required because neither Table 2 class individually reaches 1,001 pounds and the Poison Gas weight is negligible

7. A driver transporting Division 1.3 Explosives (Table 1) must stop for fuel. The driver's vehicle has dual fuel tanks — one on each side of the tractor. While fueling from the driver's side tank, the driver notices a gasoline puddle on the ground beneath the passengerside fuel cap, apparently from a previous fueling at this pump. What should the driver do?

- A. Continue fueling because the gasoline puddle is from a previous customer and is not the HazMat driver's responsibility

B. Increase the fueling speed to finish quickly and depart the area before the puddle vapors reach dangerous concentrations

C. Stop fueling, alert the station attendant to the gasoline puddle, and ensure the area is cleaned or the vehicle is repositioned before continuing to fuel — a gasoline puddle near an explosives vehicle creates an ignition and fire risk

D. Light a road flare to warn other customers about the gasoline puddle as a courtesy safety measure

8. A driver is assigned a load of hazardous materials. Upon reviewing the shipping papers, the driver notices that the total quantity for one material is listed as "approximately 2,000 lbs." Is the word "approximately" acceptable in the quantity field?

A. Yes, because the word "approximately" is a standard qualifier accepted by the DOT for all hazardous materials shipping paper entries

B. No, the total quantity must be a specific measurement — not an approximation — because the exact quantity determines placarding requirements, reportable quantity applicability, and emergency response procedures

C. Yes, but only for Class 9 Miscellaneous materials, which have relaxed documentation requirements compared to other hazard classes

D. No, but the driver may accept the entry if the approximation is within 10 percent of the actual measured quantity

9. A driver is transporting a placarded load of hazardous materials through an area experiencing a severe thunderstorm with frequent lightning. The driver is driving on an open highway with no shelter available. What is the safest course of action?

A. Stop the vehicle on the highway shoulder and exit the cab to reduce the risk of the cab attracting a lightning strike

B. Increase speed to travel through the storm area as quickly as possible, reducing the total exposure time to lightning

C. Continue driving at reduced speed because lightning cannot strike the vehicle while it is in motion on rubber tires

D. Continue driving at reduced speed, remain inside the cab (which provides protection from lightning through its metal frame), and pull over only if conditions become too dangerous for safe driving

10. A driver discovers during loading that the shipper has placed a pallet of Class 3 Flammable Liquid packages directly on top of a pallet of Division 6.1 Toxic material packages. The driver checks the segregation table and confirms that Class 3 and Division 6.1 may be loaded together with proper separation. However, stacking one directly on top of the other raises what concern?

- A. The weight of the flammable liquid pallet on top could crush the toxic material packages below, damaging containers and potentially causing a release that combines both hazards
- B. Stacking HazMat pallets is always prohibited regardless of compatibility because the stacking creates vertical segregation violations
- C. The heat from the flammable liquid packages will rise and warm the toxic material packages, causing them to decompose
- D. Stacking is only permitted when the top pallet weighs less than 100 pounds, and most flammable liquid pallets exceed this limit

11. A driver transporting hazardous materials is pulled over for a routine roadside inspection. The inspector asks the driver to identify the location of the emergency response information for the materials being carried. Where should this information be?

- A. In a sealed envelope in the vehicle's glove compartment, marked "FOR EMERGENCY USE ONLY — DO NOT OPEN"
- B. Included with or attached to the shipping papers in the driver's door pouch or on the driver's seat — immediately accessible alongside the shipping papers
- C. Posted on the outside of the trailer near the rear placards where emergency responders can read it without opening any doors
- D. Stored electronically on the carrier's server and accessible through a QR code printed on the back of each placard

12. A driver is hauling a load of Division 2.1 Flammable Gas when the vehicle's engine begins overheating. The temperature gauge is approaching the red zone. The driver is on a highway with no exit for five miles. What should the driver do?

- A. Continue driving to the next exit because stopping on the highway is more dangerous than a slightly overheated engine
- B. Increase speed to create more airflow through the radiator, which may cool the engine enough to reach the next exit
- C. Shut off the engine immediately while the vehicle is still moving to prevent any further heat generation near the flammable cargo
- D. Pull over to the shoulder safely, shut off the engine, and allow it to cool — an overheating engine near flammable gas creates a fire risk from hot exhaust components and potential fluid leaks

13. Under the Hazardous Materials Regulations, a driver who personally witnesses suspicious activity near a parked placarded HazMat vehicle should take what action?

- A. Report the suspicious activity to the carrier and to law enforcement, providing a description of the activity, the persons involved, and any vehicle information — do not attempt to confront the individuals
- B. Physically confront the suspicious individuals to determine their intentions before deciding whether to report the activity
- C. Ignore the activity because security monitoring is exclusively the carrier's responsibility and the driver has no security role
- D. Photograph the suspicious individuals and post the images to social media to warn other drivers in the area

14. A vehicle is carrying 500 pounds of Division 4.3 Dangerous When Wet material and 500 pounds of Class 8 Corrosive. What placards must be displayed?

- A. CORROSIVE placards only, because Class 8 materials take placarding priority over Division 4.3 in all mixedload situations
- B. DANGEROUS placards, because two hazard classes are present and the combined total exceeds 1,001 pounds
- C. DANGEROUS WHEN WET placards for the Table 1 material at any quantity — the Class 8 at 500 pounds does not reach the 1,001pound Table 2 threshold independently
- D. Both DANGEROUS WHEN WET and CORROSIVE placards, because Division 4.3 requires placarding at any quantity and Class 8 exceeds 1,001 pounds

15. A driver picks up a load of hazardous materials at a chemical plant. The shipper provides the shipping papers and tells the driver, "The emergency response number is on the papers — it's our office number, and someone is always there during business hours." The driver checks and sees the number listed. It is now 7:00 PM on a Friday evening. Is this number acceptable?

