PRACTICE EXAM 17: HAZMAT & TANKER SIMULATION (50 QUESTIONS)

HAZMAT SECTION (Questions 1–30)

1. A driver transporting 2,500 pounds of Class 3 Flammable Liquid in drums receives an urgent call from the dispatcher asking the driver to pick up 100 pounds of Division 4.3 Dangerous When Wet material at a nearby warehouse. The driver confirms the segregation table permits these two classes to be loaded together with proper separation. After loading both materials, what placards must be displayed?

A. Only FLAMMABLE placards, because Class 3 has the greater weight and Division 4.3 at 100 pounds is too small to require its own placard

B. Both FLAMMABLE and DANGEROUS WHEN WET placards — Class 3 exceeds the 1,001pound Table 2 threshold and Division 4.3 is Table 1 at any quantity

C. DANGEROUS placards only, because two different hazard classes are present and a single universal placard covers both

D. Only DANGEROUS WHEN WET placards, because Table 1 materials automatically cancel all Table 2 placarding requirements

2. A driver is performing a pretrip inspection on a placarded vehicle. The driver discovers that the vehicle's left rear turn signal bulb is burned out. The brake light on the same fixture still works. Can the driver depart with the HazMat load?

A. Yes, because brake lights are the only lighting requirement that affects the safe transport of hazardous materials

B. Yes, because a single burnedout turn signal on a multiaxle trailer does not constitute an outofservice condition

C. No, all vehicles transporting hazardous materials must have goldcolored turn signals rather than standard amber to enhance visibility

D. A burnedout turn signal is an equipment violation that should be repaired — while it may not prevent departure in all cases, the driver should have it fixed at the earliest safe opportunity because signaling lane changes and turns is essential for safe HazMat transport

3. Under the Hazardous Materials Regulations, what is the shipper required to provide to the carrier when offering a hazardous material for highway transportation?

A. Properly classified, packaged, marked, and labeled packages accompanied by complete shipping papers with all required entries including the emergency response telephone number and the shipper's signed certification

B. Only the proper shipping name and hazard class written on a standard business card attached to each package with a rubber band

C. A verbal description of the material provided to the driver over the phone at the time of pickup, with no written documentation required

D. The material in any available container with the driver responsible for determining the correct classification and applying all markings and labels

4. A driver is hauling a placarded load of hazardous materials through an area where a large water main has broken, flooding the roadway with approximately 6 inches of standing water for a distance of about 200 feet. The driver's cargo includes packages of Division 4.3 Dangerous When Wet material in a dry van trailer. What specific concern does this flooded road section present?

A. The standing water will damage the vehicle's brake drums, reducing braking effectiveness for the remainder of the trip

B. The standing water will corrode the trailer's undercarriage, which may contaminate the hazardous materials packages inside

C. If the trailer's door seals are not watertight, water from the flooded roadway could enter the trailer and contact the Division 4.3 material, triggering a dangerous gasgenerating reaction

D. The standing water will increase the vehicle's weight by absorption into the tire rubber, potentially causing axle weight violations

5. A driver transporting Class 8 Corrosive material in drums discovers during an enroute inspection that one drum has shifted and is now resting at a 45degree angle, leaning against the trailer wall. The drum is not leaking, and its closure is facing sideways rather than upward. What is the primary concern?

A. The shifted drum's label is no longer visible from the standard inspection angle, creating a labeling compliance issue

B. The tilted drum places the corrosive liquid in direct contact with the closure seal from the inside, increasing the probability of leakage — the drum must be uprighted before continuing

C. The shifted drum has changed the trailer's center of gravity, requiring the driver to recalculate axle weights before continuing

D. The drum's tilted position will cause the corrosive liquid to separate into layers, with the most concentrated acid settling to the lowest point

6. A vehicle is loaded with 300 pounds of Division 2.3 Poison Gas (Table 1), 700 pounds of Class 3 Flammable Liquid (Table 2), and 400 pounds of Class 8 Corrosive (Table 2). What placards must be displayed?

A. All three classspecific placards, because carrying three hazard classes automatically triggers individual placarding for each

B. POISON GAS and FLAMMABLE placards only, because the Class 8 material at 400 pounds does not reach any applicable threshold

C. DANGEROUS placards only, because three different classes are present and the DANGEROUS placard covers any multiclass combination

D. POISON GAS placards for the Table 1 material at any quantity — the Table 2 materials (700 + 400 = 1,100 lbs combined) exceed 1,001 pounds, allowing DANGEROUS placards for the Table 2 portion

7. A driver is transporting hazardous materials when the vehicle's engine develops a loud knocking sound. The engine is still running and producing power, but the knocking is unusual and concerning. The driver is approximately 15 miles from the delivery destination. What should the driver do?

A. Pull over at the nearest safe location and shut off the engine — continuing to drive with an engine that may be failing risks a breakdown in an unsafe location, potential fire from engine failure, and loss of vehicle control

B. Continue to the destination because 15 miles is a short distance and most engine knocking is caused by lowoctane fuel

C. Increase speed to reach the destination faster before the engine fails completely, minimizing total exposure time

D. Shift to neutral and coast to save the engine, applying brakes periodically to maintain control of speed

8. A driver reviews shipping papers for a load and notices that one hazardous material entry includes the notation "Marine Pollutant" after the basic description. The entry reads: "Diesel fuel, 3, NA1993, PG III, Marine Pollutant, 8,000 gal." What does the Marine Pollutant designation mean for the driver?

A. The driver must follow a special routing plan that avoids all roads within 1 mile of any river, lake, or coastline

B. The material may only be transported in doublehulled cargo tanks to prevent environmental contamination

C. The designation indicates the material is harmful to aquatic environments if released — a spill near waterways triggers additional environmental response obligations, and the driver should be aware of this heightened environmental sensitivity

D. The Marine Pollutant designation means the material must be loaded at the rear of the vehicle so it can be jettisoned quickly in case of an emergency near water

9. A driver is at a shipper's facility when a dock worker accidentally drops a compressed gas cylinder from a height of about 3 feet. The cylinder lands on its protective valve cap. The cap appears undamaged, and no hissing sound is heard. Should the driver accept this cylinder for transport?

