International Federation of Inspection Agencies

Agricultural Superintendent (Inspector) Certification Programme Oils and Fats

Test Questions

English language second edition
March 2016

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Oils and Fats

Test Questions

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Introduction

This document has been produced by the IFIA Agricultural and Vegetable Oils Committee to represent a basic body of knowledge which is expected of an Agricultural Superintendent (Oils and Fats). A sub-set of 100 of these questions will be used to form the examination which must be passed as part of the qualification "Certified Agricultural Superintendent (Oils and Fats)". The pass level is 75%.

Candidates must have completed a minimum of 6 months working as an agricultural superintendent and a specified programme of field training. This is detailed in the IFIA Agricultural Superintendent Training Requirements List and must be fully documented in the employer's internal training records.

The Agricultural Superintendent Certification Programme is an international programme and although details will vary between regions the qualification is international and transferable.

The guidelines governing the Agricultural Superintendent Certification Programme are determined by the IFIA Agricultural and Vegetable Oils Committee together with a Technical Advisory Board which includes representatives from FOSFA and principals.

To obtain a copy of these guidelines or for any other enquiries concerning the programme please visit the IFIA website at www.ifia-federation.org.

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Notes:
Throughout this document:

- ‘oils’ refers to both oils and fats
- The delimiter used is a full stop ie 0.1 (not 0,1)
- Cubic metres = m^3

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SECTION 1 - CALCULATIONS

1.01 **Determine the volume of oil in cubic metres from the data available:**
Temperature: 30°C
Quantity : 600.000 metric tons
Density at 30°C : 0.9000 kg/l

* a. 666.667 m3
b. 690.000 m3
c. 540.000 m3
d. 510.000 m3

1.02 **Is the following tank's capacity sufficient to receive the nominated quantity based on the data below?**
Ship tank no. 8P
Declared capacity: 611.288 m3.
Declared density at 50°C: 0.9000 kg/l
Cargo temperature: 50°C
Nominated quantity to load: 500 metric tons -/+2%

* a. Yes, within the capacity of tank.
b. No, over the capacity of tank
c.
d.

1.03 **Is the following tank's capacity sufficient to receive the nominated quantity based on the data below?**
Ship tank no. 8P
Declared capacity: 611.288 m3.
Declared density at 50°C: 0.9000 kg/l
Cargo temperature: 50°C
Nominated quantity to load: 500 metric tons -/+2%

a. Yes, within the capacity of tank.
* b. No, over the capacity of tank
c.
d.

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1.04 **A shore tank was gauged to 5.385 metres. The calibration table provided the following details:**

Shore tank no. 123

Dip (Metres)	**Volume (m3)**
5.200	**1036.032**
5.300	**1046.772**
5.400	**1057.526**

Which of the following volumes is correct for 5.385 metres?

a. 1046.772 m3
b. 1048.149 m3
* c. 1055.913 m3
d. 1057.526 m3

1.05 **The ship "WISDOM" is trimmed by stern at 2.5m. Ship's tank 8C was gauged to be 5.250m. The following details were obtained from ship's calibration table. What is the correct volume in m^3?**

Trim	**3.00 m**	**2.00 m**
Sounding metres	Volume m^3	Volume m^3
5.500	710.0	790.4
5.400	658.8	739.9
5.300	600.0	680.0
5.200	560.0	640.0
5.100	514.4	580.6

* a. 620.0
b. 600.0
c. 560.0
d. 580.0

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1.06 **Is the following tank suitable to receive the nominated quantity of 900 metric tons of RBD Palm Oil? The details obtained from the supplier and onboard are as follows:**

Ship tank no. 5C
Declared tank capacity: 1000.000 m3
Provided by shipper:
Declared density of oil: 0.9000
Nominated quantity to load: 900 metric tons +2%

* a. No
b. Yes
c.
d.

1.07 **Which of the following are equivalent to a volume of one m^3?**

a. 1 500 litres
b. 2 000 litres
* c. 1 000 litres
d. 10 000 litres

1.08 **What is the density coefficient factor of expansion per 1°C for vegetable oils?**

* a. 0.0006 to 0.0007 kg/l
b. 0.006 to 0.007 kg/l
c. 0.06 to 0.07 kg/l
d. 0.6 to 0.7 kg/l

1.09 **What is the density coefficient factor of expansion per 1°C for fishoils, eg. herring oil?**

* a. 0.0006 to 0.0007 kg/l
b. 0.006 to 0.007 kg/l
c. 0.06 to 0.07 kg/l
d. 0.6 to 0.7 kg/l

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1.10 **What is density of crude palm oil at 35°C if the density at 30°C is 0.9035 kg/l and density coefficient factor is 0.00068 kg/l?**

a. 0.8975 kg/l
b. 0.8995 kg/l
* c. 0.9001 kg/l
d. 0.9070 kg/l

1.11 **Using a density correction factor of 0.00068, what is the density at 19°C of oil having a tested density of 0.9200 kg/l at 20°C?**

* a. 0.9207 kg/l
b. 0.9193 kg/l
c. 0.9200 kg/l
d. Answers a., b. and c. are all wrong

1.12 **Using a density correction factor of 0.0007, what is the density at 22°C of oil having a tested density of 0.9200 kg/l at 20°C?**

a. 0.9214 kg/l
* b. 0.9186 kg/l
c. 0.9200 kg/l
d. Answers a., b. and c. are all wrong

1.13 **Using a density correction factor of 0.00068, what is the density at 51°C of lard (animal fat) having a tested density of 0.9180 g/cm3 at 20°C?**

* a. 0.8969 kg/l
b. 0.9391 kg/l
c. 0.9180 kg/l
d. Answers a., b. and c. are all wrong

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SECTION 2 - DEFINITIONS

2.01 What is ballast?

a. Water in the tanks of a vessel used for laundry and other sanitation purposes
b. Any water on board a vessel in any tank
c. Water that is used to clean cargo tanks
* d. Water that allows the vessel to maintain stability and to control stress and trim

2.02 What is a permanent ballast tank (PBT)?

a. A tank that permanently contains ballast at all times
* b. A tank that is designated to contain only ballast
c. A tank that is used only to maintain a permanent list condition
d. Answers a., b. and c. are all wrong

2.03 The term 'simultaneous cargo operation and ballasting' means?

a. The vessel is transferring ballast from one ballast tank to another
b. The vessel is taking on or pumping off ballast in more than one tank at a time
* c. The vessel is transferring ballast while cargo is being pumped
d. The Chief Officer has been authorized to pump ballast ashore

2.04 How is 'free water' defined?

* a. The layer of water present at the bottom of a vegetable oil or liquid product tank
b. Any water found in the ship's ballast tanks
c. Any water found using the tank gauging equipment
d. Any water that is trim corrected

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2.05 What is a consignment (reference ISO 5555)?

a. An identified quantity of vegetable oil, presumed to have uniform characteristics
b. The quantity which is present on a vessel arriving at the terminal
* c. A quantity of vegetable oil delivered at one time and covered by a particular contract of shipping document
d. The quantity of vegetable oil in one ship tank

2.06 A tank is said to be "gas free" when:

* a. It is fit for human entry without the need for breathing apparatus
b. The vapour has been mechanically removed from the liquid cargo
c. The tank has been purged of all previous cargo
d. The tank is under inert gas conditions

2.07 Which of the following is the correct description of the weight at loading as per FOSFA Contract 53?

a. Shipped weights, as ascertained by a recognized independent surveyor by gauging calibrated ship tanks
* b. Shipped weights, as ascertained by a recognized independent surveyor by gauging either officially calibrated land tank/s or tank barge/s from which the oil is delivered, or by delivery via certified weight scales, or from tank cars which, if not calibrated, shall be weighed before and after loading by single weighing only (front and back axle weighing not allowed)
c. The weight as indicated by the agent, based on terminal weight data
d. The weight as determined from the draft measurements of the ship before and after loading

2.08 What does the acronym "FOSFA" stand for?

a. Foundation of oils, seeds and fats affiliation
* b. Federation of oils, seeds and fats associations limited
c. Family of oils, seeds and fats amalgam
d. Federation of oils, spores and fats association

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2.09 **What is a hydrometer?**

a. A device to measure viscosity
b. A device to measure hydration
* c. A device to measure density
d. A device to measure water flow

2.10 **What is density?**

a. Relative density to water at a standard temperature
b. Volume at a standard temperature
c. Mass at a standard temperature
* d. Ratio of mass divided by volume

2.11 **What is the formula for density?**

a. Length divided by width
b. Volume divided by temperature
* c. Mass divided by volume
d. Mass divided by relative density

2.12 **What is an emulsion?**

a. A heavy viscous liquid
b. A heavy viscous liquid containing a large amount of entrained sediment
* c. An oil & water mixture that does not readily separate
d. A layer of free water located below a heavy viscous vegetable oil

2.13 **The density of a liquid will change as its temperature changes.**

* a. True
b. False
c.
d.

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2.14 What is relative density?

* a. The ratio of the density of a substance to the density of a standard substance under specified conditions
b. The relative ability of a liquid to remain in a liquid state when cooled below standard freeze point
c. A measure of the relative viscosity of a liquid
d. The ratio of a given mass of a liquid when compared with its mass at 60°F

2.15 An emulsion can be defined as:

a. A heavy viscous liquid
b. A heavy viscous liquid containing a large amount of entrained sediment
* c. An oil & water mixture that does not readily separate
d. A layer of free water located below a heavy viscous vegetable oil

2.16 What is the reference gauge height of a shore tank?

a. The distance from the tank top to the tank bottom
b. The distance from the ullage hatch to the datum plate
* c. The distance from reference gauge point to the tank bottom or datum plate as specified in the calibration tables
d. The distance from tank bottom to the ullage hatch

2.17 What is the reference height of a vessel tank?

a. The overall height of the expansion trunk, referred to in the drawings
* b. The distance from the tank bottom or datum plate to the reference gauge point as specified on the tank's capacity table
c. The measured distance from the tank bottom to the reference gauge point
d. The place inside the tank where automatic measurement floats are installed

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2.18 What does an innage, sounding or dip measure?

a. The depth of the empty space above the liquid in a tank
b. The depth of the sediment in a tank
c. The length of an innage tape
* d. The depth of the liquid in a tank

2.19 What does an ullage gauge measure?

* a. The depth of the empty space above the liquid in a tank
b. The height of the free water in a tank
c. The length of an ullage tape
d. The depth of the liquid in a tank

2.20 What is a datum plate?

* a. A level metal plate located directly under the reference gauge point to provide a fixed contact surface from which liquid depth measurement can be made
b. A metal plate located next to the gauging point on a tank indicating the reference gauge height
c. A metal plate located close to the gauging point on a tank listing all the relevant tank data
d. A level metal plate located at the top of a gauge hatch on a tank from which the gauge height is measured

2.21 What has the same meaning as the term 'innage'?

a. Ullage
* b. Sounding
c. Outage
d. Answers a., b. and c. are all wrong

2.22 What is the term for the amount to be paid by the charterer if a vessel is delayed beyond the terms allowed in the Charter Party?

a. Dispatch money
* b. Demurrage
c. Disbursement
d. Penalty money

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2.23 **What is the name of the document which is given as an official receipt for the cargo on board a vessel?**

a. Certificate of Quality
b. Custom declaration
* c. Bill of Lading or 'Mate's Receipt'
d. Charter Party