A. Yes, because the shipper stated someone is always in the office during business hours, and Friday evening is still within the extended business day

B. No, the emergency response number must provide 24hour, 7day coverage — a businesshouronly office number does not satisfy the requirement, and the driver should not accept the shipment without a compliant number

C. Yes, because the driver can supplement the shipper's number with CHEMTREC's number written on the papers as a backup

D. No, but the driver may accept the shipment if the shipper provides a personal cell phone number as a secondary contact

16. A driver transporting a placarded load stops at a rest area. While parked, the driver decides to perform some basic maintenance — checking the engine oil, topping off windshield washer fluid, and testing the battery connections. All of these tasks are performed at the front of the tractor, approximately 30 feet from the placarded trailer. Is there any HazMat concern with these maintenance activities?

A. Yes, all vehicle maintenance is prohibited within 100 feet of a placarded trailer under federal HazMat regulations

B. Yes, the driver must first remove all placards from the trailer before performing any mechanical work on the tractor

C. No, because these are routine maintenance tasks at the tractor — far from the cargo — and do not create ignition sources near the hazardous materials

D. Basic maintenance is acceptable, but the driver should be aware that testing battery connections can produce sparks — if the cargo is flammable or explosive, sparks near the vehicle should be avoided, and the 30foot distance provides reasonable separation for nonvolatile cargo

17. A driver discovers that one of the shipping paper entries for the current load shows the hazard class as "3" but the required label listed in Column 6 of the Hazardous Materials Table for this specific material is "FLAMMABLE LIQUID" plus "CORROSIVE" as a subsidiary. The packages in the trailer have only the FLAMMABLE LIQUID label — no CORROSIVE subsidiary label is present. What should the driver do?

A. Refuse to transport the packages until the shipper adds the missing CORROSIVE subsidiary labels — both the primary and subsidiary labels specified in Column 6 must be present on each package

B. Accept the packages because the primary label is correct and subsidiary labels are optional for highway transport

C. Apply the missing CORROSIVE labels from the driver's personal supply of labels kept in the cab for emergencies

D. Transport the packages with only the primary label but add CORROSIVE placards to the vehicle as a substitute for the missing package labels

18. A driver is transporting a mixed load of hazardous materials and nonhazardous freight. During a delivery stop, the driver removes all the hazardous materials from the trailer. Only nonhazardous general freight remains. The trailer has not been swept or cleaned — some packing material from the HazMat packages is still on the floor. Must the driver continue to display placards?

A. Yes, until the trailer is swept clean and verified free of all hazardous materials residue and packaging debris

B. No, because the hazardous materials have been removed and packing material from HazMat packages is not itself a hazardous material

C. No, but the placards should be removed and the trailer should be cleaned, because the packing debris indicates hazardous residue may be present — the driver should verify whether any actual product residue remains before making a placard decision

D. Yes, because any trailer that has ever carried hazardous materials must display placards permanently until the trailer is decommissioned

19. A driver transporting Division 1.1 Explosives is involved in a minor parking lot fenderbender. No damage to the cargo, no release of material, no injuries. The property damage is approximately \$1,500. The driver calls the carrier to report the incident. The carrier

dispatcher says there's no need to call the NRC because it's "just a fenderbender." Is the dispatcher correct?

A. Yes, this incident does not meet any of the mandatory NRC notification triggers — no release, no injury, no death, no evacuation, no road closure, and property damage far below \$50,000

B. No, all accidents involving Division 1.1 Explosives require NRC notification regardless of damage amount or consequences

C. Yes, but only because the accident occurred in a parking lot rather than on a public highway — highway fenderbenders with explosives always require NRC notification

D. No, because the presence of Division 1.1 Explosives automatically elevates any incident to NRC reportable status

20. A driver is hauling a placarded load of Class 8 Corrosive material. During an enroute stop, the driver opens the trailer doors and immediately detects a strong chemical odor. The interior air appears hazy. No specific leak is visible from the doorway. What should the driver do?

A. Enter the trailer wearing the safety glasses and gloves provided by the shipper to locate the source of the odor

B. Close the doors and continue driving to the destination, because the enclosed trailer will contain any minor vapor release

C. Do not enter the trailer — close the doors, move away from the vehicle, and contact the carrier for guidance, because a strong chemical odor with visible haze indicates a likely release of corrosive vapor that could cause respiratory and eye injury

D. Fan the trailer doors open and closed rapidly to ventilate the interior, then enter to inspect once the haze has cleared

21. A driver picks up a shipment of hazardous waste accompanied by a Uniform Hazardous Waste Manifest. Before departing, the driver reviews the manifest and notices that the generator's EPA identification number field is blank. Should the driver accept the shipment?

A. Yes, because the generator's EPA ID number is optional on the manifest and is required only for international hazardous waste shipments

B. Yes, but the driver should write "PENDING" in the blank field to indicate the number will be added later by the carrier's compliance office

C. No, but the driver can accept the shipment if the generator provides a verbal EPA ID number that the driver writes on the manifest

D. No, the generator's EPA identification number is a required entry on the Uniform Hazardous Waste Manifest — a blank field means the manifest is incomplete, and the driver should not accept the shipment until it is corrected

22. A driver transporting 2,500 pounds of Division 2.2 NonFlammable Gas discovers during a stop that one of the four NONFLAMMABLE GAS placards has fallen off the vehicle. The placard is not recoverable. The driver has no spare placards. What must the driver do?

A. Stop driving and arrange to obtain a replacement placard before continuing — operating with three placards violates the fourplacard requirement and will result in a citation during any inspection

B. Continue driving because three out of four placards provide adequate warning from most approach angles

C. Replace the missing NONFLAMMABLE GAS placard with a DANGEROUS placard from the driver's supply as a temporary substitute

D. Cover the remaining three placards and drive without any placards to avoid the mixedplacard appearance of three identical and one missing

23. A driver is at a shipper's facility reviewing shipping papers for a load of hazardous materials. The driver notices that one material entry shows "Sulfuric acid" as the proper shipping name, but the identification number listed is "UN1831" instead of the correct "UN1830." The driver looks up the number and finds that UN1831 is for "Sulfuric acid, fuming." What should the driver do?