A. The driver should have the shipper inspect the cylinder and valve cap area for damage before accepting it — a dropped cylinder may have sustained internal damage or weakened the valve connection that is not immediately visible

B. Yes, because the protective valve cap absorbed the impact and the absence of hissing confirms no gas is escaping

C. No, any compressed gas cylinder that has been dropped must be destroyed immediately because internal pressure makes all dropped cylinders explosive

D. Yes, as long as the driver places the cylinder in an upright position and monitors it for the first 30 minutes of transport

10. A driver transporting placarded hazardous materials discovers during a fuel stop that one of four placards has been stolen from the vehicle — the mounting bracket is empty. The driver does not have a replacement placard. What must the driver do?

A. Continue driving with three placards and file a theft report with law enforcement at the destination

B. Stop driving and arrange for a replacement placard before continuing — operating with fewer than four placards is a violation regardless of the reason for the missing placard

C. Move the rear placard to the vacant position and continue with three placards covering front, both sides, but no rear

D. Cover the three remaining placards and drive without any placards to avoid the mixedplacard appearance

11. Under the Hazardous Materials Regulations, when must a carrier file a written Hazardous Materials Incident Report on DOT Form 5800.1?

A. Only when the incident results in the death of one or more persons directly caused by the hazardous material release

B. Only when the incident causes property damage exceeding $100,000 and involves a Table 1 material

C. Only when the National Response Center specifically requests a written followup report after the initial telephone notification

D. Within 30 days of discovering any unintentional release of hazardous material during transportation, any undeclared hazardous material, or any structural failure of bulk packaging

12. A driver is transporting a bulk quantity of Class 3 Flammable Liquid in a cargo tank. The identification number UN1203 is displayed on orange panels on each side and each end of the tank. A DOT inspector asks the driver what material UN1203 represents. What is the correct answer?

A. UN1203 is the identification number for gasoline — this number allows emergency responders to look up the specific material in the Emergency Response Guidebook for response procedures

B. UN1203 is the DOT specification number for the cargo tank indicating its construction standard and maximum operating pressure

C. UN1203 is the carrier's fleet identification number assigned to this specific vehicle for tracking and dispatch purposes

D. UN1203 is the shipper's customer account number used for billing and delivery confirmation documentation

13. A vehicle carries 1,000 pounds each of three different Table 2 hazardous materials — Class 3 Flammable Liquid, Class 8 Corrosive, and Division 5.1 Oxidizer. No single class reaches 1,001 pounds. The combined total is 3,000 pounds. What is the correct placarding approach?

A. All three classspecific placards must be displayed because carrying three classes at 1,000 pounds each demonstrates a highhazard load

B. No placards are required because no individual class reaches the 1,001pound threshold and the DANGEROUS placard requires at least 5,000 combined pounds

C. DANGEROUS placards may be used because the combined aggregate of all Table 2 materials exceeds 1,001 pounds while no single class independently reaches the threshold

D. Only FLAMMABLE and CORROSIVE placards are needed because Division 5.1 at exactly 1,000 pounds is exempt from inclusion in the combined calculation

14. A driver transporting hazardous materials parks at a truck stop and walks inside the restaurant to eat. The restaurant is approximately 90 feet from the vehicle. Through the restaurant window, the driver can clearly see the placarded vehicle at all times during the meal. Is the vehicle properly attended?

A. No, because restaurant meals always exceed the maximum permissible time for a driver to be away from a placarded vehicle

B. Yes, the driver is within 100 feet of the vehicle and has it in clear, unobstructed view through the window — this satisfies the attendance requirement

C. No, because the driver must physically touch the vehicle every 15 minutes to demonstrate continuous attendance

D. Yes, but only if the driver completes the meal within 20 minutes — any longer and the attendance requirement lapses automatically

15. A driver is assigned to transport a hazardous material that the driver has never hauled before. The shipping papers show the material is Division 5.2 Organic Peroxide requiring temperature control. The shipping papers include a "control temperature" and an "emergency temperature." The driver does not understand what these temperatures mean. What should the driver do?

A. Ignore the temperature designations because they are relevant only to the shipper's storage facility and have no application during highway transport

B. Set the trailer's refrigeration unit to the average of the two temperatures and proceed with the delivery without further research

C. Ask the dispatcher to explain the temperature requirements, then proceed regardless of the answer because organic peroxides are lowhazard materials

D. Ask the carrier's safety department to explain the temperature control requirements before accepting the load — organic peroxides can undergo dangerous selfaccelerating decomposition if temperature controls are not properly maintained

16. A driver transporting Class 7 Radioactive material discovers during an enroute inspection that a YellowIII package has shifted and is now much closer to the cab wall than when it was originally loaded. The shipping papers show the package has a transport index of 5.0. Why is this shift concerning?

A. The reduced distance between the radioactive package and the driver's cab increases the driver's radiation exposure — the transport index determines the required separation distance, and the shifted package may now be closer than the minimum required

B. The shifted package will interfere with the vehicle's CB radio reception, creating a communication blind spot during the trip

C. The YellowIII label will be obscured by the cab wall, preventing inspectors from reading the transport index from outside the vehicle

D. The package's weight shift has changed the trailer's balance, requiring the driver to reposition other packages to compensate

17. A driver is preparing to transport a load that includes a small quantity of Division 6.2 Infectious Substance. The driver has extensive experience with Division 6.1 Toxic materials but has never handled infectious substances. What unique packaging characteristic distinguishes Division 6.2 from other hazard classes?

A. Division 6.2 packages must be painted bright red to distinguish them from all other hazard classes during visual inspection

B. Division 6.2 packages are always transported in refrigerated containers maintained at exactly 32°F regardless of the specific pathogen

C. Division 6.2 packaging is designed with multiple layers of containment to prevent any breach that could release infectious agents — including leakproof primary containers, absorbent material, and a rigid outer packaging

D. Division 6.2 packages must weigh less than 10 pounds each because heavier packages create a greater splash hazard if dropped

18. A driver transporting a placarded load stops at a rest area. While inspecting the vehicle, the driver notices that a bystander is photographing the shipping papers through the open cab window. The shipping papers are visible in the driver's door pouch. Should the driver be concerned?

A. No, because shipping papers are public safety documents designed to be visible and accessible to anyone who needs them

B. Yes, the driver should close the window or remove the papers from view — while shipping papers must be accessible to the driver and responders, deliberately allowing strangers to photograph detailed cargo information raises security concerns

C. No, because the shipping papers only contain the proper shipping name and no sensitive security information of any kind

D. Yes, but only because the bystander's photography violates the Federal Privacy Act and the driver must report the violation to the TSA

19. A vehicle is carrying 800 pounds of Class 3 Flammable Liquid and 300 pounds of Division 4.1 Flammable Solid. Both are Table 2 materials. The combined total is 1,100 pounds. No single class reaches 1,001 pounds. What placards may the driver display?