2.24 **What is a Bill of Lading?**

a. A document issued by the vessel against which freight charges are paid
* b. A document which provides proof of delivery of a cargo on board a vessel
c. A document issued by the terminal showing the quality of the cargo loaded
d. A bill issued by the receiver to the shipper

2.25 **What is a Charter Party?**

a. An annual industry event
b. An agreement between the buyer and seller of a cargo
* c. An agreement between the carrier and the cargo owner
d. An agreement between the superintendent and the cargo owner

2.26 **What is a Charter Party?**

a. A traditional event hosted by the owner of a vessel celebrating the vessel being hired
b. A document specifying the dimensions of a vessel so it can get into the docks to load and unload its cargo
* c. A document outlining the terms and conditions that will apply to the carrier and the charterer while a vessel is on hire
d. A statement of the demurrage to be charged to the charterer

2.27 **How is 'draft' defined?**

* a. The distance from the surface of the water to the keel of the ship
b. The distance from the deck of the ship to the surface of the water
c. The distance from the Plimsoll mark to the bottom of the ship
d. The distance from the Plimsoll mark to the deck

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2.28 How is 'trim' defined?

a. The same as the draft
* b. The difference between the forward and aft draft
c. The average of the forward draft, the amidships draft, and the aft draft
d. The leaning of the vessel to one side

2.29 What term describes a vessel with the forward draft greater than the aft draft?

a. Down by the stern
* b. Trimmed by the head
c. Up at the bow
d. Listing dangerously

2.30 How is 'list' defined?

a. The difference between the starboard draft and the port freeboard
* b. The leaning or inclination of a vessel expressed in degrees to port or starboard
c. The average of the starboard draft and the port draft expressed in degrees port or starboard
d. The difference between the forward and aft draft

2.31 What is 'list'?

a. A piece of paper showing the names of all on board personnel
* b. The inclination or leaning of the vessel to either port or starboard
c. The correction required when the vessel is not on even keel
d. The position of the tank contents when the vessel is down by the head

2.32 What is meant by the term 'trimmed by the head'?

a. The aft draft reading is greater that the forward draft reading
* b. The forward draft reading is greater than the aft draft reading
c. The ship has water in the forepeak tank
d. Trim corrections will always be added to the measured gauge

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2.33 What is meant by the term 'trimmed by the stern'?

* a. The aft draft reading is greater that the forward draft reading
b. The forward draft reading is greater than the aft draft reading
c. The ship has water in the aft peak tank
d. Trim corrections will always be subtracted from the measured gauge

2.34 MARPOL is the International Convention for the Prevention of Pollution from which of the following?

a. Cargoes
* b. Ships
c. Marine terminals
d. Slops

2.35 MARPOL requires ships carrying oils and fats to have a cargo record book to record all operations relating to which of the following?

a. Loading or unloading of cargo
b. Internal transfer of cargo
c. Cleaning of cargo tanks
* d. Answers a., b. and c. are all correct

2.36 What is MARPOL?

a. The Marine Anti-roll Procedure Law
b. The Procedure for the Marking of Agricultural Registered Products over Limitations
* c. The International Convention for the Prevention of Pollution from Ships
d. The Marine Agricultural Pollution Law

2.37 What does a MARPOL cargo record book record?

a. Loading or unloading of cargo
b. Internal transfer of cargo
c. Cleaning of cargo tanks
* d. Answers a., b. and c. are all correct

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2.38 **The breakdown of fats to fatty acids promoted by the presence of water is called which of the following?**

a. Hydrostatics
b. Hydrokinesis
* c. Hydrolysis
d. Hydrogenisation

2.39 **Which of the following metals will greatly accelerate the oxidation of oils and fats and must therefore be excluded from contact at all times?**

a. Chromium
b. Aluminium
* c. Copper
d. Lead

2.40 **Oxidation of the cargo is greatly reduced by which of the following?**

a. Limiting contact with air
b. Lowering cargo temperature
c. Raising the cargo temperature
* d. Answers a. and b. are correct

2.41 **Hydrolysis is the breakdown of fats to fatty acids promoted by the presence of water.**

* a. True
b. False
c.
d.

2.42 **Spheres, cylinders or articulated cones made of plastic or rubber compounds, to be propelled through pipelines to empty contents or separate products, are called:**

a. Pistons
b. Plugs
c. Bulls
* d. Pigs

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2.43 **What is ROB?**

a. The wedge shaped volume of cargo remaining in a tank after discharge
b. The non-liquid cargo remaining in a tank after discharge
c. The cargo that adheres to the internal vertical surfaces of a tank after it has been emptied
* d. Answers a., b. and c. are all correct. ROB can be the sum of all or some of the above

2.44 **What is the name given to the mixture of oil, tank washings, water and sediment collected in a designated ship's tank?**

a. Polluted oil
b. Merchantable oil
* c. Slops
d. Hazardous waste

2.45 **"Stripping" is a term used when:**

a. Purging cargo vapours with air or inert gas
b. Physically mopping up cargo residues from a tank
* c. Pumping out the last residues from a tank
d. Removing the solid residues sometimes found after tank cleaning

2.46 **Animal derived fats include:**

a. Lard
b. Herring Oil
c. Cod Liver Oil
* d. All of the above

2.47 **UCOME means:**

a. Uniform Canola Oil Methyl Ester
b. Used Crude Oil Modified & Extracted
c. Utilized Canola Oil Mixed & Extracted
* d. Used Cooking Oils Methyl Ester

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2.48 Typical solidification point for animal fats in most cases is:

a. 0°C - 15°
b. 15°C - 30°C
* c. 30°C - 45°C
d. 45° - 60 °C

2.49 The definition of UCO is the following:

* a. Used Cooking Oil
b. Unsaturated Crude Olive oil
c. Utilized Canola Oil
d. Usage & Commingling of Oils

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SECTION 3 - LOSS CONTROL AND CONTAMINATION

3.01 Does a superintendent have the authority to stop a loading operation if he is not satisfied with any aspect of the process?

* a. No. Only the ship's officer and the shore installation personnel have that authority
b. Yes, if he detects something wrong. If he does not stop the loading, he might be held responsible
c.
d.

3.02 Can a superintendent recommend or insist on a particular ship tank cleaning procedure?

a. Yes, as a professional he should be able to give an accurate advice
* b. No, this is the responsibility of the vessel
c.
d.

3.03 Can a superintendent open and close valves of a shore or ship line during his independent inspection/checking?

* a. No, a superintendent should never physically close or open valves
b. Yes, because if a valve is not closed immediately by the superintendent, he might be held responsible for the cargo spilled
c.
d.

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3.04 **A superintendent has been appointed by the same principal for the loading supervision of a vessel in 2 ports of loading. In order to save time, he has been asked to inspect all ship tanks at the first port of loading or anchorage. What is the correct procedure?**

* a. A superintendent can inspect ship tanks at any place or any port. However certificates should be marked as valid only at time and place of inspection and final approval for loading is subject to re-inspection when the vessel berths at the second port.
b. The superintendent should not agree because many things can happen to the tanks during the voyage to the second port of loading
c. The tanks only need to be inspected once and this can be done at the first port
d. Inspect all the tanks and seal the valves to those tanks which are to be loaded at the second port

3.05 **You have been appointed to inspect and certify ship tanks as being suitable for carriage of refined soyabean oil, no other details have been given. What do you do?**

a. As usual, inspect the tanks for cleanliness and ask the Captain about previous cargoes
* b. Contact the principal for further clarification. The suitability of ship tanks for carriage of oil is dependent on the contract which may include details such as tank coating requirements
c. Insist that the ship performs a full tank wash procedure
d. Inspect the tanks thoroughly and carry out a wall wash test to confirm cleanliness

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3.06 **You are inspecting ship tanks for shipment to Europe of refined vegetable oil for direct human consumption. Which of the following shall apply with respect to the tanks and previous cargoes requirement?**

* a. Tanks must be stainless steel or lined with epoxy or its technical equivalent and last 3 previous cargoes must be foodstuff
b. Tanks must be stainless steel only and 3 previous cargoes must be non leaded products
c. Tanks must be stainless steel or lined with epoxy or equivalent lined and the previous cargo must have been food grade
d. Tanks must be stainless steel or lined with epoxy or its technical equivalent and last 2 previous cargoes must be foodstuff

3.07 **Having reviewed the table below, which ship tank or tanks meet the requirements of optional FOSFA clauses AS 9 and EU 1?**

Tank No	Coating	Last cargo	2nd last	3rd last	4th last
1C	**Stainless Steel**	**Ballast Water**	**Styrene Monomer**	**Styrene Monomer**	**Styrene Monomer**
2P	**Epoxy**	**Molasses**	**Paraffin Wax**	**Styrene Monomer**	**Styrene Monomer**
3C	**Zinc Silicate**	**Molasses**	**Animal Fat**	**Styrene Monomer**	**Styrene Monomer**
4P	**Epoxy**	**Crude Palm oil**	**Crude Palm Oil**	**Animal Fat**	**Crude Palm Oil**
5C	**Epoxy**	**Molasses**	**Animal fat**	**Styrene Monomer**	**Styrene Monomer**

* a. Tanks 3C and 4P only
b. Tank 3C only
c. Tank 4P only
d. No tanks meet the requirements

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3.08 **Having reviewed the table below, which ship tank or tanks meet the requirements of optional FOSFA clauses AS 9 and EU 2?**

Tank No	Coating	Last cargo	2nd last	3rd last	4th last
1C	**Stainless Steel**	**Ballast Water**	**Styrene Monomer**	**Styrene Monomer**	**Styrene Monomer**
2P	**Epoxy**	**Molasses**	**Paraffin Wax**	**Styrene Monomer**	**Styrene Monomer**
3C	**Zinc Silicate**	**Molasses**	**Animal Fat**	**Styrene Monomer**	**Styrene Monomer**
4P	**Epoxy**	**Crude Palm oil**	**Crude Palm Oil**	**Animal Fat**	**Crude Palm Oil**
5C	**Epoxy**	**Molasses**	**Animal fat**	**Styrene Monomer**	**Styrene Monomer**

* a. Tank 4P only
b. Tanks 3C and 4P only
c. Tank 3C only
d. No tanks meet the requirements

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3.09 **Which of the following is the correct FOSFA restriction concerning previous cargoes?**

* a. Leaded products shall not be carried as the three previous cargoes: Ethylene Dichloride and Styrene Monomer shall not be carried as the three previous cargoes for organic coated tanks, or as the last cargo for stainless steel and inorganic coated tanks

b. Leaded products can be carried as one of three previous cargoes: Ethylene Dichloride and Styrene Monomer shall not be carried as the last cargo for organic coated tanks and stainless steel and inorganic coated tanks

c. Leaded products shall not be carried as the last previous cargo: Ethylene Dichloride and Styrene Monomer shall not be carried as the last previous cargoes for organic coated tanks, or as the last previous cargo for stainless steel and inorganic coated tanks.

d. Answers a., b. and c. are all wrong

3.10 **Should principals be contacted to find out whether the FOSFA Acceptable Previous Cargo List or the Banned Previous Cargo List should be used?**

a. No

* b. Yes

c.

d.