A. Accept the papers because both UN1830 and UN1831 refer to forms of sulfuric acid and the difference is insignificant

B. Cross out UN1831, write UN1830 above it, and initial the correction on the shipping papers before departing

C. Notify the shipper of the discrepancy — UN1830 and UN1831 are different materials with different hazard profiles, and the entry must accurately identify which material is actually being shipped

D. Accept the shipment but display both CORROSIVE and POISON placards as a precaution to cover both possible material identifications

24. A driver is transporting a placarded load on a narrow twolane road behind a slowmoving agricultural vehicle. The driver is considering passing the agricultural vehicle using the opposing lane. Several factors must be evaluated before passing. What HazMat-specific factor makes this passing decision more critical than for a standard commercial vehicle?

A. HazMat vehicles are prohibited by federal regulation from using the opposing lane to pass any vehicle on a twolane road

B. The time required to pass exposes the heavy HazMat vehicle to oncoming traffic in the opposing lane longer than a lighter vehicle, and the consequences of a headon collision involving hazardous materials are catastrophically amplified

C. The agricultural vehicle's slow speed creates a lowpressure zone behind it that makes passing physically impossible for heavy HazMat vehicles

D. HazMat vehicles must radio ahead to oncoming traffic before initiating any passing maneuver on a twolane road

25. A driver transporting hazardous materials is approached at a truck stop by a stranger who asks detailed questions about what the truck is carrying, where it's going, and what route it's taking. The stranger claims to be a journalism student writing an article about trucking. What should the driver do?

A. Answer all questions honestly because journalism students have a constitutional right to information about commercial freight movements

B. Provide the shipping papers for the stranger to photograph, since they are a public document displayed on the vehicle

C. Engage in a lengthy conversation about HazMat transportation procedures to help educate the journalism student about the industry

D. Politely decline to share specific details about the cargo, route, or destination — the questions could be legitimate but could also represent a security threat, and the driver should report the interaction to the carrier

26. A shipping paper entry reads: "Corrosive liquid, acidic, inorganic, n.o.s. (hydrofluoric acid), 8, UN3264, PG I, Poison Inhalation Hazard, Zone B, RQ, 1,000 lbs." This entry contains multiple regulatory designations. How many separate regulatory requirements does this single entry trigger?

A. Multiple requirements — the PG I Inhalation Hazard Zone B classification makes it a Table 1 material requiring POISON INHALATION HAZARD placards at any quantity, the "RQ"

triggers mandatory spill reporting, the "n.o.s." requires the technical name, and the subsidiary poison hazard requires additional labeling

B. Only two requirements — the proper shipping name and the identification number are the only elements that create regulatory obligations

C. One requirement — the hazard class of 8 (Corrosive) is the only element that determines regulatory treatment

D. Three requirements — placarding, labeling, and the emergency response telephone number are the only obligations created by any shipping paper entry

27. A driver is transporting hazardous materials on a highway when a heavy object falls from an overpass and lands on the trailer roof, creating a loud impact. The vehicle is not otherwise affected — it continues to drive normally. Should the driver stop to investigate?

A. No, because stopping on a highway is more dangerous than continuing to the next exit where a safe inspection can be performed

B. No, because the trailer roof is reinforced specifically to protect against falling debris and no damage is possible from a single impact

C. Yes, the driver should safely pull over and inspect the trailer and cargo for damage — an impact on the trailer roof could have damaged packages, compromised the trailer structure, or dislodged cargo, any of which could lead to a HazMat release

D. Yes, but only to check whether the falling object damaged any of the four placards, since placard integrity is the primary concern

28. A driver is assigned to pick up a load of hazardous materials from a small, independent shipper the driver has never visited before. Upon arrival, the driver notices the shipping papers are handwritten on a plain notepad rather than on a printed bill of lading form. The handwritten papers include all required elements — proper shipping name, hazard class, ID number, packing group, quantity, emergency response number, and the shipper's signed certification. Are handwritten shipping papers acceptable?

A. No, shipping papers must be machineprinted on official carrier or shipper letterhead to be considered legally valid documents

B. Yes, as long as all required regulatory elements are present, legible, and complete — the regulations do not mandate a specific paper format, template, or printing method

C. No, handwritten entries are specifically prohibited because they cannot be verified against a digital database during roadside inspections

D. Yes, but only for shipments weighing less than 500 pounds — larger shipments require machineprinted documentation

29. A driver transporting a placarded load of hazardous materials encounters a highway accident ahead. Traffic is completely stopped. While waiting, the driver notices that the temperature gauge on the dashboard is rising because the engine is idling without airflow from forward motion. After 20 minutes of idling in stopped traffic, the engine reaches the upper end of its normal operating range. What should the driver consider?

A. Turn off the engine immediately to prevent overheating, even though this will disable the air conditioning, power steering, and air brake compressor

B. Rev the engine to maximum RPM in neutral to increase coolant circulation and reduce the temperature reading

C. Open the hood while the vehicle is idling in traffic to increase airflow directly to the engine compartment

D. Monitor the temperature closely — if it approaches the red zone, the driver should shut off the engine before overheating occurs, understanding that the vehicle has sufficient stored air pressure for multiple brake applications even with the engine off

30. A driver transporting hazardous materials needs to make a tight Uturn at a deadend road to reposition the vehicle for a delivery. The trailer is loaded with Class 3 Flammable Liquid in drums. During the Uturn, the driver hears several loud thuds from inside the trailer. What is the most likely cause, and what should the driver do?

A. The loud thuds are the trailer's suspension compressing and rebounding during the tight turn and do not indicate any cargo concern

B. The thuds likely indicate that one or more packages have shifted or fallen during the tight turn — the driver should stop, inspect the cargo, and verify that no packages are damaged or leaking before continuing

C. The thuds are caused by the drums rotating inside the trailer, which is a normal behavior during turns and does not require investigation

D. The thuds indicate the trailer's loadlocking bars have disengaged, but since the drums are heavy enough to stay in place, no action is needed

TANKER SECTION (Questions 31–50)

31. A tank vehicle driver is making a delivery to a customer whose receiving tank is located at the bottom of a steep driveway. The driver must back the loaded tank vehicle down the driveway to reach the fill connection. What specific tank vehicle concern does this downhill backing present?