A. Both FLAMMABLE and FLAMMABLE SOLID placards, because the vehicle carries two different classes that are both in the "flammable" family

B. FLAMMABLE placards only, because Class 3 has the higher weight and automatically represents all flammablefamily materials

C. No placards are required because neither individual class reaches 1,001 pounds and the combined weight is irrelevant

D. DANGEROUS placards, because two different Table 2 classes are present with a combined total exceeding 1,001 pounds while neither class independently reaches the threshold

20. A driver transporting hazardous materials discovers during a stop that the trailer's rear doors have come partially open — one door is swinging approximately 6 inches ajar. The cargo inside appears undisturbed. What should the driver do before closing the door?

A. Verify that the placards on the rear doors are still properly mounted and have not been damaged by the swinging motion

B. Check whether the shipping papers inside the cab have shifted from their proper location due to the air pressure change from the open door

C. Check the cargo near the doors for any packages that may have shifted toward the opening, verify no packages have fallen out, and ensure all cargo is properly secured before reclosing and latching the doors

D. Photograph the open door for the carrier's incident report and then close the door without inspecting the cargo

21. A driver picks up a hazardous materials shipment at a shipper's facility. The shipper provides complete shipping papers but does not provide placards, saying the carrier always provides its own. The carrier's safety department tells the driver by phone that there are no placards available at the terminal and to "just go without them — we'll get some for the next trip." What should the driver do?

A. Refuse to depart without proper placards — the driver must not transport placarded hazardous materials without the required placards, regardless of instructions from the carrier's management

B. Follow the carrier's instructions because the safety department has the authority to waive placarding requirements

C. Depart without placards but display DANGEROUS placards from a universal placard kit the driver carries personally

D. Cover the trailer with a tarpaulin to conceal the lack of placards and proceed to the destination at reduced speed

22. A shipper offers a driver a load of hazardous materials in packages that are properly marked and labeled. However, the driver notices that several packages show signs of water damage — the cardboard outer packaging is soft, warped, and has visible water stains. The inner containers appear intact. Should the driver accept these packages?

A. Yes, because the inner containers are intact and the outer packaging is merely a protective shell with no regulatory function

B. Yes, as long as the driver reinforces the waterdamaged outer packaging with packing tape before loading

C. No, waterdamaged outer packaging has been structurally weakened and may fail during transport — the packages should be repackaged or replaced by the shipper before the driver accepts them

D. No, but only if the water damage has caused the hazard warning labels to become illegible or detached from the package surface

23. A driver transporting Division 1.1 Explosives is driving on a highway when a severe hailstorm begins. Large hail is striking the vehicle. The driver is concerned about possible damage to the cargo or vehicle. What is the safest action?

A. Continue driving at maximum speed to exit the hail zone as quickly as possible and minimize total exposure time

B. Pull over to a safe location when possible, stop the vehicle, and wait for the hailstorm to pass — then inspect the vehicle and cargo for damage before continuing

C. Accelerate and weave between lanes to reduce the number of hail impacts on any single area of the trailer roof

D. Exit the vehicle and inspect the cargo while the hail is still falling to identify any damage in realtime

24. A driver is reviewing shipping papers and notices that one entry shows a material with Division 2.3 as the hazard class and "Poison Inhalation Hazard" as an additional notation. The driver knows that Division 2.3 is Poison Gas. Why does the entry include both "2.3" and "Poison Inhalation Hazard"?

A. The "Poison Inhalation Hazard" notation is a printing error because all Division 2.3 materials are already understood to be inhalation hazards

B. The two designations are contradictory and indicate the material has been improperly classified by the shipper

C. "Division 2.3" identifies the hazard class while "Poison Inhalation Hazard" is required only for materials that exceed the inhalation toxicity threshold by more than double

D. The "Poison Inhalation Hazard" notation reinforces that the material is toxic by inhalation — for Division 2.3 materials and certain Division 6.1 materials, this notation triggers specific placarding, packaging, and operational requirements

25. A driver transporting hazardous materials is involved in an accident where a small amount of material is released from a damaged package. No one is injured, property damage is under $5,000, no evacuation occurs, and no road closure happens. The driver cleans up the spill using absorbent pads. Must this incident still be reported?

A. Yes, any unintentional release of hazardous material during transportation requires a written report on DOT Form 5800.1 within 30 days, regardless of the quantity released or other consequences

B. No, because none of the immediate NRC notification triggers were met, no written report is required either

C. Yes, but only if the material released was a Table 1 material or had an RQ designation on the shipping papers

D. No, because the driver successfully cleaned up the release, which constitutes a "mitigated incident" exempt from reporting

26. A driver is at a loading dock when the shipper's quality control inspector approaches and says, "We need to add a special marking to these packages before you load them. It'll take about 30 minutes." The driver has been told by the dispatcher to load quickly and depart as soon as possible. What should the driver do?

A. Tell the inspector to apply the markings after loading and the driver will add them en route at the first stop

B. Load the packages without the additional markings and let the carrier's safety department sort out the compliance issue later

C. Wait for the inspector to complete the required markings — if the markings are regulatory requirements, loading unmarked packages creates a violation that the driver would be responsible for during a roadside inspection

D. Ask the dispatcher for permission to load unmarked packages, and if the dispatcher approves, proceed without the markings

27. A driver is transporting a placarded load of hazardous materials on a highway at night. A vehicle behind the driver is tailgating aggressively — following approximately 20 feet behind the trailer at 55 mph. What should the HazMat driver do?

A. Brake suddenly to force the tailgater to back off and maintain a safe following distance

B. Speed up to create more space between the vehicles, even if this means exceeding the posted speed limit by 510 mph

C. Block the tailgater from passing by moving to the left lane and slowing down to force them to change their behavior

D. Maintain a steady speed, avoid sudden maneuvers, signal and move right when safe to let the tailgater pass — a collision from a tailgater into a HazMat trailer could rupture packages and cause a release

28. A driver is transporting hazardous materials through an area experiencing extreme heat — ambient temperatures of 115°F. The driver notices that the metal trailer walls feel extremely hot to the touch. What concern should the driver have about the cargo inside?