3.11 **Prior to Inspection, the superintendent checks from the ship's log book the last cargoes carried by the vessel. Which of the following documents must also be completed?**

a. FOSFA list of acceptable previous cargoes

b. FOSFA list of banned previous cargoes

* c. FOSFA Combined Master's Certificate

d. Answers a., b. and c. are all correct

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3.12 You are sent to inspect a vessel's tanks prior loading cargo. Your principal has informed you that the last cargo carried in the tank was NOT on the FOSFA banned list. However you discover that the last cargo carried by the vessel DOES appear on the FOSFA banned list. What should you do?

* a. Reject the tanks and contact your principal for instructions
b. Contact your office for advice
c. Use your own judgment
d. Reject the tank(s)

3.13 Where can the latest version of the FOSFA banned and acceptable lists be found?

a. The IMO website
* b. The FOSFA website
c. The IFIA website
d. They are not on the web

3.14 According to FOSFA Rules which of the following products should not have been carried by the vessel as its previous cargo if you want to load vegetable oils?

a. Ethylene Dichloride
b. Styrene Monomer
c. Leaded products
* d. Answers a., b. and c. are all correct

3.15 Can a superintendent recommend the cleaning method to be used for the ship's tanks?

a. Yes
* b. No
c.
d.

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3.16 **A vessel carried out tank cleaning and offered tanks for inspection. Prior to entering tanks the superintendent noticed that the tanks were not adequately gas free. Is the following statement true or false? 'To avoid delays the superintendent should certify tanks clean on the basis of an inspection carried out from deck level.'**

a. True
* b. False
c.
d.

3.17 **Whose responsibility is it to advise the superintendent of the type of contract (ie rules for acceptable list or banned list) that is to be followed?**

a. The ship's captain
b. The ship's agent
* c. The superintendent's principal
d. The Port State Authority

3.18 **Who issues and signs the Combined Master Certificate?**

* a. Master or Chief Officer of Vessel
b. Master or Chief Officer of Vessel and the Surveyors
c. The port authorities
d. The local customs representative

3.19 **The Combined Master Certificate states the previous 3 cargoes transported by each tank and the method of cleaning after the last cargo.**

* a. True
b. False
c.
d.

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3.20 Who issues the FOSFA certificate of ship's compliance, cleanliness and suitability of ship's tanks, and on what basis?

a. The superintendent on basis of information from the log book and his own findings
* b. The superintendent on the basis of his own findings and upon obtaining the FOSFA Combined Master's Certificate complying with the requirements given by principal
c. The Master or Chief Officer
d. The Master or Chief Officer, countersigned by the superintendent

3.21 Who issues the FOSFA certificate of ship's compliance, cleanliness and suitability of ship's tanks and on what basis?

a. The Master on the basis of last three cargoes carried in tanks and tank cleaning method adopted by vessel
* b. The superintendent on the basis of his own findings and upon obtaining the FOSFA Combined Master's Certificate complying with the requirements given by principal
c. The shipper
d. Answers a. and b. are correct

3.22 Survey reports for Combined Master's Certificates are issued on which of the following?

a. Superintendent's company standard formats
* b. FOSFA prescribed report form
c. A statement signed by the Master of the vessel that they comply with the FOFSA Combined Master's Certificate
d. Answers a., b. and c. are all correct

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3.23 **Under FOSFA Contract 53, what should be done in the event of a disagreement between sellers' and buyers' representatives on the question of litre weight in air?**

* a. Sealed samples shall be submitted to an analyst in membership of FOFSA whose decision shall be final
b. The mean of their two results shall be final
c. Sealed samples shall be submitted to an analyst who is accredited according to the ISO 17025 norm for a new analysis.
d. Sealed samples shall be submitted to an analyst in membership of the Federation and represented in the Oils and Fats Section, the mean of the 3 results obtained will be the final result.

3.24 **Under FOSFA Contract 80 (sampling and analysis) what should happen if either party fails to appoint a representative ?**

* a. The samples drawn by the representative present shall be the valid samples for the purposes of analysis and/or arbitration
b. The superintendent present must appoint another superintendent to represent the other party
c. The party who did not appoint a superintendent will have no rights if going to arbitration
d. All of the above are possible actions

3.25 **Do all samples drawn under the terms of the contract and delivered to the FOSFA analyst/s become the absolute property of the analyst?**

* a. Yes
b. No
c.
d.

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3.26 Is the use of a FOSFA member superintendent mandatory under FOSFA contracts?

a. Yes. As per standard FOSFA contract all shipments under FOSFA must be surveyed by a FOSFA member superintendent only, irrespective of any other regulation
* b. No. If the contract or national laws or regulations require the use of governmental or other agencies not recognized by FOSFA International, or if no member superintendent is available for the port/s concerned
c.
d.

3.27 When oils are imported into the European Union under a FOSFA contract, which of the following regulations must be complied with?

a. The IMO regulations
b. The FOSFA rules
c. The EU regulations
* d. Answers a., b. and c. are all correct

3.28 Which of the following is correct in respect of internal tank fittings?

a. Copper or copper alloys are allowed
* b. Copper or copper alloys are not allowed
c. Copper is allowed. Copper alloys are not allowed
d. Copper is not allowed. Copper alloys are allowed

3.29 Should heating coils of vessel tanks be made of stainless steel only?

* a. Yes
b. No
c.
d.

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3.30 **Are tanks coated with zinc silicate acceptable for crude vegetable oils?**

* a. Yes, if the acid value of the oil is equal to or below 1%
b. Not acceptable at any time
c.
d.

3.31 **Which of the following is true in relation to sounding tapes?**

a. Copper tapes are to be used
* b. Steel tapes are to be used
c. Tapes with copper plunger are to be used
d. All of the above can be used

3.32 **Are mercury in glass thermometers permitted inside tanks containing oils and fats'?**

* a. No
b. Yes
c.
d.

3.33 **If a tank has heating coils containing thermal heating fluid, can the tank be used for international trade?**

a. Yes
* b. No
c.
d.

3.34 **Which of the following products are not acceptable as previous cargos for a vegetable oil cargo if the FOSFA acceptable list is applicable ?**

a. Fish oil
* b. Tall oil
c. Diary products
d. Lecithin

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SECTION 4 - MARINE MEASUREMENT

4.01 What is the first thing you must do when you board a marine vessel?

* a. Report to the officer on duty
b. Have the tanks open, ready to gauge and sample
c. Always take samples first
d. Always take gauges first

4.02 When you board a vessel, what is the first thing you do?

a. Start sampling of cargo
b. Check to see if the inert gas system is on
* c. Report to the officer in charge on the vessel
d. Start taking temperatures

4.03 The responsibility for the use of appropriate measurement equipment and the correct sampling equipment when on board the marine vessel lies with?

* a. The superintendent
b. The inspection company that the superintendent works for
c. The vessel
d. The inspection company's principal

4.04 The Master does not allow you to carry out manual measurement of cargo tanks as per the instructions you have been given. What should you do?

a. Contact your principals immediately, via your supervisor if appropriate
b. Issue a letter of protest to the vessel
c. Carry out tank measurements as per Master's instruction
* d. Answers a, b and c are all correct

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4.05 **Is the holding of a key meeting prior to an inspection required in order to comply with industry best practice?**

* a. Yes
b. No
c.
d.

4.06 **What is the preferred device for taking temperatures on a vessel?**

a. A mercury-in-glass thermometer in a cup-case assembly
b. An in-line temperature probe
c. An on-board radar system
* d. A portable electronic thermometer

4.07 **When portable electronic gauging equipment is used on board a marine vessel, which of the following considerations needs to be addressed?**

a. The equipment used must securely fit the vapor control valve
b. The vessel's tank capacity tables should accommodate the vapor control valve location and reference height
c. The equipment should be grounded
* d. Answers a., b. and c. are all correct

4.08 **You are sent to inspect a vessel discharge under closed gauging conditions and find that the valve adapters on board are not compatible with your electronic gauging equipment. What should you do?**

a. Contact your principal for instructions
b. Use the ship's gauging equipment
* c. Use the ship's gauging equipment but only after verifying this against your equipment and recording the results
d. Use a manual tape and open gauging

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4.09 If you gauge a vessel in a heavy swell, industry best practice recommends that the minimum number of measurements per tank should be?

a. One
b. Until you get two identical readings
c. Three and use the average
* d. At least five, taken over the period of the motion, recorded and then averaged

4.10 If the vessel is at an exposed berth and rolling such that the cargo in the tank is moving, the minimum number of gauges recommended and in line with good practice is:

a. One
b. Two
c. Three
* d. Five

4.11 When a vessel is not on an even keel, what should be used to correct tank measurements?

a. Volume correction tables or volume correction calculations
* b. Trim correction tables or trim calculations
c. Weight correction tables or weight correction calculations
d. Draft correction tables or draft correction calculations

4.12 When measuring cargo what is the main reason for taking draft readings on vessels?

a. To be used at the discharge port in case of a cargo variance
* b. To enable calculation of trim or list corrections if needed
c. To compare with draft readings at the discharge port
d. To ensure adequate cargo drainage

4.13 What should trim corrections be applied to?

a. Only the cargo remaining on board (ROB)
b. Only the quantity on board prior to loading (OBQ)
c. Any liquid material
* d. Any liquid material that is touching all four tank bulkheads

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4.14 **Which is the most accurate way of measuring a vessel's list (to either port or starboard)?**

a. Asking the Chief Mate
b. Reading the clinometer
* c. By comparing the port and starboard amidships draft marks
d. Observe the foremast while standing amidships

4.15 **The trim of a vessel will have no effect on the detection of free water.**

a. True
* b. False
c.
d.

4.16 **Which of the following conditions must be present for trim corrections to be applied?**

* a. Tank contents must touch all four bulkheads
b. Tank contents must be non liquid
c. Tank contents must not contact the forward bulkhead
d. Answers a. and b. are correct

4.17 **What is the purpose of ballast?**

a. To keep the cargo warm
b. To segregate cargoes
c. To reduce the ship's fuel consumption
* d. To maintain the vessel's stability, trim, and to control vessel stress

4.18 **What is 'freeboard' on a vessel?**

* a. The distance from the waterline to the vessel's deck level
b. The distance from the waterline to the vessel's keel
c. The time when local Customs officials permit others to board the vessel
d. The time of day that lay time begins according to the Charter Party

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4.19 Using the Imperial system of measurement, what size are draft mark numbers?

a. 12 inches high
b. 9 inches high
* c. 6 inches high
d. 3 inches high

4.20 Using the Imperial system of measurement, how far apart are draft mark numbers?

a. 12 inches
b. 9 inches
* c. 6 inches
d. 3 inches

4.21 What information is determined from draft readings?

a. The depth of the vessel in the water
b. The trim and list of the vessel
c. The displacement weight of the vessel
* d. Answers a., b. and c. are all correct

4.22 When taking a draft reading which is in metric units, what is the distance between each number?

a. 3 centimetres
b. 5 centimetres
c. 12 centimetres
* d. 10 centimetres

4.23 Using the metric system of measurement, what size are draft mark numbers?

a. 3 centimetres
b. 5 centimetres
c. 12 centimetres
* d. 10 centimetres

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4.24 **What must be determined at a pre-loading tank inspection key meeting between the vessel, shore and the superintendent(s)?**

a. Tank number, tank capacity, intended cargo volume and loading sequence
b. The last three cargoes and method of tank cleaning
c. The contents of adjacent tanks
* d. Information a., b. and c. must all be determined

4.25 **A visual inspection at 'deck level' is the most effective form of tank inspection.**

a. True
* b. False
c.
d.