A. During downhill backing, the liquid will surge toward the front of the tank (the lowest point going downhill), adding weight to the steering axle and making the vehicle harder to steer in reverse — the driver must use extra caution with steering inputs and speed control

B. Downhill backing is physically impossible for loaded tank vehicles because the weight of the liquid prevents the vehicle from moving backward on a grade

C. The liquid will surge to the rear during downhill backing, lifting the front tires off the ground and making steering impossible

D. Downhill backing creates no additional concerns for a tank vehicle beyond those that apply to any commercial vehicle backing downhill

32. A cargo tank carrying a nonhazardous liquid product develops a crack in the upper portion of the tank shell — above the liquid level — during highway transport. No liquid is leaking because the crack is in the vapor space above the product. Is this a concern that requires immediate action?

A. No, because the crack is above the liquid level and no product can leak from a crack in the vapor space under normal conditions

B. No, because nonhazardous liquid tanks are not subject to the same structural integrity standards as hazardous materials tanks

C. Yes, a crack in the tank shell — regardless of its position relative to the liquid level — indicates structural failure that could propagate and lead to a catastrophic rupture, and the driver should stop and report the crack immediately

D. Yes, but only because the crack allows outside contaminants to enter the tank and degrade the product quality

33. A driver operating a loaded smooth bore tank vehicle at highway speed encounters a series of closely spaced speed bumps in a residential area near a delivery location. The speed bumps

are spaced approximately 100 feet apart. What specific handling effect should the driver anticipate?

- A. The speed bumps will have no noticeable effect on the liquid cargo because the bumps generate only vertical forces, not horizontal surge
- B. Each speed bump causes the liquid to receive a vertical impulse — the repeated closely spaced bumps can create a rhythmic vertical sloshing effect that stresses tank fittings, manhole gaskets, and can combine with any braking or steering surge to produce complex and unpredictable forces
- C. The speed bumps will cause the smooth bore tank to resonate at its natural frequency, producing a humming sound but no handling effects
- D. Speed bumps are beneficial for tank vehicles because the vertical jolts help settle the liquid cargo into a more stable configuration

34. A tank vehicle driver is performing a pretrip inspection and notices that the tank's exterior paint is peeling and flaking off in several large patches, exposing bare metal underneath. The exposed metal shows surface rust but no visible pitting or perforation. Is this a concern?

- A. No, because exterior paint is purely cosmetic and has no effect on the tank's structural integrity or regulatory compliance
- B. No, because surface rust on exposed metal is a normal aging characteristic of cargo tanks and does not require any action
- C. Yes, but only because the peeling paint creates an unattractive appearance that could lead to customer complaints
- D. Yes, loss of the protective paint coating allows corrosion to attack the bare metal — while surface rust alone may not be an immediate structural concern, continued exposure will lead to progressive metal loss that could compromise the shell thickness below minimum specifications

35. A loaded tank vehicle is traveling at 55 mph when the driver's mobile phone, which is mounted on the dashboard, falls off its mount and slides under the brake pedal. The driver cannot press the brake pedal fully. What should the driver do?

- A. Gradually reduce speed using engine braking by downshifting, and carefully reach down to retrieve the phone from under the brake pedal only after the vehicle has slowed significantly or stopped — never lean down while traveling at highway speed
- B. Slam on whatever portion of the brake pedal is accessible to stop the vehicle as quickly as possible
- C. Maintain current speed and use the steering wheel to navigate to the shoulder, then retrieve the phone after stopping
- D. Apply the parking brake at highway speed to bring the vehicle to an emergency stop

36. A tank vehicle carrying 5,000 gallons of liquid in a 9,000gallon smooth bore tank approaches an intersection where the traffic light turns yellow. The vehicle is approximately 300 feet from the intersection at 45 mph. The driver estimates the vehicle cannot stop safely before the intersection. What makes this situation particularly challenging for a smooth bore tank at 56 percent capacity?

- A. The 56 percent fill level eliminates all surge effects because the liquid mass is perfectly balanced at this capacity
- B. The vehicle's ABS system is less effective at 56 percent capacity than at full load, reducing braking efficiency by approximately half
- C. The smooth bore tank at this capacity is at the optimal fill level where surge forces are minimal and can be safely ignored
- D. The 56 percent fill level provides extensive room for violent unrestricted forward surge during any braking attempt — if the driver decides to brake, the surge will push the vehicle forward well past the expected stopping point, potentially into the intersection

37. A cargo tank driver discovers during a pretrip inspection that one of the tank's discharge valves appears to be slightly open — the handle is not in the fully closed position. The valve is not actively dripping, but the handle is approximately 15 degrees from the closed position. What should the driver do?

- A. Assume the valve was left in this position intentionally from the last loading operation and proceed without adjustment
- B. Close the valve fully, verify it is no longer dripping, and check whether the previous driver or loading operator may have left it partially open — a partially open valve could vibrate further open during highway transport, leading to a product release
- C. Leave the valve as is because a 15degree offset from closed is within the normal operating tolerance for discharge valves

D. Open the valve fully, then close it firmly, cycling it once to ensure it seats properly before departing

38. A tank vehicle is loaded with a foodgrade liquid in a smooth bore tank. The loading facility operator tells the driver the product should be delivered at a specific temperature range. During the trip, the driver notices the tank has no insulation and the ambient temperature is well above the product's optimal temperature range. What should the driver understand?

A. An uninsulated smooth bore tank provides no thermal protection — the product temperature will gradually equalize with ambient conditions during transport, and the driver should communicate any temperature concern to the carrier and the receiving customer

B. The metal tank shell actually insulates the product better than specialized insulation materials due to metal's natural thermal resistance

C. Foodgrade liquids in smooth bore tanks are immune to ambient temperature effects because the absence of baffles allows natural convective cooling

D. The driver should stop at regular intervals and spray the exterior of the tank with water to cool the product during hotweather transport

39. A loaded tank vehicle approaches a curve with a decreasing radius — the curve tightens as the driver progresses through it. The driver enters at what seems like an appropriate speed for the first part of the curve. Halfway through, the curve becomes much sharper. What makes this road geometry especially dangerous for a tank vehicle?