A. Extreme heat can raise the temperature of the packages inside the trailer, potentially affecting heatsensitive hazardous materials — materials with low flash points may produce more vapors, temperaturecontrolled materials may exceed their limits, and thermal expansion of liquids in containers may cause pressure buildup

B. Metal trailers reflect heat rather than absorbing it, so the interior temperature is always lower than the exterior wall temperature

C. The hot trailer walls will melt the adhesive on hazard warning labels, causing them to fall off the packages during transport

D. Extreme heat only affects refrigerated trailers because standard dry van trailers have builtin insulation that maintains constant interior temperatures

29. A vehicle is carrying 500 pounds of Division 2.1 Flammable Gas, 400 pounds of Division 5.1 Oxidizer, and 300 pounds of Class 8 Corrosive. All are Table 2 materials. The combined total is 1,200 pounds. No single class reaches 1,001 pounds. Can the driver use DANGEROUS placards?

A. No, because DANGEROUS placards require that at least one class reach 500 pounds individually before the combined calculation applies

B. Yes, DANGEROUS placards may be used because the combined aggregate of all Table 2 materials exceeds 1,001 pounds while no single class independently reaches the threshold

C. No, because DANGEROUS placards may only be used when exactly two Table 2 classes are present — three classes require individual placarding

D. Yes, but only if all three materials are from compatible hazard classes as determined by the segregation table

30. A driver transporting hazardous materials has been on the road for 10 hours. The driver is fatigued but has one remaining delivery approximately 20 minutes away. The driver decides to push through and complete the delivery before stopping to rest. Is this an acceptable decision?

A. Yes, because 20 minutes is a negligible addition to the driving day and the delivery commitment to the customer takes priority

B. Yes, as long as the driver consumes caffeine or energy drinks to maintain alertness for the final 20 minutes

C. No, but the driver should call the customer and explain the situation, asking for permission to arrive late after a rest period

D. No, if the driver has exceeded available driving time under hoursofservice regulations, continuing to drive is illegal and dangerous — fatigued driving with a HazMat load amplifies the consequences of any error

TANKER SECTION (Questions 31–50)

31. A tank vehicle driver is hauling a full load of liquid in a baffled tank at 50 mph. A child's ball rolls into the road approximately 400 feet ahead. The driver immediately begins braking, knowing a child may follow the ball. What must the driver account for regarding stopping distance that a dry van driver would not?

A. The baffled tank eliminates all surge, so the driver's stopping distance is identical to a dry van of the same weight

B. The tank vehicle's air brake system is slower to respond than a dry van's hydraulic brakes, adding reaction time

C. The liquid cargo will surge forward during braking, pushing the vehicle forward and extending the stopping distance beyond the mechanical braking limit — even in a baffled tank, this surge effect is significant during hard braking

D. The tank vehicle's higher ground clearance means the child may pass safely underneath the trailer without the vehicle needing to stop

32. A cargo tank driver completing a delivery discovers that approximately 50 gallons of product remain in the bottom of the tank after the pump has been shut off. The product cannot be pumped out because the suction line does not reach the very lowest point of the tank. What is this unpumpable remainder called, and is it a concern?

A. This remainder is called "heel" or "residual" — it is a normal characteristic of cargo tank design, and the driver should account for it when verifying delivery quantities and understand that this residual product still presents the same hazards as the full load

B. This remainder indicates the pump has failed and must be repaired before the vehicle can return to service

C. This remainder is called "outage" and was intentionally left in the tank by the loading facility as a thermal expansion buffer

D. This remainder indicates the tank has a structural defect creating an abnormal low pocket that traps product

33. A tank vehicle equipped with a smooth bore tank is carrying a load at approximately 80 percent capacity. The driver approaches a highway interchange with a cloverleaf design — a series of tight circular ramps. What makes cloverleaf interchanges particularly challenging for loaded smooth bore tank vehicles?

A. The multiple consecutive curves in a cloverleaf cause the engine to overheat from sustained lowgear operation

B. Cloverleaf ramps are always constructed with negative superelevation, which reduces traction below safe levels

C. The concrete barriers on cloverleaf ramps are positioned too close to the travel lane for the width of a tank vehicle

D. The tight circular ramps create sustained lateral surge throughout each loop — in a smooth bore tank, the liquid presses continuously against the outer wall, maintaining an elevated center of gravity for the entire duration of each circular ramp

34. A tank vehicle driver is performing a pretrip inspection on a DOT 406 petroleum tanker. The driver opens each manhole cover and visually inspects the interior of each compartment. In compartment 3, the driver notices a residual puddle of liquid approximately 2 inches deep on the tank floor. The tank was supposed to be empty and clean. What should the driver do?

A. Load the new product on top of the residual liquid because 2 inches of residual product is within the acceptable tolerance for tank cleaning

B. Report the residual liquid to the carrier — the compartment was not properly cleaned, and the residual product could contaminate the new load or represent an incompatible material from a previous shipment

C. Drain the residual liquid through the discharge valve onto the ground and proceed with loading the new product

D. Close the manhole and skip compartment 3, loading only the other compartments for this trip

35. A loaded tank vehicle is traveling at highway speed when the driver encounters a section of road with deep ruts in both wheel paths. How do the ruts affect the tank vehicle's handling?

A. Ruts improve handling by channeling the tires into a consistent track, providing better directional stability

B. Ruts have no measurable effect on tank vehicle handling because the vehicle's weight keeps the tires firmly on the road surface

C. Ruts can cause the vehicle to sway as the tires alternately catch and release from the rut channels — this lateral movement triggers liquid surge that amplifies the sway, and the driver should reduce speed and maintain a firm grip on the steering wheel

D. Ruts only affect the steering axle and have no interaction with the trailer's suspension or the liquid cargo

36. A driver is loading a cargo tank with gasoline at a petroleum terminal. During loading, the facility's overfill prevention system activates and shuts off product flow. The compartment's manhole sight glass shows the liquid level is well below the manhole opening, and the driver estimates at least 500 gallons of capacity remains. What should the driver do?

A. Stop loading and investigate the reason for the alarm activation — never override the overfill prevention system, because the sensor may have detected a condition the driver cannot visually verify, such as an internal baffle failure or a product flowing into the wrong compartment

B. Reset the overfill prevention system and resume loading at the maximum flow rate to complete the fill

C. Bypass the overfill alarm by disconnecting the sensor lead and completing the loading manually

D. Continue loading through a different compartment's manhole while the alarm is still active on the first compartment

37. A tank vehicle driver is operating a partially loaded (40 percent) smooth bore tank on a highway. The driver needs to pass a slower vehicle and executes a lane change to the left. After completing the pass, the driver returns to the right lane. What surge effect does this double lane change produce?