4.26 **Who is responsible for ensuring that the cargo on a vessel is only loaded into tanks with compatible surfaces or coatings?**

a. The superintendent
b. The shipper of the cargo
* c. The vessel's personnel
d. The terminal personnel

4.27 **Why should you never break blisters in a tank coating and never disturb piles of debris on a tank floor when performing an internal tank inspection?**

a. The tank atmosphere may be adversely affected
b. You may come into contact with potentially dangerous, unknown material
c. It is the responsibility of vessels' personnel to remove debris and prepare the tank surface before the tank is loaded
* d. Answers a., b. and c. are all correct

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4.28 **To comply with FOSFA requirements for a coated tank which is to be loaded with oils and fats, the mild steel exposure should be:**

a. Less than 15%
b. Less than 10%
c. Less than 5%
* d. Minimal

4.29 **According to FOSFA requirements, in all cases, what is the minimum fill level by volume of the previous cargo in the tank?**

a. 0.8
* b. 0.6
c. 0.5
d. 0.2

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SECTION 5 - SAFETY

5.01 What is the minimum personal protective equipment required when sampling vegetable oils, fats, lards and greases?

a. Gloves, respirator, hard hat and SCBA (self contained breathing apparatus)
* b. Gloves, coveralls,eye protection, hard-hat and safety shoes
c. Gloves, face-shield and sun glasses
d. Gloves, uniform and SCBA

5.02 Which of the following safety equipment is required on every job?

a. Filter-type respirator
b. SCBA (self contained breathing apparatus)
* c. Hard hat, protective gloves, coveralls, safety shoes and eye protection
d. Fire resistant clothing

5.03 When inspecting vegetable oils and fats all portable electronic equipment must be _____ before use?

a. Checked
b. Cleaned
c. Calibrated
* d. Answers a., b. and c. are all correct

5.04 When inspecting ethanol all portable electronic equipment must be _____ before use?

a. Checked and calibrated
b. Cleaned
c. Earthed (grounded)
* d. Answers a., b. and c. are all correct

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5.05 The most important feature of a hard hat, when worn, is the distance between the shell and the wearer's head.

* a. True
b. False
c.
d.

5.06 Why is it good practice to wear gloves while sampling?

a. So that the sample is not contaminated
b. To prevent your hands becoming dirty
c. To prevent oils being absorbed through your skin
* d. Answers a., b. and c. are all correct

5.07 What does an explosimeter measure?

a. The amount of oxygen in a space
b. Whether a space is safe for entry
* c. Whether or not there is an explosive atmosphere in a space
d. The flash point of a gas mixture

5.08 What is the principal limitation of a filter or cartridge respirator?

* a. It does not supply oxygen
b. The face piece tends to fog up
c. Replacement cartridges are expensive
d. They restrict peripheral vision

5.09 When gauging a tank of ethanol that is emitting vapors, where should you position yourself?

a. Up-wind of the gauge hatch
* b. The wind at your left or right side
c. The wind in your face
d. Answers a. or b. are correct

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5.10 When lifting anything heavy, which muscles should take most of the weight?

a. Upper arm muscles
* b. Leg muscles
c. Back muscles
d. Answers a., b. and c. are all correct, to distribute the load equally

5.11 When are superintendents permitted to operate valves on board vessels?

a. When accompanied by an authorized person on board
b. When no-one else is around to do it
c. When the vessel's staff are too busy to do it themselves
* d. Superintendents must not operate vessel valves

5.12 What should be your first reaction to any serious injury accident?

a. To protect the injured person, without risk to yourself, from exposure to further injury
* b. Raise the alarm to call for help
c. To render First Aid
d. To report immediately to the person's supervisor

5.13 The responsibility for a superintendent's compliance with the safety regulations in any terminal rests with whom?

a. The terminal staff
b. The terminal's safety officer
* c. The superintendent
d. The superintendent's manager

5.14 When entering a ships tank there is a strong odor. What does this indicate?

a. Strong odours are not unusual and can be ignored
b. That the vapor concentration is low
c. That the vapor concentration is high
* d. There may be a problem and further investigations should be undertaken prior to tank entry

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5.15 When loading ethanol or FAME, why should pumping to the tanks being gauged and sampled be suspended for 30 minutes before beginning the work?

a. To allow any gas to dissipate
* b. To allow static electricity to dissipate
c. So the vapors don't blow in your face
d. To give time for analysis results

5.16 The pumping of cargoes between tanks during a voyage is allowed for which of the following reasons?

* a. Safety reasons only
b. To ensure the tank complies with the previous cargo rules
c. To utilize the full capacity of the tanks
d. To ensure that the materials in the tanks are homogenous

5.17 While sampling a crude ship, the fire alarm sounds. What action should be taken?

a. Grab a type C fire extinguisher and assist the crew
b. Close the hatch and call for the launch
c. Continue sampling because the crew will take care of the fire
* d. Immediately secure your area and report to the muster point

5.18 On entering a tank farm you begin to feel dizzy. What action should you take?

* a. Get out of the tank area immediately
b. Take a deep breath and run for the tank ladder
c. Lie down because there is more oxygen closer to the ground
d. Immediately put on your respirator with organic cartridges

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5.19 Before gauging a tank, how can static electricity be discharged from your body?

a. By using a tank gauge meter
* b. By touching a grounded structure such as a tank railing, with bare hands
c. By using natural fiber sampling cords
d. By touching a grounded structure such as a tank railing, while wearing rubber gloves

5.20 How can the opportunity for a build-up and/or discharge of static electricity be reduced?

a. By wearing rubber gloves
b. By not allowing your hands to slide on the hand rail
* c. By grounding yourself and your equipment before opening the gauge/sample hatch and during subsequent operations
d. By using stainless steel equipment

5.21 A portable electronic thermometer should always be grounded after the probe has been lowered into the liquid.

a. True
* b. False
c.
d.

5.22 What can help prevent a build-up and/or discharge of static electricity when sampling?

a. Use of a sampling cord made of synthetic fibre
b. Tying the end of the sampling cord to the railing of the tank
* c. Use of a sampling cord that contains no synthetic fibre
d. Holding the sample cord against the gauge hatch throughout the sampling operation

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5.23 **What should you do to avoid the build-up and/or discharge of static electricity when using a portable electronic thermometer (PET)?**

a. Hold on to the railing or other metal part of the tank while using the PET
* b. Attach the ground wire of the PET to the tank before opening the gauge hatch then slowly lower the probe assembly into the oil
c. Since the probe is plastic and does not conduct electricity, no static electricity can form
d. Answers a., b. and c. are all correct

5.24 **When using a metal tape to gauge a tank, in order to help dissipate any static charge the tape should always stay in contact with the gauge hatch during the gauging process.**

* a. True
b. False
c.
d.

5.25 **You are instructed to sample a tank of ethanol which is a new product for you. What should your first source of information be?**

a. MARPOL Regulations
b. The FOSFA Technical Manual (Oils and Fats)
* c. The Safety Data Sheet (SDS) for that product
d. ISO 5555

5.26 **What is a 'UN Number'?**

a. A communication and shipping number assigned to a product by the manufacturer
b. A chemical formula number used to identify the product
* c. A unique identifying number assigned to a product by the United Nations
d. An identifying number used only by manufacturers to assign categories of chemicals for sale

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5.27 **On which of the following documents would you always find a 'UN' Number'?**

* a. A Safety Data Sheet (SDS)
b. A Bill of Lading
c. A Certificate of Analysis
d. A chemical compatibility list

5.28 **To find out if a material is hazardous, you must consult the SDS.**

* a. True
b. False
c.
d.

5.29 **Which of the following is defined as a corrosive liquid?**

a. An acid solution
b. A caustic solution
c. Acid and caustic solutions are not corrosive
* d. Acid and caustic solutions are both corrosive

5.30 **Corrosive liquids will directly injure the body tissue on contact.**

* a. True
b. False
c.
d.

5.31 **Shipping declaration forms are required whenever vegetable oil samples are transported on a public road or highway.**

* a. True
b. False
c.
d.

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5.32 The GHS applies to:

a. Sample labels only
b. Safety Data Sheets (SDSs) only
c. Sample labels and SDSs
* d. Specialised chemicals only

5.33 What information must GHS sample labels contain?

a. Hazard pictograms, signal words and hazard statements
b. Product name and precautionary statements
c. Information in both a. and b. above
* d. Information in a. and b. above and supplier information, including a telephone number

5.34 What is the correct source of information about the hazards of any product being inspected?

a. The superintendent's supervisor
b. A knowledgeable chemist
c. The superintendent's previous experience
* d. Safety Data Sheets

5.35 What is the most informative source of information about the hazards of a product or chemical?

a. The job sheet
b. The Bill of Lading
* c. The Safety Data Sheet
d. The operations supervisor

5.36 What do the initials "SDS" stand for?

a. Material Storage and Distribution System
b. Material Safety and Distribution Sheet
c. Material Storage and Data System
* d. Safety Data Sheet

5.37 Who can supply an SDS?

a. The manufacturer of the material
b. The seller of the material
c. The distributor of the material
* d. Answers a., b. and c. are all correct

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5.38 **Which of the following are considered to be confined spaces?**

a. A ships tank
b. An external floating roof tank
c. A ship's pump-room
* d. Answers a., b. and c. are all correct

5.39 **What defines a confined space?**

a. It has limited means of access and exit
b. It is not designed for continuous occupation
c. It has limited natural ventilation
* d. Answers a., b. and c. are all correct

5.40 **Before entering a confined space, which of the following tests are required?**

a. Oxygen content
b. Lower explosive limit
c. Toxic vapor testing
* d. Answers a., b. and c. are all correct

5.41 **Which of the following are examples of a confined space?**

a. A cargo tank
b. A grain silo
c. A pump-room on a ship
* d. Answers a., b. and c. are all correct

5.42 **Someone must always stand watch at the entrance to the confined space while you are in it.**

* a. True
b. False
c.
d.

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5.43 What does an oxygen meter measure?

a. The percentage of oxygen below the LEL of a flammable vapor/air mixture
b. The amount of oxygen needed to make a confined space safe for entry
* c. The percentage of oxygen contained in the atmosphere being sampled
d. Answers a., b. and c. are all wrong

5.44 Before entering a confined space, which of the following is required?

a. Although more than one person will be entering the area, it is necessary to have a standby person at the entry point
b. All pipelines should be drained and verified empty
c. The atmosphere should be tested for safe entry and entry permission obtained
* d. Answers a., b. and c. are all correct

5.45 Do confined space entry regulations apply to vegetable oil tanks?

* a. Yes
b. No
c.
d.

5.46 Do confined space entry regulations apply to fish oil tanks?

* a. Yes
b. No
c.
d.