A. The decreasing radius requires the driver to brake in the curve to reduce speed for the tighter portion — braking in a curve creates simultaneous forward and lateral surge that maximizes rollover risk

B. Decreasingradius curves cause the vehicle's ABS system to malfunction due to the changing steering angle inputs

C. The tightening curve forces the liquid to reverse its lateral surge direction, creating a whipping effect that destabilizes the vehicle

D. Decreasingradius curves are hazardous only for empty tank vehicles because loaded vehicles have sufficient weight to maintain traction through any curve geometry

40. A driver operating a partially loaded (30%) baffled tank vehicle on a rural highway approaches a stop sign at a T-intersection. The driver begins braking approximately 500 feet from the stop sign. Despite applying the brakes early, the driver notices the vehicle is decelerating more slowly than expected and the liquid is surging forward noticeably with each brake pulse. What explains this behavior at only 30 percent capacity in a baffled tank?

A. At 30 percent capacity, the liquid mass is mostly below the baffles' openings, allowing the liquid to pass through with less resistance than at higher fill levels — the baffles are less effective at very low fill levels because less liquid interacts with the baffle surfaces

B. The baffles have broken free from their welds at this low fill level, eliminating all surge reduction capability

C. At 30 percent capacity, the air space above the liquid creates a pneumatic cushion that amplifies surge forces beyond their normal intensity

D. The brake system has automatically reduced braking force because the vehicle's sensors detected the low cargo weight

41. A tank vehicle equipped with a DOT 406 cargo tank has been loaded with 8,000 gallons of gasoline. The driver weighs the vehicle at the terminal scale. The steer axle shows 11,500 pounds, the drive tandem shows 33,800 pounds, and the trailer tandem shows 34,500 pounds. The gross vehicle weight is 79,800 pounds. The federal limit for tandem axles is 34,000 pounds. What is the problem?

A. The gross vehicle weight exceeds the 80,000-pound federal limit and the vehicle cannot legally depart the terminal

B. The steer axle weight exceeds the 12,000-pound federal maximum for single steering axles

C. The trailer tandem at 34,500 pounds exceeds the 34,000-pound federal tandem axle limit — the driver must adjust the load or reposition the tandem axle slider before departing

D. No problem exists because the 34,500-pound reading is within the normal 5 percent tolerance allowed for tandem axle groups

42. A tank vehicle driver is delivering fuel to a retail gas station. The driver connects the delivery hose to the underground tank's fill pipe and begins pumping. After delivering approximately 2,000 gallons, the driver notices fuel beginning to seep up around the fill pipe cap on an adjacent underground tank — a tank the driver is NOT delivering to. What does this likely indicate?

- A. The adjacent underground tank is overfilling from a separate delivery happening simultaneously through a different fill pipe
- B. The underground piping between the two tanks may be crossconnected, and the product being delivered is flowing into the wrong tank, which is already full or nearly full — the driver should stop pumping immediately
- C. The adjacent tank's fill pipe gasket has deteriorated and is leaking groundwater that merely looks like fuel
- D. The adjacent tank is experiencing thermal expansion from rising afternoon temperatures, pushing product up through the fill pipe

43. A tank vehicle has been parked overnight after completing all deliveries. The tank is empty (drained but not cleaned) and still displays FLAMMABLE placards. Early the next morning, the driver performs a pretrip inspection in cold weather (25°F). The driver notices that the pressurevacuum vent on the manhole cover appears to be frozen shut — it does not move when pressed. What concern does this create?

- A. A frozenshut vent is desirable because it prevents cold air from entering the tank and forming ice crystals inside
- B. A frozen vent is only a concern for pressurized tanks like MC 331 — atmosphericpressure tanks like DOT 406 are unaffected
- C. The frozen vent has no operational significance because the tank is empty and will not generate any internal pressure
- D. A frozen vent cannot perform its pressure or vacuum relief function — if the tank is loaded or if temperature changes cause pressure fluctuations, the blocked vent could allow dangerous pressure buildup or vacuum formation

44. A driver operating a loaded tank vehicle at 50 mph on a highway observes a construction warning sign reading "ROAD NARROWS — MERGE LEFT." The left lane narrows and forces all traffic into the right lane. What tankvehiclespecific concern does this lane merge create?

- A. The lane merge requires a steering input to the right, which will cause the liquid to surge to the left — the driver should slow down before the merge point, execute the lane change gradually, and allow the liquid to settle before any further steering corrections

B. Lane merges on highways have no additional effect on tank vehicles compared to any other commercial vehicle type

C. The narrowing lane will scrape the tank's right side against the construction barriers, potentially puncturing the shell

D. The forced merge will trigger the vehicle's electronic stability control system, which will automatically manage the liquid surge

45. A loaded tank vehicle is traveling on a highway at night. The driver's headlights illuminate a large puddle of water covering both lanes ahead — approximately 100 feet long and of unknown depth. What should the driver do?

A. Accelerate to build momentum that will carry the vehicle through the puddle without losing speed

B. Maintain current speed and drive through the puddle because highway puddles are rarely deep enough to affect a heavy commercial vehicle

C. Swerve sharply to the shoulder to avoid the puddle entirely, because water contact with the tank's underside could damage fittings

D. Reduce speed significantly before reaching the puddle to minimize hydroplaning risk — at unknown depth, the puddle could cause traction loss, and a loaded tank vehicle that hydroplanes cannot be controlled

46. A cargo tank is being loaded with a volatile liquid on a warm day. The loading facility's vapor recovery system is connected and functioning. Halfway through loading, the vapor recovery connection comes loose and disconnected vapors begin escaping into the air around the manhole. What should the driver do?

A. Continue loading at the current rate because the vapor recovery system is an environmental compliance feature with no safety function

B. Stop loading immediately, reconnect the vapor recovery system, and verify the connection is secure before resuming — escaped volatile vapors near the manhole and loading area create a fire and explosion hazard

C. Increase the loading flow rate to finish faster, reducing the total time that vapors are being released into the atmosphere

D. Close the manhole cover partially to contain the escaping vapors while the loading continues at the current rate

47. A driver is operating a multicompartment tank vehicle. Compartments 1 and 2 (front) contain diesel fuel, compartment 3 (center) is empty, and compartments 4 and 5 (rear) contain regular gasoline. The driver makes the first delivery, emptying compartments 4 and 5 of gasoline. Now only compartments 1 and 2 have diesel, and compartments 3, 4, and 5 are all empty. What driving adjustment is most important for the remainder of the trip?