A. The double lane change produces no surge because the two lateral movements cancel each other out

B. Each lane change causes the liquid to shift laterally — left during the first change, then right during the return — creating a double surge that can produce a rocking motion, especially dangerous at 40 percent capacity where the liquid has maximum room to shift

C. The double lane change causes the liquid to surge forward only, with no lateral component regardless of steering direction

D. The smooth bore tank's aerodynamic shape redirects all surge energy downward during lane changes, stabilizing the vehicle

38. A driver is unloading a cargo tank at a customer facility using a PTOpowered pump. The driver notices the pump's discharge pressure gauge reading is significantly higher than normal for this product. What could this indicate, and what should the driver do?

A. Higher pressure simply means the pump is operating at peak efficiency and the delivery will be completed faster than usual

B. The higher pressure is caused by coolerthannormal product temperature and is a normal seasonal variation

C. The customer's receiving tank must be nearly full, creating backpressure that is reflected in the higher gauge reading

D. Abnormally high discharge pressure could indicate a blockage in the delivery hose or customer's piping, a closed valve downstream, or a receiving tank approaching capacity — the driver should stop pumping and investigate the cause before the excessive pressure ruptures a hose or fitting

39. A tank vehicle driver is approaching a traffic light that has been green for an extended period. The driver is hauling a full load of liquid in a smooth bore tank at 45 mph. What should the driver anticipate about the traffic light?

A. The light may change to yellow soon — the driver should be prepared to begin braking early and gradually, because a smooth bore tank at highway speed requires significantly more stopping distance than a conventional truck and the driver cannot afford to be surprised by a red light

B. The driver should accelerate to pass through the intersection before the light changes, avoiding the need to brake with a full smooth bore load

C. The driver should not adjust behavior based on how long a traffic light has been green, because all traffic lights follow unpredictable timing patterns

D. The driver should change lanes to position for a right turn in case the light changes, because turning is safer than stopping for a smooth bore tank

40. A cargo tank's specification plate shows "DOT 407" as the tank specification. A driver assigned to haul a load of sulfuric acid in this tank checks the shipping papers and confirms the material is Class 8 Corrosive. Is the DOT 407 tank appropriate for this material?

A. No, DOT 407 tanks are designed exclusively for nonhazardous foodgrade products and cannot carry any regulated hazardous material

B. No, because all sulfuric acid shipments require MC 331 highpressure tanks regardless of concentration or quantity

C. DOT 407 tanks are designed for chemical liquids including some corrosives, but the driver should verify that the specific concentration and formulation of sulfuric acid being loaded is compatible with the tank's construction material and any internal lining

D. Yes, DOT 407 tanks are universally compatible with all Class 8 Corrosive materials without any productspecific verification needed

41. A tank vehicle driver is making a delivery to a customer whose fill pipe is located near the building's main entrance, where people regularly walk in and out. The driver is delivering a flammable liquid. What precaution is most important during this delivery?

A. The driver should ask the building manager to temporarily close the main entrance or redirect pedestrian traffic away from the delivery area during the transfer

B. The driver should establish a visible safety perimeter around the delivery area — using cones, caution tape, or barriers — to prevent pedestrians from walking through the area where flammable vapors may be present and where hose connections create trip hazards

C. The driver should post a sign on the building entrance reading "FLAMMABLE DELIVERY IN PROGRESS" and proceed without further precautions

D. No precaution is needed because the delivery hose is a sealed system and no vapors can escape during a properly connected transfer

42. A loaded tank vehicle's right front tire develops a slow leak while the driver is on a highway. The tire pressure monitoring system shows gradual pressure loss. The tire is not yet flat. What is the safest response?

A. Continue driving at reduced speed and monitor the pressure, hoping to reach the next exit before the tire goes completely flat

B. Apply the brakes firmly to stop the vehicle as quickly as possible before the tire loses all pressure

C. Accelerate briefly to build momentum, then coast to the shoulder while the remaining tire pressure provides marginal steering control

D. Gradually reduce speed without sudden braking and carefully navigate to the shoulder or the nearest safe pulloff area — a front tire failure on a loaded tank vehicle can cause sudden loss of steering control

43. A tank vehicle equipped with a multicompartment tank has been partially unloaded. Compartments 1 and 2 (front) are empty. Compartments 3, 4, and 5 (center and rear) are fully loaded. The driver is continuing to the next delivery approximately 100 miles away. During the trip, the driver notices the steering feels lighter than at the start of the day. What explains this change?

A. With the front compartments empty, less weight rests on the front steering axle — lighter weight on the steer axle means less force needed to turn the wheels, producing the lighter steering feel — the driver should also recognize that lighter steer axle weight means reduced front traction

B. The power steering system has developed a leak, gradually reducing hydraulic assistance throughout the day

C. The vehicle's wheel alignment has shifted during the day's deliveries, reducing the steering effort required to maintain direction

D. The tire pressure on the steer axle has increased from road heat, reducing the tire contact patch and making the steering feel lighter

44. A tank vehicle driver has just finished a delivery and is stowing the product hose on the vehicle. While coiling the hose, the driver notices a soft bulge developing near one of the hose couplings. The bulge was not present at the start of the delivery. What should the driver do?

A. Continue using the hose because bulges near couplings are normal and occur during every delivery due to residual product pressure

B. Reinforce the bulge with duct tape and continue using the hose for the remaining deliveries on the route

C. Replace the hose before the next delivery — a developing bulge near a coupling indicates the hose wall is weakening and could rupture under pressure during the next product transfer

D. Drain the hose completely and the bulge will disappear, allowing the hose to be safely reused for future deliveries

45. A tank vehicle driver operating a loaded smooth bore tank feels the vehicle begin to rock sidetoside while traveling on a straight, smooth highway at 55 mph. No crosswind is present and the road surface is even. The rocking begins spontaneously and increases gradually. What is happening and what should the driver do?