5.47 What is the safe oxygen content range in a confined space?

* a. Between 19.5% and 21.0%
b. Between 18.6% and 20%
c. Between 19% and 25%
d. Answers a., b. and c. are all wrong

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5.48 **For a tank to be safe for entry, what should the reading on a combustible gas detector be?**

a. Less than 15%
b. Less than 10%
* c. Less than 1%
d. Less than 0.5%

5.49 **What is the normal percentage content of oxygen in the air?**

a. 15.1%
b. 17.1%
* c. 20.9%
d. 28.9%

5.50 **The Short Term Exposure Limit (STEL) defines exposure to a substance over how long?**

a. 30 minutes
b. 60 minutes
* c. 15 minutes
d. 20 minutes

5.51 **Products have 'defined limits of combustion'. What are they?**

a. The permissible exposure limit and the threshold limit value
* b. The lower explosive limit, upper explosive limit and the flash point
c. The flash point and the threshold limit value
d. The permissible exposure limit and the lower explosive limit

5.52 **What do the initials 'LEL' stand for?**

a. Low explosion location
b. Low environmental levels
c. Lower environmental level
* d. Lower explosive limit

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5.53 If the atmosphere in a cargo tank is stated to be 'below the LEL' what does this mean?

a. There is not enough oxygen in the tank to support combustion
b. There is too much hydrocarbon vapor in the tank to support combustion
c. Answers a and b are correct
* d. There is not enough flammable vapor in the tank to permit combustion

5.54 What do the initials 'UEL' stand for?

a. Upper environmental level
b. Unknown environmental level
* c. Upper explosive limit
d. Unknown explosive levels

5.55 An explosimeter measuring LEL% is used to sample the atmosphere within a cargo tank and a reading of 15% is observed. What does the reading mean?

a. The atmosphere in the tank contains 15% oxygen
* b. The atmosphere in the tank is 15% of the lowest concentration of an explosive mixture of air and flammable vapors
c. The atmosphere in the tank is 15% flammable vapors
d. The atmosphere in the tank is a 15% mixture of air and flammable vapors

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SECTION 6 - SAMPLING

6.01 Regardless of the product, what is the maximum level to which sample containers must be filled?

a. 50%
b. 80%
* c. 95%
d. 100%

6.02 Which of the following types of sample containers are always unsuitable for use in handling or storage of vegetable oils and fats?

a. Glass bottles
b. Containers which are chemically inert and do not catalyse chemical reactions
* c. Aluminium bronze bottles
d. PET bottles (Polyethylene terephthalate)

6.03 When handling vegetable oils and fats, when is the use of glass sample containers NOT permitted?

a. Sampling from pipelines
* b. Sampling of ship's tanks
c. General use
d. Preparation of laboratory samples

6.04 For which products is it recommended to use a PET non-food compliant contact sample bottle?

a. Soybean oil samples
b. Castor oil samples
c. Animal fat samples
* d. Answers a., b. and c. are all wrong

6.05 For which products it is recommended to use a PET food compliant contact sample bottle?

a. Soybean oil samples
b. Castor oil samples
c. Animal fat samples
* d. Answers a., b. and c. are all correct

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6.06 **Why does the sampling standard recommend that a little space should be left at the top of each sample container?**

a. To permit the surface of the liquid to be visible in the laboratory
b. To allow space to test the vapor content of the sample
* c. To allow space for safe expansion of the liquid
d. To avoid the loss of light components

6.07 **Which of the following statements about sample equipment materials is NOT correct?**

* a. Glass equipment may always be used as long as great care is taken to avoid breakages
b. For sampling equipment, stainless steel is the most suitable material
c. Sampling equipment containing copper alloys may never be used
d. Aluminium may be used under certain circumstances, but not for the storage of samples

6.08 **Vegetable oils and animal fats should not be sampled with equipment that contains copper, brass or copper alloy.**

* a. True
b. False
c.
d.

6.09 **Fish oils can be sampled with equipment that contains copper, brass or copper alloy.**

a. True
* b. False
c.
d.

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6.10 Which of the following statements about sample equipment materials is NOT correct?

a. Glass equipment may be used in some ports as long as great care is taken to avoid breakages, but is never permitted inside tanks containing oils or fats
b. Aluminium may be used under certain circumstances, but not for the storage of samples
c. New cork stoppers are acceptable for closing sample containers if separated from contact with oil by a wad free of copper, iron and zinc
* d. Aluminium sample equipment should never be used because the acidity is high

6.11 When sampling shore tanks, what equipment is preferred to lower a sample bottle to the required level?

a. Ullage tape
* b. Natural fibre cord marked to indicate when the correct level has been reached
c. Innage tape
d. Brass sampling cage

6.12 Which equipment is best for sampling free water in a crude vegetable oil tank?

a. Weighted sample can
* b. A bottom sampler
c. Sample bottle in weighted cage
d. Sampling tube

6.13 What type of equipment should be used to sample the liquid contained in a 55 gallon (250 litre) drum?

a. A weighted sample can
b. A sample bottle and cage
* c. A sampling tube
d. A dipper sampler

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6.14 **Which of the following sampling instruments is NOT suitable to sample at varying depths in all sizes of tanks?**

a. Simple weighted sample can
b. Weighted cage and plastic (PET) sample bottle
* c. Bottom sampler with spring loaded valve
d. Answers a., b. and c. are all wrong

6.15 **Can glass thermometers be used to determine temperature in the samples/samplers?**

* a. Yes
b. No
c.
d.

6.16 **Which of the following instruments is suitable for sampling at the bottom of a tank?**

* a. Bottom sampler with deadweight valve
b. Valve sampling cylinder (sinker sample)
c. Dipper sampler
d. Stainless steel bar about 305 mm long and about 30 mm x 10 mm in cross section

6.17 **What can be determined with a bottom sampler?**

a. Free water
b. Sediment layer present
c. Emulsion layer present
* d. Answers a., b. and c. are all correct

6.18 **Which of the following materials is suitable for a sampling container when sampling oil from a shore tank?**

a. Glass
b. Copper
c. Wood
* d. Aluminium

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6.19 **Which of the following sample vessel materials must NOT be used when sampling oil from a shore tank?**

a. Stainless steel
b. Aluminium
* c. Glass
d. Plastic

6.20 **Which of the following sample vessel materials must NOT be used when sampling oil from a shore tank?**

* a. Clean glass
b. Plastic or PET
c. Stainless steel or aluminium
d. Clean stainless steel

6.21 **If sampling from a vertical cylindrical tank in which the liquid stored is not homogeneous, which sampler can generally be used?**

a. A weighted sample can with cork
b. A weighted cage and plastic sample bottle
c. A zone sampler
* d. Answers a., b. and c. are all correct

6.22 **If sampling from a vertical cylindrical tank in which the liquid stored is not homogeneous, which sampler can generally be used?**

a. A weighted sample can with cork
b. A weighted cage and plastic sample bottle
* c. A zone sampler
d. Answers a., b. and c. are all correct

6.23 **Can temperature to be measured at the same time the liquid level is gauged?**

a. No
* b. Yes
c.
d.

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6.24 If water is present in a parcel of vegetable oil stored in a cylindrical tank, where can this be found?

* a. At the bottom of the tank
b. On top of the vegetable oil as a layer
c. Mixed in the vegetable oil and can be visually seen as very little drops free-floating in the oil
d. Water cannot be determined as water is soluble in oils and fats. It can only be determined through analysis

6.25 Under FOSFA Contract 54 how many samples do you need to take from each ship tank?

a. Minimum 4 from each ship tank
* b. Minimum 5 from each ship tank
c. Minimum 3 from each ship tank
d. Minimum 2 from each ship tank

6.26 Under FOSFA Contract 54 how many samples are for the receiver?

* a. Two from each ship tank; care of the vessel
b. None
c. One from each ship tank; care of the vessel
d. All samples go to the receiver

6.27 How long do FOSFA Contract 54 samples have to be retained under the standard contract clause?

* a. 3 months, or longer when notified by your principal
b. 6 months in all cases
c. 12 months in all cases
d. 1 month

6.28 Under FOSFA rules, which of the following is correct regarding the use of member analysts?

a. It is mandatory in all cases
* b. It is mandatory except when the contract or national laws or regulations require the use of Governmental or other analysts
c. It is not mandatory
d. FOSFA rules do not mention any requirements regarding member analysts

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6.29 Why is a 'first foot' sample taken?

a. To determine the quality of the product in the shore tank
b. To confirm that the vessel's tanks and pipelines are clean
c. To confirm that the product in the shore pipeline meets the specification
* d. As an indication that the cargo is not contaminated and will comply with the specification after loading

6.30 What is the minimum sample size that is required for FOSFA contractual analysis?

* a. 250 ml
b. 500 ml
c. 1 litre
d. 5 litre

6.31 If a vegetable oil cargo is loaded from different shore tanks into ship's tanks, when can a vessel's tanks be sampled?

a. One hour after loading has finished
* b. As soon as they have been filled
c. At any time after loading is complete
d. If the temperature of the liquid in the ships tank is equal to the temperature of the oil in the shore tank measured at the start of loading

6.32 You have sampled three increments (top - middle - bottom) of soybean oil in a shore tank whose contents are homogeneous. You can prepare your bulk sample by doing which of the following?

* a. Mixing in the proportions one part from both top and bottom increment and three parts from the middle
b. Mixing in the proportions one part from each top, bottom and middle increment
c. Mixing in the proportions two parts from both top and bottom increment and three parts from the middle
d. Mixing in the proportions one part from top, two parts from the middle and three parts from the bottom

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6.33 **Why should sampling cord not be allowed to fall on the deck or tank roof?**

a. It could become contaminated
b. It could make a mess that could cause a danger of slipping
c. The cord could become damaged
* d. Answers a. and b. are both correct

6.34 **Samples taken from a lot in accordance with ISO 5555 and combined in amounts proportional to the quantities each increment represents should be representative of the lot and should take account of any contractual requirements.**

a. False
* b. True
c.
d.

6.35 **ISO 5555 covers sampling of:**

a. Vegetable oils only
b. Vegetable oils and fats
* c. Animal and vegetable oils and fats
d. Crude animal and vegetable oils and fats

6.36 **What is the principal reason for taking bottom samples in refined vegetable oil?**

a. To determine the gauge height
b. To obtain a sample for viscosity determination
* c. To locate any free water
d. Bottom samples should never be taken in refined vegetable oil

6.37 **What should you do before taking a pipeline sample?**

a. Earth (ground) your equipment
* b. Flush the tap and sample line into a container that is grounded until they are purged
c. Call your supervisor
d. Answers a, b and c are all correct

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6.38 **During preliminary sampling of a shore tank that will be used to load a vessel, you should also obtain a tape gauge reading.**

* a. True
b. False
c.
d.

6.39 **A bulk sample is a quantity of vegetable oil obtained by combining the various increments from a lot in amounts proportional to the quantities they represent.**

* a. True
b. False
c.
d.

6.40 **Which of the following is the definition of an increment sample?**

a. A quantity of vegetable oil obtained by combining the various increments from a lot in amounts proportional to the quantities they represent
b. An identified quantity of liquids, presumed to have uniform characteristics
* c. A quantity of vegetable oil taken at one time from one place in a lot
d. A quantity of vegetable oil obtained from the bulk sample, which is, after suitable homogenization and reduction, representative of the lot

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6.41 Which of the following is the definition of a lot?

a. A quantity of vegetable oil obtained by combining the various increments from a lot in amounts proportional to the quantities they represent
* b. An identified quantity of liquids, presumed to have uniform characteristics
c. Quantity of vegetable oil taken at one time from one place in a lot
d. Quantity of vegetable oil obtained from the bulk sample, after suitable homogenization and reduction, representative for the lot

6.42 What is the name for a sample taken either at a specific point in a tank, or from a pipe at a specific time during a pumping operation?

a. A density sample
b. A tank-side sample
* c. An increment sample
d. A single-tank composite sample

6.43 When sampling homogenous fats, what is the number of sample levels required for a depth of 2 metres in a tank?

a. One sample - middle level
b. Two samples - upper and lower
* c. Three samples - top, middle and bottom (one tenth from top, one tenth from bottom and middle)
d. Samples should be taken every 10cm

6.44 When sampling non-homogenous fats, how many increment samples should a surveyor take until the layer of different composition is reached?