- A. The driver should increase speed to compensate for the reduced vehicle weight and maintain the delivery schedule
- B. The driver should not adjust because the remaining load in compartments 1 and 2 provides adequate weight and stability
- C. The driver should request a return to the terminal for rebalancing because the current configuration is illegal under DOT regulations
- D. The driver should reduce speed, increase following distance, and exercise extra caution on curves — the weight is concentrated entirely at the front of the trailer, reducing rear axle traction and creating an unbalanced handling condition

48. A tank vehicle driver is making a fuel delivery at a location where the fill pipe is near a natural gas meter and gas line running along the exterior of the building. What precaution should the driver take regarding this proximity?

- A. The driver should verify there are no gas leaks from the meter or line before beginning the delivery — a natural gas leak near a fuel delivery operation creates an explosion hazard from the combination of flammable fuel vapors and natural gas
- B. Natural gas meters and lines pose no hazard to fuel delivery operations because natural gas and liquid fuel cannot interact chemically
- C. The driver should shut off the building's natural gas supply at the meter before beginning the delivery
- D. The driver should position the delivery hose as far from the gas meter as possible but take no other precautions

49. A driver operating a loaded tank vehicle feels the steering become noticeably lighter — requiring less effort to turn the wheel — compared to the beginning of the trip. The driver has

been making deliveries and the tank is now approximately 40 percent full compared to 95 percent at the start. What explains the lighter steering?

- A. The power steering pump is failing due to the prolonged operation, gradually reducing the hydraulic assistance provided to the steering system
- B. As product was delivered throughout the day, the total vehicle weight decreased and less weight now rests on the front steering axle, reducing the force required to turn the wheels — the driver should be aware that lighter steering also means reduced frontaxle traction
- C. The steering gear box has loosened from road vibration during the day's driving, creating excessive play in the steering mechanism
- D. The front tires have warmed up from highway driving, reducing their rolling resistance and making the steering feel lighter

50. A tank vehicle driver has been operating the same route for five years without any incidents. Today, the driver is hauling a product with a significantly higher density than the usual product — the liquid weighs approximately 12 pounds per gallon instead of the usual 7 pounds per gallon. The tank is loaded to the same volume as always. What critical difference should the driver anticipate?

- A. The heavier product will produce less surge than the lighter product because the increased weight anchors the liquid more firmly inside the tank
- B. No difference — surge behavior is determined by tank geometry and fill level, not by liquid density, so all handling will be identical
- C. The heavier product will reduce the vehicle's center of gravity below the axle line, making the vehicle more stable than with the lighter product
- D. The heavier product raises the center of gravity higher, increases surge forces, and may cause the vehicle to exceed axle weight limits — the driver must verify weights on a scale and adjust driving behavior for the greater mass in motion during braking and turning

Practice Exam 15: Answer Key and Explanations

1. C — Division 5.1 Oxidizer at 1,200 pounds exceeds the 1,001pound Table 2 threshold, requiring OXIDIZER placards. Class 3 Flammable Liquid at exactly 1,000 pounds does not reach the 1,001pound threshold (the requirement is 1,001 or more, not 1,000). However, the combined Table 2 total of 2,200 pounds exceeds 1,001, which also allows DANGEROUS placards as an alternative display option alongside the mandatory OXIDIZER placard.

2. A — A wildfire approaching the highway poses extreme danger to a placarded HazMat vehicle. The driver should slow down, assess the situation, and if the fire is nearing the road, stop well before the fire zone. HazMat vehicles must never be driven through or near active fires — heat, flame, and embers could damage placards, compromise cargo packaging, or ignite flammable materials.

3. D — The "UN" prefix indicates the identification number is internationally recognized by the United Nations Committee of Experts on the Transport of Dangerous Goods. UN numbers are valid for both domestic and international transportation. Materials with "NA" numbers, by contrast, are recognized only within North America.

4. B — Chemical-resistant gloves and safety glasses provide essential protection when handling drums of corrosive material. Even drums that appear dry and sealed may have residue, drips, or contamination on their exterior surfaces from loading or storage. Direct contact with even small amounts of corrosive material can cause chemical burns to skin and severe eye damage.

5. D — A material can present multiple hazards simultaneously. The primary hazard (Division 2.3 Poison Gas) determines the main classification, while subsidiary hazards (Division 5.1 Oxidizer and Class 8 Corrosive) indicate additional dangers. Each subsidiary hazard may require its own label on packages and corresponding subsidiary placard on the vehicle.

6. A — Division 2.3 Poison Gas is Table 1, requiring POISON GAS placards at any quantity — the 100 pounds triggers this automatically. The Class 3 (700 lbs) and Class 8 (400 lbs) do not individually reach the 1,001-pound Table 2 threshold, but their combined total of 1,100 pounds exceeds it, allowing DANGEROUS placards for the Table 2 materials alongside the mandatory POISON GAS placard.

7. C — A gasoline puddle near a vehicle carrying Division 1.3 Explosives creates a serious ignition and fire risk. Gasoline vapors from the puddle could be ignited by any spark or heat source, and a fire near explosives could be catastrophic. The driver should stop fueling, alert the station attendant, and ensure the puddle is cleaned or the vehicle repositioned before continuing.

8. B — The total quantity on shipping papers must be a specific measurement, not an approximation. The exact quantity determines whether placarding thresholds are met, whether reportable quantity designations apply, and what emergency response actions are appropriate. "Approximately 2,000 lbs" introduces ambiguity into calculations that require precision.

9. D — During a thunderstorm, the safest place is inside the vehicle's cab, which provides protection from lightning through its metal frame (acting as a Faraday cage). The driver should continue at reduced speed appropriate for visibility and road conditions. Exiting the cab or stopping on an exposed shoulder increases lightning strike risk to the driver.