A. The vehicle's cruise control system is causing speed fluctuations that trigger the rocking — the driver should disengage cruise control

B. The liquid cargo has entered a sloshing resonance at or near the vehicle's natural roll frequency — the driver should gradually reduce speed to change the resonance conditions and allow the oscillations to dampen before they reach the rollover threshold

C. The trailer's suspension has developed a broken leaf spring that allows one side to bounce higher than the other

D. The vehicle's wheel bearings are failing, causing the axle to wobble and producing the sidetoside rocking sensation

46. A cargo tank is being loaded at a terminal. The loading arm is a bottomloading connection that introduces the product below the liquid surface from the start. Compared to toploading through an open manhole, what safety advantage does this bottomloading configuration provide?

A. Bottom loading is faster than top loading, allowing the terminal to process more vehicles per hour

B. Bottom loading allows the driver to remain in the cab during the entire loading process without any monitoring obligation

C. Bottom loading allows the facility to measure the product more accurately through inline meters that are more precise than tankmounted gauges

D. Bottom loading eliminates splash loading, significantly reducing static electricity generation and flammable vapor production because the product enters below the liquid surface from the first gallon to the last

47. A driver is operating a tank vehicle on a mountain road with alternating upgrades and downgrades. On a steep upgrade, the driver downshifts to maintain speed. At the top of the hill, the road immediately transitions to a steep downgrade. What surge effect occurs at this transition point?

A. At the top of the hill, the liquid — which settled toward the rear during the upgrade — suddenly shifts forward as the vehicle crests and begins the downgrade, creating a surge that adds momentum and accelerates the vehicle at exactly the moment the driver needs to begin controlling speed for the descent

B. The liquid remains stationary at the top of the hill because the transition from upgrade to downgrade creates a momentary equilibrium

C. The liquid splits into two halves — one pressing forward and one pressing backward — creating balanced forces with no net effect

D. The liquid immediately settles to the bottom center of the tank at the hilltop, lowering the center of gravity for the downgrade

48. A driver is performing a pretrip inspection on a cargo tank and discovers that one of the tank's fusible plugs has a visible crack running through the fusible metal element. The fusible plug has not melted or activated. What should the driver do?

A. Continue operating because fusible plugs only activate during fires and a cracked element has no effect during normal transport

B. Apply heatresistant sealant to the cracked fusible element to prevent premature melting during the trip

C. Report the cracked fusible plug to the carrier for replacement — a damaged fusible element may not activate at the correct temperature during a fire, or could activate prematurely, either of which compromises the tank's thermal protection system

D. Remove the cracked fusible plug and cap the opening, because a missing plug is safer than a defective one

49. A loaded tank vehicle approaches a Yintersection where the road splits into two directions. The driver must take the left fork, which requires a gradual left turn at the split point. What surge effect should the driver anticipate?

A. The gradual left turn creates only forward surge, with no lateral component, because Yintersections have wider turning radii than standard intersections

B. The gradual left turn will cause the liquid to shift to the right (outside of the left turn), raising the center of gravity on the right side — the driver should reduce speed before the split and maintain steady speed through the turn

C. Yintersections create a vortex effect inside the tank that spins the liquid clockwise, stabilizing the vehicle through gyroscopic forces

D. The split point creates a brief moment where the liquid surges backward due to the road geometry change, then settles forward as the turn begins

50. A tank vehicle driver has completed all deliveries for the day. The cargo tank is empty (drained but not cleaned — previously carried diesel fuel). The driver is returning to the terminal, a 75mile highway drive. During the return trip, what handling differences should the driver expect compared to the loaded trip earlier in the day?

A. The empty vehicle handles identically to the loaded vehicle because the tank structure provides the same stability characteristics

B. The empty vehicle will stop faster because there is no liquid surge to push the vehicle forward during braking

C. The empty vehicle requires higher tire pressure to compensate for the reduced cargo weight and maintain proper tire contact

D. The empty vehicle is more susceptible to crosswinds, feels lighter and bouncier, has less traction, and may sway more — the driver should reduce speed in windy conditions and anticipate the less stable handling

Practice Exam 17: Answer Key and Explanations

1. B — Class 3 Flammable Liquid at 2,500 pounds exceeds the 1,001-pound Table 2 threshold, requiring FLAMMABLE placards. Division 4.3 Dangerous When Wet is a Table 1 material requiring DANGEROUS WHEN WET placards at any quantity — even the 100 pounds triggers this automatically. Both materials independently trigger their respective placarding requirements, so both must be displayed on all four sides.

2. D — A burned-out turn signal is an equipment violation that impairs the driver's ability to communicate lane changes and turns to other motorists. While it may not constitute an automatic out-of-service condition in all jurisdictions, the driver should have it repaired at the earliest safe opportunity. Safe HazMat transport requires full vehicle functionality to minimize the risk of accidents.

3. A — The shipper must provide properly classified, packaged, marked, and labeled packages accompanied by complete shipping papers. The papers must include the proper shipping name, hazard class, identification number, packing group, quantity, emergency response telephone number, and the shipper's signed certification. This comprehensive package of information is required before the carrier can legally accept the shipment.

4. C — Division 4.3 Dangerous When Wet materials emit flammable or toxic gases upon water contact. If the trailer's door seals are compromised, water from the flooded roadway could splash up and enter the cargo area. Even a small amount of water contacting Division 4.3 packages could trigger a dangerous gas-generating reaction inside the enclosed trailer.

5. B — A drum tilted at 45 degrees with its closure facing sideways places the corrosive liquid in direct hydraulic contact with the closure seal. Closures are designed to resist gravity from above, not sustained lateral liquid pressure. The increased pressure against the seal significantly raises the probability of leakage, and the drum must be uprighted before the driver continues.

6. D — Division 2.3 Poison Gas is Table 1, requiring POISON GAS placards at any quantity — the 300 pounds triggers this automatically. The two Table 2 materials (700 + 400 = 1,100 pounds combined) exceed the 1,001-pound aggregate threshold, allowing DANGEROUS placards for the Table 2 portion. Neither Table 2 class independently reaches 1,001 pounds.

7. A — A loud engine knock indicates a potentially serious mechanical problem — bearing failure, piston damage, or other internal damage that could lead to sudden engine seizure, fire, or loss of vehicle control. Continuing to drive 15 miles risks a complete breakdown in an unsafe location or an engine fire near hazardous cargo. The driver should pull over safely and shut off the engine.

8. C — The Marine Pollutant designation indicates the material is harmful to aquatic environments if released. While the designation does not change basic transportation requirements, the driver should understand that a spill near waterways triggers additional environmental response obligations and can cause significant ecological damage. This heightened environmental sensitivity applies throughout the trip.