* a. At depths of every 30cm from top to bottom until the layer of different composition is reached then take, for example, every 10 cm
b. At depths of every 1m from top to bottom
c. At the middle level of the product
d. At the top, middle, bottom level of the product

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6.45 **If sampling from a vertical cylindrical tank in which the liquid stored is not homogeneous, increment samples are taken at depths of?**

a. 20cm
* b. 300mm
c. 1m
d. Top, middle and bottom

6.46 **If sampling from a vertical cylindrical tank and the liquid stored is homogeneous, increment samples are taken at depths of?**

a. 20cm
b. 300mm
c. 1m
* d. Top, middle and bottom

6.47 **When should sampling for weight determination be done?**

* a. Immediately after discharge
b. At least 24 hours after discharge
c.
d.

6.48 **Which of the following statements is NOT correct, if sampling vegetable oils and fats from weigh tanks?**

a. Weigh tanks should be sampled immediately after they have been filled, before settling occurs
b. If you can sample immediately, take the sample by allowing a sampling instrument to sink to the middle of the liquid and fill
c. If a delay occurs and sampling immediately after filling is not possible, sample at depths of every 300mm
* d. If a delay occurs which induces settling of the liquid, inform your principal and make a note on your sampling report about the non representativeness of the bulk sample

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6.49 When sampling from pipelines during transfer, which of the following courses of action is NOT acceptable?

* a. A note has been taken of the loading flow rate and a cover is fitted over the whole apparatus so there is no need to constantly monitor the sampling process from the pipeline
b. In view of the possibility of blockage of the dripcock etc. by pieces of dirt and of variations that inevitably occur in the flow, it is essential that an experienced person is present constantly during the sampling operation
c. Carefully and immediately mix all the samples taken from the dripcock, after completion of the discharge, to form the bulk sample from which the laboratory samples are to be taken
d. All of the above are acceptable

6.50 During sampling from a pipeline, an superintendent notices that the sampling bottle is full. What should the superintendent do?

a. Pour some of the sample into a second container and continue sampling with the second container
b. Pour some of the sample out of the current bottle and continue
* c. Take a second container and continue with sampling from the pipeline. After the sampling operation is complete the two containers can be mixed proportionally
d. Answers a., b. or c. are all correct

6.51 When sampling from packages (small packing units) it is recommended that representative sampling be carried out by agreement between contracting parties. If no agreement is in place a distinction should be made between

a. Consignments which may be assumed to be more or less uniform
b. Consignments which are known not to be uniform
c. Consignments of which nothing is known
* d. Answers a., b. and c. are all correct

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6.52 **When top-middle-bottom samples are taken from a tank, what point is the top sample taken from?**

a. 1/3 of the liquid height from the tank bottom
b. At the middle of the tank outlet fitting
* c. 9/10 of the liquid height from the tank bottom
d. 100 cm off the tank bottom

6.53 **At what vertical location in the liquid is a top sample taken if gauging gives an innage of 10 m?**

* a. 1/10 of the liquid depth below the surface of the liquid
b. 25 mm below the surface of the liquid
c. 150 mm below the surface of the liquid
d. The middle of the lower third of the tank

6.54 **In relation to sampling ships tanks, which statement is NOT correct?**

a. Use the same method as described for shore tanks
* b. Sample the ships tanks one hour after they have been filled
c. Take a first one-foot sample for each ship's tank loaded
d. Sample each tank separately

6.55 **In relation to the sampling of ships tanks, which of the following statements is NOT correct?**

a. Use the same method as described for shore tanks
b. Sample as soon as ships tanks have been filled
c. Take a first one-foot sample for each ship's tank loaded
* d. Sample each tank separately and mix 1P + 1S, 2P + 2S etc, and afterwards give 2 sets of these samples to the captain

6.56 **According to FOSFA Contract 54 the superintendent needs to take five samples from each ships tank after loading: How many of these samples from each tank are given to the master for receipt by the receiver or the receiver's representative at the discharge port?**

a. One
* b. Two
c. Three
d. Four

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6.57 Where should composite samples from vessel tanks be prepared?

a. On board, as long as every cargo tank contains the same cargo
b. On board, using equal volumes from each tank
* c. Preferably in a laboratory, but also at other locations if conditions and equipment allow samples to be composited in proportion to the volume in each tank
d. In the back of the superintendent's vehicle

6.58 Which document(s) describe the procedures for sampling of vegetable oils?

a. FOSFA International Official Method
* b. ISO 5555
c. Commission Directive 2004/4/EC
d. API MPMS Chapter 17.2

6.59 Which of the following sampling regimes is NOT correct under FOSFA Contract 53 (Incoterm FOB)?

a. Samples to be drawn at vessel's rail or the nearest practical point
* b. Samples to be kept for 2 months minimum from date of bill of lading
c. Representative samples are to be sealed if intended for analysis
d. If one party fails to appoint a representative then the superintendent present can carry on. His samples shall be valid samples in case of arbitration and or analysis

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6.60 **Which of the following sampling regimes is NOT correct under FOSFA Contract 54 (Incoterm CIF)?**

a. Not less than five pre-shipment samples of the oil loaded shall be taken at the ship's rail or the nearest practicable point prior to loading
b. Samples to be kept for 3 months minimum from date of bill of lading
c. At loading: not less than five samples representative of the oil to be drawn from each ship's tank/s and sealed by superintendent for analysis
* d. At discharge: any unpumpable and/or off-quality oil is to be discharged and to be considered as part of the cargo. This part shall be also be sampled and added to the representative pipeline sample

6.61 **What is the correct FOSFA contractual sampling method?**

a. AOCS C-1-47
* b. ISO 5555
c. ISO 3171
d. Answers a., b. and c. are all correct

6.62 **Which samples should be sent for contractual analyses under FOSFA Contract 54?**

* a. Individual ship tanks
b. Composite ship tanks sample
c. Two sets of composite samples
d. One set of composite samples and one set of first foot samples

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6.63 Under FOSFA Contract 53, when you are acting for sellers how do you draw the samples?

* a. Representative sample(s) of the oil delivered to each vessel's tank shall be drawn conjointly by buyers' and sellers' superintendents at vessel's rail or the nearest practicable point thereto prior to loading and sealed for analysis and/or arbitration and contamination purposes

b. A composite representative sample(s) of the oil delivered shall be drawn conjointly by buyers' and sellers' superintendents at vessel's rail or the nearest practicable point thereto prior to loading and sealed for analysis and/or arbitration and contamination purposes

c. Representative sample(s) of the oil delivered to each vessel's tank shall be drawn conjointly by buyers' and sellers' superintendents from the shore tank prior to loading and sealed for analysis and/or arbitration and contamination purposes

d. Not less than 5 samples representative of the oil to be drawn from each ship's tank/s and sealed by superintendent for analysis

6.64 Under FOSFA Contract 80 (sampling), which of the following is correct?

* a. Not less that 5 pre-shipment contamination samples of the oil loaded shall be taken at the ship's rail or the nearest practicable point prior to loading

b. Not less than 5 contamination samples to be drawn only from ship tanks

c. Not less than 5 contamination samples to be drawn only from shore tank

d. There is no need to draw contamination samples under FOSFA Contract 80 as it is CIF delivered weight

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6.65 Under FOSFA Contract 80 (sampling), which of the following is correct?

* a. At loading: not less than 5 samples representative of the oil are to be drawn from each ship's tank/s and sealed by superintendent for analysis. Two sets of these samples shall be handed to the Master with instructions to pass to the receivers or their representatives at port of discharge. The remaining sets of samples to be retained by the superintendent at the port of loading

b. At loading: a set of not less that 5 composite samples to be drawn from the whole consignment and sealed by superintendent for analysis. Two of these samples shall be handed to the Master with instructions to pass to the receivers or their representatives at port of discharge. The remaining two samples to be retained by the superintendent at the port of loading

c. Not less than 5 contamination samples to be drawn only from shore tank

d. Answers a., b. and c. are all wrong

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6.66 Under FOSFA Contract 80 (sampling), which of the following is correct?

a. Buyers' and sellers' superintendents shall jointly draw 3 representative samples during discharge at the ship's rail or the nearest practicable point thereafter. Any unpumpable and/or off-quality oil stored separately shall be sampled and analyzed separately. Buyers or their representatives shall retain the 3 sealed samples and if required shall send one sealed sample for analysis

* b. Buyers' and sellers' superintendents shall jointly draw 5 representative samples during discharge at the ship's rail or the nearest practicable point thereafter. Any unpumpable and/or off-quality oil stored separately shall be sampled and analyzed separately. Buyers or their representatives shall retain 3 sealed samples and, if required shall send one sealed sample with due dispatch for analysis to an analyst. The remaining 2 sealed samples shall be retained by sellers or their representatives

c. Buyers' and sellers' superintendents shall jointly draw 3 representative samples during discharge from the shore tank. The buyers or their superintendents shall retain the 3 sealed samples and if required shall send one sealed sample with due dispatch for analysis to an analyst

d. Answers a., b. and c. are all wrong

6.67 Which samples are to be sent for analysis if cargo is commingled on board?

a. Samples taken from each ship tank prior and after commingling

* b. Samples drawn at vessel's rail or the nearest accessible point before the ship's rail

c. Samples drawn from the shore tank

d. Samples drawn from the shore tank after 24 hours, so that residue has had time to settle to the bottom of the tank

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6.68 **If you are dispatching a sample for analysis under a FOSFA Contract, which of the following laboratories should you select?**

a. An independent laboratory using FOSFA Standard Contractual Methods
* b. A laboratory represented in FOSFA Oils and Fats Section using FOSFA Standard Contractual Methods
c. An independent laboratory accredited according to ISO 17025 standard
d. It doesn't matter which laboratory, as long as the correct ISO/AOCS/FOSFA method is used

6.69 **When or where should samples be labelled?**

a. In the laboratory
* b. Immediately after the sample is obtained
c. Before transportation to the laboratory
d. Immediately upon arrival in the laboratory

6.70 **Why is it important to label all of your samples as soon as possible?**

a. This is good industry practice
b. An incorrectly labelled sample could generate a legal action
c. It is easy to label samples incorrectly if you do not label them promptly
* d. Answers a., b. and c. are all correct

6.71 **When should a sample be labelled?**

a. When you return to our office
b. After removing them from your sample transportation box.
c. Just before you leave the facility
* d. Immediately after it is obtained

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6.72 Which of the following statements applies when dispatching laboratory samples?

a. The samples shall be kept cool
b. The samples shall be kept cool and away from light
c. The samples shall be kept cool and away from light as far as possible
* d. The samples shall be kept cool and away from light as far as possible, unless required only for the determination of litre weight in air

6.73 When sampling a tank wagon or car or tank container, which statement is correct?

* a. Samples should be preferably be taken as soon as the tanks have been filled
b. Samples should be taken after settling has occurred
c. Settling of the oil occurs after a while which can lead to fractionating or layering. You should wait at least 30 minutes before taking the samples
d. A minimum of five samples should be taken from each container

6.74 When sampling a tank wagon or car or tank container, which statement is correct?

a. Samples should preferably be taken after settling of the oil has occurred
* b. If increment samples cannot be taken immediately after the filling of the tanks, a preliminary test for the presence of free water is to be performed
c. Samples shall never be taken immediately after the filling of the tanks
d. Sampling out of tank wagon/car or tank container will never be done with a valve sampling cylinder

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6.75 **When sampling a tank wagon or car or tank container, which statement is correct?**

a. Settling of the oil occurs after a while which can lead to fractionating or layering. The superintendent should wait at least 30 minutes before taking the samples.
* b. If free water is present, it may be removed by an operator under supervision opening the bottom tap with the agreement of the parties concerned
c. Sampling from a tank wagon/car or tank container will never be done with a valve sampling cylinder
d. Samples shall never be taken immediately after the filling of the tanks

6.76 **ISO 5555 specifies valid sampling methods for**

a. Vegetable oils and fats
b. Vegetable oils, fats, technical tallows and greases
* c. Vegetable oils, fats, technical tallows, greases and acid oils
d. Vegetable oils only

6.77 **If you want to take samples from packages which contain loose solid fats it is allowed to form a representative sample of all sizes of lumps and then quarter it to a suitable size.**

* a. Yes
b. No
c.
d.