10. A — Stacking a heavy pallet of flammable liquid on top of toxic material packages creates a crushing risk. The weight of the upper pallet could damage the lower packages — cracking, denting, or collapsing containers — potentially causing a release that combines both flammable and toxic hazards. The driver should require the shipper to restack with heavier packages on the bottom.

11. B — Emergency response information must be included with or attached to the shipping papers and must be immediately accessible in the same location — the driver's door pouch or on the driver's seat. This ensures responders accessing the shipping papers also find the emergency response information without searching elsewhere in the vehicle.

12. D — An overheating engine near Division 2.1 Flammable Gas creates a fire risk from hot exhaust components, potential coolant or oil leaks onto hot surfaces, and elevated temperatures in the engine compartment. The driver should pull over safely, shut off the engine, and allow it to cool. Continuing to drive with a critically overheating engine compounds the fire risk.

13. A — Suspicious activity near a parked placarded HazMat vehicle should be reported to the carrier and law enforcement with a description of the activity, persons, and vehicles involved. The driver should not confront suspicious individuals — this could escalate the situation. Reporting is a core driver security responsibility under the carrier's HazMat security plan.

14. C — Division 4.3 Dangerous When Wet is a Table 1 material requiring DANGEROUS WHEN WET placards at any quantity — the 500 pounds triggers this automatically. Class 8 Corrosive at 500 pounds does not independently reach the 1,001 pound Table 2 threshold. Only the DANGEROUS WHEN WET placard is required based on the current quantities.

15. B — The emergency response telephone number must provide 24hour, 7day coverage by a knowledgeable person. At 7:00 PM on a Friday, a businesshouronly office number is not being monitored. The driver should not accept the shipment without a compliant 24/7 number — emergency incidents occur at all hours and responders need immediate access to technical guidance.

16. D — Basic maintenance tasks like checking oil and washer fluid at the tractor are generally acceptable. However, the driver should be aware that testing battery connections can produce sparks. For flammable or explosive cargo, sparks near the vehicle should be avoided. The 30foot distance from the trailer provides reasonable separation for nonvolatile cargo, but awareness is key.

17. A — When Column 6 of the Hazardous Materials Table specifies both a primary and subsidiary label, both must be present on each package. Missing subsidiary labels break the communication chain — responders and handlers would be unaware of the corrosive hazard. The driver should refuse transport until the shipper adds the required CORROSIVE subsidiary labels.

18. C — The packing material itself from HazMat packages is generally not a hazardous material. However, the presence of HazMat packing debris raises the question of whether actual product residue is also present. The driver should verify whether any hazardous material residue remains before making a placard decision — removal of placards requires confirmation that the trailer is free of hazardous residue.

19. A — This incident does not meet any mandatory NRC notification trigger. There was no release of hazardous material, no injuries, no deaths, no evacuation, no road closure, and property damage of \$1,500 is far below the \$50,000 threshold. The presence of Division 1.1 Explosives does not automatically elevate every incident to NRCreportable status.

20. C — A strong chemical odor with visible haze inside a trailer carrying corrosive material indicates a likely release of corrosive vapor. Entering the trailer without respiratory protection could cause severe lung damage from inhaling corrosive fumes, and eye contact could cause blindness. The driver should close the doors, move away, and contact the carrier for professional guidance.

21. D — The generator's EPA identification number is a required entry on the Uniform Hazardous Waste Manifest. A blank field means the manifest is incomplete, breaking the chain-of-custody documentation required by RCRA. The driver should not accept the shipment until the generator provides the EPA ID number and the manifest is completed correctly.

22. A — All four placards must be present, correct, and legible at all times during transport. Operating with three placards violates the four-placard requirement regardless of the reason for the missing fourth placard. The driver must stop driving and arrange to obtain a replacement placard before continuing — a DANGEROUS placard cannot substitute for a class-specific placard.

23. C — UN1830 (Sulfuric acid) and UN1831 (Sulfuric acid, fuming) are different materials with different hazard profiles. Fuming sulfuric acid is significantly more dangerous than standard sulfuric acid — it produces toxic fumes and has different emergency response requirements. The shipping papers must accurately identify which material is actually being shipped.

24. B — Passing on a two-lane road requires time in the opposing lane exposed to oncoming traffic. A heavy HazMat vehicle requires more time and distance to complete the pass than a lighter vehicle. A head-on collision involving hazardous materials would produce catastrophically amplified consequences — fire, explosion, toxic release, or environmental contamination — far beyond a standard vehicle collision.

25. D — Detailed questions about cargo contents, destination, and routing from an unknown person could represent a legitimate inquiry or a security threat. The driver should politely decline to share specific details and report the interaction to the carrier. Providing cargo, route, and destination information to strangers compromises the security of the HazMat shipment.

26. A — This single entry triggers multiple regulatory requirements simultaneously. The PG I Inhalation Hazard Zone B classification makes it Table 1, requiring POISON INHALATION HAZARD placards at any quantity. The "RQ" triggers mandatory spill reporting. The "n.o.s." requires the technical name in parentheses. The subsidiary poison hazard requires additional labeling and placarding.

27. B — An impact on the trailer roof from a heavy falling object could damage packages inside the trailer, compromise the trailer's structural integrity, or dislodge cargo from its secured position. Any of these outcomes could lead to a hazardous materials release. The driver should safely pull over and inspect the trailer and cargo for damage before continuing.

28. B — The regulations specify what information shipping papers must contain, not what format or printing method must be used. Handwritten shipping papers that include all required elements — proper shipping name, hazard class, ID number, packing group, quantity, emergency response number, and signed certification — are legally acceptable as long as they are legible and complete.

29. D — An engine approaching the red zone while idling in stopped traffic is a developing concern. The driver should monitor the temperature closely and shut off the engine before it actually overheats. The vehicle's air brake system has stored air pressure sufficient for multiple brake applications even with the engine off, so shutting down does not leave the vehicle without brakes.

30. B — Loud thuds from inside the trailer during a tight Uturn likely indicate that packages have shifted, tipped, or fallen from their stacked position. The centrifugal force and lateral movement during a tight turn can overcome cargo securement if the straps or blocking were insufficient. The driver must stop, inspect the cargo, and verify no packages are damaged or leaking.