9. A — A dropped compressed gas cylinder may have sustained internal damage or weakened the valve connection in ways that are not immediately apparent. Even though the valve cap appears undamaged and no gas is escaping, the impact could have created micro-fractures in the valve stem or weakened the cylinder wall. The shipper should inspect the cylinder before offering it for transport.

10. B — All four placards must be present at all times during transport. A missing placard — regardless of whether it was stolen, fell off, or was damaged — must be replaced before the driver continues. The driver must stop and arrange for a replacement placard. Operating with three placards will result in a citation during any roadside inspection.

11. D — A written Hazardous Materials Incident Report on DOT Form 5800.1 must be filed within 30 days of discovering any unintentional release of hazardous material during transportation, any discovery of undeclared hazardous material, or any structural failure of bulk packaging. This requirement applies regardless of the quantity released or whether the immediate NRC notification triggers were met.

12. A — UN1203 is the internationally recognized identification number for gasoline. This four-digit number allows emergency responders to look up the specific material in the Emergency Response Guidebook and determine the appropriate response procedures, isolation distances, and protective actions. The ID number is the key link between the vehicle display and the response information.

13. C — No single Table 2 class reaches the 1,001-pound threshold independently (1,000 pounds each). However, the combined aggregate of all Table 2 materials is 3,000 pounds, which exceeds 1,001 pounds. DANGEROUS placards may be used when two or more Table 2 classes are present and the combined total meets the threshold while no single class reaches it independently.

14. B — The driver is within 100 feet of the vehicle (90 feet) and has clear, unobstructed view of the vehicle through the restaurant window. These two conditions — proximity within 100 feet and clear line of sight — satisfy the attendance requirement. The driver can see the vehicle at all times and could respond quickly if an emergency developed.

15. D — Division 5.2 Organic Peroxides requiring temperature control are among the most dangerous materials transported. If the temperature exceeds the control temperature, the material begins self-accelerating decomposition that produces heat, toxic gases, and potentially explosive reactions. The driver must understand these requirements before accepting the load — this is not a situation for learning on the job.

16. A — The transport index determines the required separation distance between radioactive packages and occupied spaces such as the driver's cab. A package with a TI of 5.0 that has shifted closer to the cab wall may now be within the prohibited separation zone, increasing the driver's radiation exposure above the allowed limit. The package must be repositioned to restore proper separation.

17. C — Division 6.2 Infectious Substance packaging uses a triple-containment system specifically designed to prevent any breach that could release infectious agents. This includes leak-proof primary containers, sufficient absorbent material to absorb the entire contents if the primary container fails, and a rigid outer packaging that protects the entire assembly during transport.

18. B — While shipping papers must be accessible to the driver and emergency responders, deliberately allowing unknown persons to photograph detailed cargo information raises legitimate security concerns. The driver should close the window or reposition the papers to prevent casual access to cargo details. Security awareness is a core component of the carrier's HazMat security plan.

19. D — Neither Class 3 (800 lbs) nor Division 4.1 (300 lbs) individually reaches the 1,001-pound Table 2 threshold. However, the combined aggregate of both Table 2 classes is 1,100 pounds, exceeding 1,001 pounds. DANGEROUS placards may be used when two or more Table 2 classes are present and the combined total meets the threshold while no single class reaches it independently.

20. C — A partially open rear door means packages near the door may have shifted toward the opening, potentially fallen out onto the roadway, or been exposed to weather. Before closing the door, the driver must check the cargo near the opening for shifted or missing packages, verify that no containers have been damaged, and ensure all cargo is properly secured.

21. A — The driver must refuse to depart without proper placards regardless of instructions from the carrier's management. Transporting placarded hazardous materials without the required placards is a federal violation that the driver will be personally cited for during any

inspection. No dispatcher or safety manager has the authority to waive federal placarding requirements.

22. C — Water-damaged outer packaging has been structurally weakened and may not withstand the stacking, vibration, and impact forces encountered during highway transport. Weakened cardboard can collapse, allowing packages to shift, fall, and potentially rupture. The shipper should re-package the materials in new, undamaged outer packaging before offering them for transport.

23. B — The driver should pull over to a safe location when possible, stop the vehicle, and wait for the hailstorm to pass. Large hail can damage the vehicle, trailer roof, and potentially compromise cargo packaging. After the storm, the driver should inspect the vehicle, trailer, and cargo for any damage before continuing — particularly important with Division 1.1 Explosives.

24. D — The "Poison Inhalation Hazard" notation reinforces that the Division 2.3 material is toxic through inhalation and triggers specific regulatory requirements. For both Division 2.3 and certain Division 6.1 materials, this designation triggers the POISON INHALATION HAZARD placard (rather than the standard POISON placard), specific packaging requirements, and enhanced operational procedures.

25. A — Any unintentional release of hazardous material during transportation requires a written Hazardous Materials Incident Report on DOT Form 5800.1 within 30 days. This requirement applies regardless of the quantity released, whether injuries occurred, or whether the driver successfully cleaned up the spill. The written report is a separate obligation from the immediate NRC notification triggers.

26. C — If the quality control inspector is adding markings required by regulation, loading packages without them creates a violation. The driver should wait for the markings to be completed. If the driver loads and transports packages missing required markings, the driver could be cited during a roadside inspection — dispatcher time pressure does not override regulatory compliance.

27. D — The safest response to a tailgater behind a HazMat vehicle is to maintain steady speed, avoid sudden maneuvers, and signal and move right when safe to allow the tailgater to pass. Sudden braking could cause the tailgater to rear-end the trailer, potentially rupturing packages and causing a HazMat release. Creating space by letting aggressive drivers pass removes the risk.

28. A — Extreme heat penetrates metal trailer walls and raises the temperature of everything inside. Heat-sensitive hazardous materials may be affected — flammable liquids produce more vapor, temperature-controlled materials may exceed their limits, and thermal expansion of liquids in sealed containers can cause pressure buildup. The driver should monitor conditions and consider stopping in shade.

29. B — No single Table 2 class reaches the 1,001-pound threshold independently (500, 400, and 300 pounds). The combined aggregate of all Table 2 materials is 1,200 pounds, exceeding 1,001 pounds. DANGEROUS placards may be used when two or more Table 2 classes are present and the combined total meets the threshold. This applies whether two, three, or more classes are present.