6.78 **It is allowed to take samples of hard fats with sampling scoops.**

* a. Yes
b. No
c.
d.

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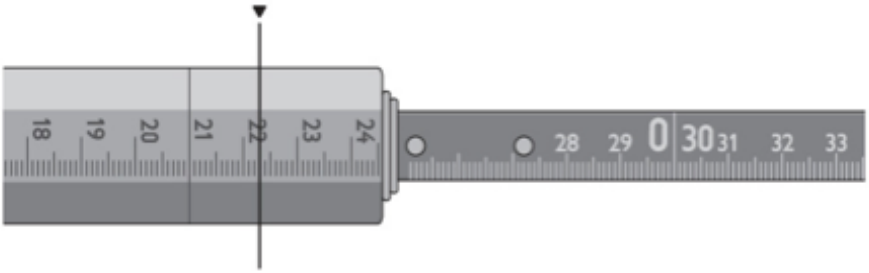
SECTION 7 – SHORE TANK GAUGING

7.01 The tank was dipped using a sounding tape and shows the figures as below, what is the correct reading in metres if oil cut is at the black line?

a. 0.6506
b. 6.56
* c. 0.656
d. 6.506

7.02 The tank was dipped using a sounding tape and shows the figures as below, what is the correct reading in metres if the oil cut is at the black line?



a. 2.230
b. 0.2203
c. 0.0223
* d. 0.223

7.03 **The tank was dipped using a sounding tape and shows the figures as below, what is the correct reading in metres if the oil cut is at the black line?**

a. 1.601
* b. 1.614
c. 0.1614
d. 1.604

7.04 **The tank was dipped using a sounding tape and shows the figures as below, what is the correct reading in metres if the oil cut is at the black line?**

a. 0.780
b. 10.78
* c. 1.780
d. 1.708

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7.05 If the ullage of the shore tank is 3.300 metres and innage (dip) is 10.506 metres, what will be the Observed Gauge Height?

a. 7.206 metres
* b. 13.806 metres
c. 6.903 metres
d. 17.106 metres

7.06 At which level or levels should a superintendent measure the oil temperature of a 10.0m depth of vegetable oil in a shore tank, if he is sampling for the determination of conventional mass per volume litre weight in air?

a. At the middle level of the oil
b. 1m below surface and 1 m above bottom of oil
* c. 1m below surface, middle and 1m above bottom oil
d. At 5 random points

7.07 If a tank's capacity table is an innage or dip table, what is the preferred method of gauging?

a. Side Gauge
b. Ullage
* c. Innage or dip
d. Outage

7.08 If you find a discrepancy between reference gauge height and observed gauge height when gauging a shore tank what action should you take?

a. Adjust your gauge to observed reference height
b. Ullage the tank
* c. Recheck your gauge, make a note of the difference and inform your supervisor
d. Ignore it as long as the ship to shore difference does not exceed 0.5%

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7.09 Following discharge of a vegetable oil cargo, when should final gauging of shore tanks be carried out?

a. Immediately after discharge
b. At least 24 hours after discharge
* c. At least 24 hours after discharge, but it is good practice to perform a check gauging immediately after discharge, in case of unexpected events
d. One hour after discharge

7.10 In accordance with good practice, how closely should repeated gauge tape readings agree?

a. Within 12mm
b. Within 6mm
* c. Within 3mm
d. Within 1mm

7.11 In order to ensure the gauging accuracy in shore tanks the minimum number of dips recommended is which of the following?

a. One
* b. Two identical dips out of three
c. Three identical dips out of four
d. Three identical dips out of six

7.12 When using a portable electronic thermometer, to what precision should a temperature be read and recorded?

* a. The nearest 0.1°C
b. The nearest 0.25°C
c. The nearest 0.5°C
d. The nearest 1°C

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7.13 After a discharge, why is a 'provisional gauge' taken prior to the 'official gauge'?

* a. Because the 'official gauge' will not be taken for a significant period of time (eg after settling of shore tanks)
b. Because it is required by your employer's insurance company
c. Because it is required by the Charter Party
d. Answers a., b. and c. are all correct

7.14 How frequently should gauge tapes be certified for accuracy?

* a. Before initial use if not already certified, and then once per year
b. Once per month
c. Before each use
d. Once every three months

7.15 Which item do you need to check prior to tank gauging?

a. Measuring tape
b. Thermometer
c. Sampling cage
* d. Answers a. and b. are correct

7.16 To try to ensure gauging accuracy in shore tanks, the minimum number of dips recommended is which of the following?

a. One
* b. Two identical dips out of three
c. Three identical dips out of four
d. Four dips, averaged

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7.17 How often must a gauging tape be checked for accuracy by comparison against a traceable master tape?

a. Prior to each use
b. Every six months
* c. Prior to initial use and at least annually
d. At least once per week

7.18 Which of the following factors does NOT affect the accuracy of quantity measurement?

a. Density
b. Temperature
* c. Weight of the gauging tape
d. Tank calibration table

7.19 What is a tank datum plate?

a. The position on a tank where the gauge height is noted
b. The point marked on the gauge hatch of a tank to indicate the position from which the tank is to be gauged
c. The plate on the tank shell that lists the tank general data such as roof weight, height of tank, etc
* d. A plate fixed in the tank directly under the reference gauge point to provide a fixed contact surface and is the point to which all calibration charts are referenced

7.20 What is a 'master tape'?

a. The only tape that may be used to take custody transfer measurements
b. A tape belonging to the National Certification Body
c. A tape to be used only for tank calibration
* d. A reference tape, traceable to National Standards, to be used only for verifying the accuracy of tapes used in the field

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7.21 What is the observed gauge height of a tank?

* a. The distance from the reference gauge point to the bottom of the tank or the datum plate as measured during the gauging operation
b. The distance from the reference gauge point to the bottom of the tank or the datum plate as shown on the tank capacity tables
c. The distance from the ullage pipe to the liquid level
d. The height usually written somewhere on the ullage pipe

7.22 What does an innage/sounding measure?

a. The distance from the surface of the liquid in the tank to the reference gauge point of the tank
b. The distance between the point where the floating roof of the tank is floating freely and the point where it is resting fully on its supports
* c. The level of liquid in a tank measured from the datum plate or tank bottom to the surface of the liquid
d. The distance from the tank datum plate or bottom to the tank reference gauge point

7.23 What does an outage/ullage measure?

a. The distance from the tank datum plate or bottom to the tank reference point
* b. The distance from the surface of a liquid in a tank to the reference gauge point of the tank
c. The amount of product transferred out from a tank
d. The level of liquid in a tank measured from the tank bottom to the surface of the liquid

7.24 An innage gauge bob is pointed to assist in the penetration of tank non-liquids. Where is its zero point?

a. Top of the eye
b. Bottom of the eye
* c. Tip of the bob
d. Inside of the tape swivel

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7.25 What is innage or dip best described as?

* a. The distance from the datum plate or the tank bottom to the surface of the product
b. The measurement from the tank bottom to reference point
c. The cut found on the bob
d. The distance from the reference point to surface of the product

7.26 Which gauge measures the distance from the datum plate or tank bottom to the surface of the liquid?

* a. Innage
b. Ullage
c. Reference height
d. Datum gauge

7.27 Which gauge measures the distance from the surface of the liquid to the tank reference gauge point?

a. Innage
* b. Ullage
c. Dip
d. Sounding

7.28 What is the measured distance from the datum plate or tank bottom to the reference gauge point called?

* a. The observed gauge height
b. The innage gauge height
c. The reference gauge height
d. The ullage gauge height

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7.29 What is the term for the distance from the datum plate or tank bottom to the reference gauge point, as shown on the tank capacity table?

a. Observed gauge height
b. Innage gauge height
* c. Reference gauge height
d. Ullage gauge height

7.30 What are you measuring if you gauge the distance from the datum plate or tank bottom to the surface of a liquid?

* a. Innage
b. Ullage
c. Reference height
d. Datum gauge

7.31 What term is used for the distance from the surface of the liquid to the tank reference gauge point?

a. Innage
* b. Ullage
c. Dip
d. Sounding

7.32 What is the term for the distance from the tank bottom or datum plate to the reference gauge point measured at the time of gauging?

* a. The observed gauge height
b. The innage gauge height
c. The reference gauge height
d. The ullage gauge height

7.33 What is the term for the distance from the datum plate or tank bottom to the reference gauge point, as indicated on the tank capacity table?

a. Observed gauge height
b. Innage gauge height
* c. Reference gauge height
d. Ullage gauge height

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7.34 **On a shore tank, what is the term for the distance between the reference gauge point and the datum point, as measured at the time of gauging?**

a. Observed reference point
b. Reference gauge height
c. Total gauge height
* d. Observed gauge height

7.35 **An ullage gauge is the same thing as an outage gauge.**

* a. True
b. False
c.
d.

7.36 **The reference gauge height of shore tank is:**

a. The distance from the tank top to the bottom of the tank
* b. The distance from reference gauge point to the datum plate or tank bottom as specified in tank capacity table
c. The distance from reference gauge point to the cargo level
d. Answers a., b. and c. all are wrong

7.37 **Which of the following statements regarding reference gauge height is correct?**

a. It should be recorded from the calibration tables, before tank gauging
b. It should be compared with the observed gauge height
c. It should be recorded in the superintendent's notebook
* d. Answers a., b. and c. are all correct and good industry practice

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7.38 Which of the following can affect the accuracy of tank's capacity table?

a. The flexing of the tank bottom with the transfer of contents
b. Expansion at the vertical middle (barreling) occurring during filling
c. Accumulated deposits of previous contents on the tank shell
* d. Answers a., b. and c. are all correct

7.39 When gauging a shore tank you read your tape to the nearest 10mm.

a. True
* b. False
c.
d.