31. A — During downhill backing, gravity pulls the liquid toward the front of the tank (the lower end on a downgrade). This shifts weight onto the steering axle, making the steering heavier and more difficult to control in reverse. The driver must use extra caution with both speed control and steering inputs, applying gentle brakes to manage both the vehicle's speed and the liquid's forward surge.

32. C — A crack in the tank shell — even in the vapor space above the liquid — is a structural failure that could propagate under road vibration, thermal cycling, and pressure fluctuations. What is above the liquid line now could be below it after a surge event, sloshing, or if the tank is tilted on a grade. The driver should stop immediately and report the crack for professional evaluation.

33. B — Closely spaced speed bumps create repeated vertical impulses to the liquid cargo. Each bump launches the liquid upward momentarily, and it slams back down as the vehicle descends. The rapid repetition of closely spaced bumps can create rhythmic vertical sloshing that stresses manhole gaskets, tank fittings, and mounting hardware — the driver should reduce speed significantly.

34. D — The exterior paint on a cargo tank serves as a protective barrier against corrosion. When the paint peels and exposes bare metal, atmospheric moisture, road salt, and chemicals attack the unprotected surface. Over time, this corrosion progressively thins the shell wall. If unchecked, the thinning could eventually reduce the shell below minimum thickness specifications, compromising structural integrity.

35. A — An object under the brake pedal preventing full application is a critical emergency. The driver should not lean down to retrieve it at highway speed — taking eyes off the road and hands off the wheel in a loaded tank vehicle could cause a catastrophic accident. Gradually reducing speed through engine braking (downshifting) is the safest approach until the vehicle can be safely stopped.

36. D — At 56 percent capacity in a smooth bore tank, the liquid has extensive room to surge forward during any braking attempt. With no baffles to slow the movement, the entire liquid mass accelerates toward the front of the tank as a single unrestricted wave. This violent forward surge pushes the vehicle well past the expected stopping point, potentially carrying it into the intersection.

37. B — A partially open discharge valve is a significant safety concern. Road vibration during highway transport can gradually vibrate the handle further open, eventually allowing product

to flow through the discharge piping and onto the roadway. The driver should close the valve fully, verify no drip exists, and investigate why it was left partially open.

38. A — An uninsulated smooth bore tank provides no thermal protection for the product. The liquid temperature will gradually equalize with the ambient environment during transport. If the product has specific temperature requirements, the driver should communicate the conditions to the carrier and the receiving customer so they can assess whether the product meets specifications upon delivery.

39. A — A decreasing radius curve becomes tighter as the driver progresses through it. The driver who entered at an appropriate speed for the initial radius may find the speed is too fast for the tighter portion. Braking in the curve to compensate creates simultaneous forward and lateral surge — the most dangerous force combination for rollover. Significant speed reduction before any curve is essential.

40. A — At 30 percent capacity, most of the liquid sits below the baffle openings. The baffles are designed to interact with the liquid as it surges through the openings, but at very low fill levels, less liquid contacts the baffles during surge. This reduces the baffles' effectiveness, allowing more of the liquid to pass through with less resistance than at higher fill levels.

41. C — The trailer tandem at 34,500 pounds exceeds the federal maximum of 34,000 pounds for tandem axle groups. The vehicle cannot legally depart the terminal in this condition. The driver must either reduce the load quantity, redistribute product between compartments, or adjust the trailer's sliding tandem axle position to shift weight from the trailer axles to the drive axles.

42. B — Fuel seeping up around an adjacent fill pipe during a delivery to a different tank strongly suggests the underground piping is crossconnected between the two tanks. The delivered product is flowing into the wrong underground tank, which may be full or nearly full. The driver must stop pumping immediately and investigate with the station operator before any further product is transferred.

43. D — A frozen pressure vacuum vent cannot perform its safety function. If the tank is loaded or if temperature changes cause the liquid to expand or contract, the blocked vent cannot relieve pressure or admit air. This could lead to dangerous overpressure during warming or vacuum damage during cooling. The vent must be thawed and verified functional before operating the vehicle.

44. A — The forced lane merge requires a steering input that will cause the liquid to surge laterally in the opposite direction. The driver should reduce speed before the merge point, execute the lane change gradually to minimize lateral surge, and allow the liquid to settle before making any further steering corrections. Abrupt steering during the merge amplifies surge and rollover risk.

45. D — A large puddle of unknown depth on a highway at night presents a hydroplaning risk. If the tires lose contact with the road surface, the driver loses steering and braking control. For a loaded tank vehicle, loss of control is especially dangerous because liquid surge continues acting on the vehicle even when the tires have no traction. Significant speed reduction before the puddle is essential.

46. B — A disconnected vapor recovery hose during volatile liquid loading allows flammable vapors to escape freely into the loading area. These vapors can accumulate to explosive concentrations near the manhole and around the vehicle. Loading must be stopped immediately, the connection restored and verified, and the area assessed for vapor accumulation before resuming.

47. D — With only compartments 1 and 2 loaded and compartments 3, 4, and 5 empty, all weight is concentrated at the front of the trailer. This creates a severe forward weight bias that overloads the drive axles, underloads the trailer axles, reduces rear traction, and produces an unbalanced handling condition. The driver must reduce speed and increase caution on curves.

48. A — A natural gas leak near a fuel delivery operation creates a dualignitionsource hazard. Natural gas is flammable, and fuel delivery produces flammable vapors. The combination of two flammable gas sources near ignitionproducing equipment dramatically increases explosion risk. The driver should check for gas leaks before beginning the delivery and report any detected leaks.

49. B — As product is delivered throughout the day, the vehicle's total weight decreases and the weight distribution changes. Less weight on the front steering axle means less force is required to turn the wheels, producing the lighter steering feel. The driver should be aware that lighter steering also means reduced frontaxle traction, which affects braking and directional control.

50. D — A product weighing 12 lbs/gal instead of 7 lbs/gal at the same volume produces approximately 71 percent more total weight. This raises the center of gravity higher, increases surge forces during braking and turning, and may push the vehicle over axle or gross weight limits. The driver must weigh the vehicle, verify legal weights, and adjust driving behavior for the significantly greater mass.