30. D — Hours-of-service regulations apply to all commercial drivers without exception. If the driver has exhausted available driving time, continuing to drive is illegal regardless of how close the destination is. Fatigued driving with a HazMat load amplifies the consequences of any error — slower reactions, impaired judgment, and reduced vehicle control increase the probability and severity of incidents.

31. C — Even in a baffled tank, significant forward surge occurs during hard braking. The liquid masses between each baffle surge forward through the baffle openings, creating sequential impacts that push the vehicle forward beyond the mechanical braking limit. While baffles reduce surge compared to smooth bore, they do not eliminate it — the driver must account for this extended stopping distance.

32. A — "Heel" or "residual" is the normal term for the unpumpable product remaining at the lowest point of the tank below the suction line. This is a standard characteristic of cargo tank design, not a defect. The driver should account for this volume when calculating delivery quantities and understand that the residual product presents the same hazards as the full load.

33. D — Cloverleaf ramps are tight circular curves that create sustained lateral surge throughout each loop. In a smooth bore tank, the liquid presses continuously against the outer wall for the entire duration of the circular ramp, maintaining an elevated center of gravity throughout the maneuver. Multiple consecutive loops compound this effect, making cloverleaf interchanges especially challenging.

34. B — Residual liquid in a compartment that was supposed to be empty and clean indicates the cleaning process was incomplete. The residual product could contaminate the new load, and if the previous product was incompatible with the new load, a dangerous chemical reaction could occur. The driver should report the finding to the carrier for proper cleaning before loading.

35. C — Deep ruts cause the vehicle's tires to alternately catch and release from the rut channels, producing lateral movements that trigger liquid surge inside the tank. The surge amplifies the lateral sway, creating a feedback loop where road-induced movement and liquid response build on each other. The driver should reduce speed and maintain a firm steering grip.

36. A — An overfill prevention system activation should never be overridden. The system may have detected a condition the driver cannot visually verify — such as product flowing into the wrong compartment through a failed internal valve, a sensor detecting liquid in the vapor space, or an actual overfill condition. The driver should stop loading and investigate the cause of the alarm.

37. B — Each lane change shifts the liquid laterally — to the right during the leftward lane change, then to the left during the return to the right lane. At 40 percent capacity, the liquid has maximum room to build momentum with each shift. The double lane change creates a rocking motion that can amplify rapidly in a smooth bore tank, especially at highway speed.

38. D — Abnormally high discharge pressure could indicate a blockage in the delivery line, a closed valve downstream that the driver overlooked, or a receiving tank approaching capacity. Continuing to pump against excessive back-pressure risks rupturing the delivery hose, blowing a hose coupling, or over-pressurizing the customer's receiving system. The driver should stop and investigate immediately.

39. A — A traffic light that has been green for an extended period may change soon. The driver should mentally prepare for a potential yellow light by covering the brake and being ready to begin a gradual deceleration. A smooth bore tank at highway speed requires significantly more stopping distance than a conventional truck, and being surprised by a sudden light change could force a hard brake with violent surge.

40. C — DOT 407 tanks are designed for chemical liquids including some corrosives, typically constructed from stainless steel. However, sulfuric acid compatibility depends on concentration, temperature, and the specific alloy used in the tank. The driver should verify with the carrier that this specific tank is authorized and compatible with the specific sulfuric acid formulation being loaded.

41. B — Establishing a visible safety perimeter around the delivery area protects pedestrians from multiple hazards: flammable vapors that may be present at ground level, trip hazards from hoses and cables, and the danger of being struck by delivery equipment. Cones, caution tape, or barriers provide clear visual warnings that redirect foot traffic away from the active delivery zone.

42. D — A front tire losing pressure on a loaded tank vehicle is a developing emergency. A complete front tire failure causes sudden loss of steering control, which is catastrophic at highway speed with a heavy liquid load. The driver should gradually reduce speed without sudden braking and carefully navigate to the shoulder or nearest safe location before the tire fails completely.

43. A — With compartments 1 and 2 empty and the remaining load concentrated in the center and rear, less weight rests on the front steering axle. Reduced steer axle weight means less force is required to turn the wheels, producing lighter steering. The driver should also recognize that lighter steer axle weight means reduced front-end traction, affecting both braking and directional control.

44. C — A developing bulge near a hose coupling indicates the hose wall is weakening at that point, likely from internal delamination, aging, or damage. Under pump pressure during the next delivery, the weakened area could rupture suddenly, releasing product under force. The hose should be removed from service and replaced before the next product transfer operation.

45. B — Spontaneous side-to-side rocking that increases gradually on a straight, smooth road is sloshing resonance — the liquid is oscillating laterally at or near the vehicle's natural roll frequency. Each oscillation adds energy to the next, and the amplitude can increase rapidly toward the rollover threshold. The driver should gradually reduce speed to change the resonance conditions and allow the oscillations to dampen.

46. D — Bottom loading introduces the product below the liquid surface from the first gallon to the last, completely eliminating splash loading. Splash loading — where liquid falls freely through air — generates significant static electricity through charge separation and produces large quantities of flammable vapor from turbulence. Bottom loading eliminates both of these hazards.

47. A — During the upgrade, the liquid settled toward the rear of the tank. At the hilltop, the road transitions from upgrade to downgrade, and the liquid — still carrying rearward momentum — suddenly shifts forward as gravity now pulls it downhill. This forward surge

adds momentum to the vehicle at exactly the moment the driver needs to begin controlling speed for the descent.

48. C — A fusible plug with a cracked element is a compromised safety device. The crack may cause the element to melt at a temperature other than its design activation point — either prematurely (causing an unnecessary product release) or too late during a fire (failing to provide the intended thermal protection). The plug should be replaced to restore the tank's thermal protection system.

49. B — The gradual left turn at the Y-intersection causes the liquid to shift to the right — the outside of the left turn. This raises the center of gravity on the right side. The driver should reduce speed before reaching the split point and maintain a steady speed through the turn, avoiding braking in the curve that would add forward surge to the existing lateral surge.

50. D — An empty tank vehicle retains its large surface area but has lost nearly all cargo weight. The vehicle acts as a sail in crosswinds, has less tire traction from the reduced weight, feels lighter and bouncier on rough roads, and may sway more during lane changes. The driver should reduce speed in windy conditions and anticipate the less stable, less predictable handling characteristics.