7.40 When gauging a tank by the innage method, a comparison between the observed and reference gauge height is made to ensure which of the following?

a. The gauge tape and bob are suspended in a vertical position within the tank
b. The gauge bob is in contact with the tank bottom or datum plate
c. The tape has not been lowered too far into the tank
* d. Answers a., b. and c. are all correct

7.41 A 'tank capacity table' is also referred to as a 'tank calibration table'.

* a. True
b. False
c.
d.

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7.42 **A weighbridge scale is calibrated and the certificate for calibration is available indicating validity. You suspect that the weighbridge is malfunctioning and records different results. What should you do?**

a. Continue weighing cargo on the weighbridge
b. Check and verify weighbridge with standard weights
c. Counter check the cargo weights on a different weighbridge (assuming one is available)
* d. Answers b. and c. are correct

7.43 **You have been informed there is free water present. How would you take the free water measurements?**

* a. By the innage method with a suitable food grade water finding paste
b. By the ullage with a suitable food grade water finding paste
c. Using an interface sampler
d. Answers a. and b. are both correct

7.44 **When gauging a terminal storage tank prior to loading a vessel, an superintendent notes that his observed gauge height does not match the reference gauge height. On gauging the same tank on completion of loading the vessel he again observes the same difference in observed and reference gauge heights, such that both opening and closing observed gauge height readings are identical. Can the gauges obtained be used for determining the loaded volume?**

* a. Yes
b. No
c.
d.

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7.45 You are assigned to determine final shore outturn quantity. The shore tank is almost 95% full. The terminal tells you that the connecting internal line to the tank has been cleared of oil and is empty. However, you are not sure of the status of line. What is the correct course of action?

a. Accept terminal's suggestions to carry out tank measurement
* b. Ask terminal if it is possible to make the line full (line pressing) and add the line content to the tank volume when determining weight
c. Presume that the line is empty and determine outturn quantity based upon the tank volume
d. Contact the principal for instructions

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SECTION 8 – DENSITY AND TEMPERATURE MEASUREMENT

8.01 When the temperature of a vegetable oil or animal fat increases, the density:

a. Increases
* b. Decreases
c. Stays constant
d. May increase or decrease

8.02 When the temperature of a vegetable oil decreases, the mass:

a. Increases
b. Decreases
* c. Stays constant
d. May increase or decrease

8.03 When the temperature of an animal fat increases, the volume:

* a. Increases
b. Decreases
c. Stays constant
d. May increase or decrease

8.04 When the temperature of an animal fat decreases, the density:

* a. Increases
b. Decreases
c. Stays constant
d. May increase or decrease

8.05 What is the density correction factor commonly used for crude vegetable oils?

* a. 0.00068 kg/l per °C
b. 0.00086 kg/l per °C
c. 0.00056 kg/l per °C
d. Answers a., b. and c. are all wrong

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8.06 **Which correction should be applied to the density of vegetable oil having a measured temperature of 0.5°C below the known tested density?**

* a. 0.00034 kg/l should be added to the tested density to obtain the actual density
b. 0.00034 kg/l should be deducted from the tested density to obtain the actual density
c. In this case no correction should be applied
d. It is not possible to calculate the correction without more information

8.07 **Which correction (derived from the commonly used density correction) should be applied to the density of fish oil having a temperature of 2.0°C above the known tested density?**

a. 0.00136 kg/l should be added to the tested density to obtain the actual density
* b. 0.00136 kg/l should be deducted from the tested density to obtain the actual density
c. In this case the correction is not applicable
d. It is not possible to calculate the correction without more information

8.08 **Values of 'density' or 'relative density' for petroleum products be also be used for vegetable oils and animal fats.**

a. True
* b. False
c.
d.

8.09 **Are fatty oils traded on litre weight in air?**

* a. Yes
b. No
c.
d.

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8.10 **Is the litre weight in air of vegetable oil at 0°C equivalent to its density in air at 0°C?**

* a. Yes
b. No
c.
d.

8.11 **Can the values of 'density' or 'relative density' for petroleum products be used for vegetable oils?**

a. Yes
* b. No
c.
d.

8.12 **When operating as a FOSFA superintendent, quantity is determined on basis of which of the following?**

* a. The density in litre weight in air
b. The specific gravity in vacuum
c. Mass
d. Standard volume

8.13 **When calculating ship tank quantities at a load port, and loading from a single shore tank, the superintendent should use:**

* a. The same density as that used for the shore tank calculation
b. The density as advised by the ship's officers
c. The density as advised by terminal personnel
d. The density from the Chemical Engineers Handbook

8.14 **When calculating the ship tank quantities at the discharge port, the superintendent should use:**

* a. The same density as the one used at loading port, adjusted for temperature
b. The density as advised by terminal personnel
c. The density provided by the ship's agent
d. The density of the last product to be discharged

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8.15 When calculating ships' tank quantities at a load port where loading is from several shore tanks, which of the following should the superintendent use?

a. The density from the tank which loaded the largest proportion of the cargo
b. The density as advised by the ship's officers
c. The density as advised by the principals
* d. A calculated density based on shore tank densities, pro rated according to the quantity of cargo loaded from each tank OR the actual tested density.

8.16 What are the effects of temperature on the density and viscosity of vegetable oil, fats and fish oils?

a. Density and viscosity of the oil increase when temperature increases
* b. Density and viscosity of the oil both decrease when temperature increases
c. Density decreases and viscosity increases when temperature increases
d. Density increases and viscosity decreases when temperature increases

8.17 If there is less than 1m of vegetable oil in a tank at which level should a single temperature measurement be taken?

a. At about 10% of the total cargo height, below the surface level
b. At about 10% of the total cargo height, above the bottom of the tank
* c. At about 50% of the total cargo height
d. Single temperature measurements are not acceptable

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8.18 **When taking a single temperature measurement of a vegetable oil stored in a tank of 15.000 m height (from striking plate to gauge point), with surface cargo at 10.000 m height, to which level should the superintendent lower the thermometer?**

* a. In this case a minimum of three measurements should be taken
b. 7.5 metres above the striking plate
c. 10 metres above the striking plate
d. 5 metres above the striking plate

8.19 **When taking a temperature measurement of lard stored in a tank of 15.000 m height (from striking plate to gauge point), with surface cargo at 10.000 m height, to which level should the superintendent lower the thermometer to measure the temperature in the middle of the parcel?**

a. 6 metres from the reference gauge point
b. 14 metres from the reference gauge point
* c. 10 metres from the reference gauge point
d. An average of measurements taken at the levels given in a, b and c should be taken

8.20 **Temperature measurements on board ship may be taken using a UTI instrument In this context what does UTI stand for?**

a. Universal temperature indicator
* b. Ullage temperature interface
c. Ullage testing installation
d. United thermal indicator

8.21 **What is the precision of the read-out of an ullage temperature interface instrument?**

a. To the nearest 1.0°C
* b. To the nearest 0.1°C
c. To the nearest 0.01°C
d. To the nearest 0.05°C

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8.22 For all edible oils and fats, what is the specification for the minimum flash point for the cargo?

a. 100°C
* b. 121°C
c. 212°C
d. 250°C

8.23 When determining the temperature of vegetable oil in the ship's tanks, it is acceptable to use the temperature readings from the ship thermometers, without further verification.

a. True
* b. False
c.
d.

8.24 It is acceptable at some ports to use a glass thermometer where the measuring fluid is alcohol.

* a. True
b. False
c.
d.

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SECTION 9 – FOSFA HEATING INSTRUCTIONS

9.01 Who issues the FOSFA heating instructions for an FOB loading?

* a. The Shippers' representatives
b. The FOB sellers' representatives
c. The vessel's officer(s)
d. The independent superintendent

9.02 Who receives the FOSFA heating instructions?

a. The FOB buyers' representatives
b. The FOB sellers' representatives
* c. The vessel's officer(s)
d. The terminal representatives

9.03 When are the FOSFA heating instructions issued?

* a. Upon chartering the vessel
b. Prior to loading the vessel
c. Prior to discharging the vessel
d. Prior to sailing

9.04 When a cargo is to beloaded under a CIF contract who issues the FOSFA heating instructions?

a. The buyers' representatives
* b. The sellers' representatives
c. The vessel's officer(s)
d. The independent superintendent

9.05 As per latest FOSFA Heating instructions, what is the maximum temperature at time of discharge for crude rapeseed oil?

a. Ambient temperature
b. 15°C
* c. 20°C
d. 30°C

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9.06 As per latest FOSFA Heating instructions, what is the minimum temperature at time of discharge for crude rapeseed oil?

a. Ambient temperature
* b. 15°C
c. 20°C
d. 30°C

9.07 As per latest FOSFA Heating instructions, what is the maximum temperature at time of discharge for palm fatty acid distillate?

a. Ambient temperature
b. 52°C
c. 62°C
* d. 72°C

9.08 As per latest FOSFA Heating instructions, what is the minimum temperature at time of discharge for palm fatty acid distillate?

a. 45°C
* b. 55°C
c. 60°C
d. 72°C

9.09 According to FOSFA Heating instructions, what is the minimum temperature at time of discharge for fish oil

a. 15°C
* b. 25°C
c. 35°C
d. 45°C

9.10 According to FOSFA Heating instructions, lard should be discharged between the following temperatures :

a. 35 - 40°C
* b. 40 - 45°C
c. 45 - 50°C
d. 50 - 55°C

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9.11 **What types of heating media are allowed under the FOSFA Heating Instructions?**

a. Highly refined mineral oils
b. Thermal heating fluids
* c. Hot water and low pressure steam
d. Answers a., b. and c. are all correct

9.12 **Thermal heating fluids (heat transfer mineral oils) are not allowed to be used for heating oils and fats under FOSFA Heating Instructions.**

* a. True
b. False
c.
d.

9.13 **What are the recommended heating instructions to be used for shipment of oils and fats under FOSFA Contracts?**

* a. FOSFA Heating instructions
b. IASC Heating instructions
c. Intertanko Heating instructions
d. No particular heating instructions are recommended

9.14 **The type of heating medium in the heating coil is of no importance as long as the captain has declared through the FOSFA master combined certificate that his crew tested the heating coils and they are confirmed to have no leaks.**

a. True
* b. False
c.
d.

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SECTION 10 – LETTERS OF PROTEST AND LETTERS OF RESERVE

10.01 A letter of protest (LOP) can be defined as:

* a. A declaration by a party (Master, superintendent etc) holding another party responsible for some loss or damage that has already occurred
b. A declaration by the Master holding another party responsible for some loss or damage that is likely to occur
c. A written undertaking by a shipper to indemnify a carrier for any responsibility that the carrier may incur for having issued a clean bill of lading when the goods received were not as stated on the bill of lading
d. Answers a., b. and c. are all wrong

10.02 A letter of reserve (LOR) can be defined as:

a. A declaration by the Master holding another party responsible for some loss or damage that has already occurred
* b. A declaration holding another party responsible for some loss or damage that is likely to occur
c. A written undertaking by a shipper to indemnify a carrier for any responsibility that the carrier may incur for having issued a clean bill of lading when the goods received were not as stated on the bill of lading
d. Answers a., b. and c. are all wrong

10.03 A letter of protest (LOP) can be issued by the superintendent:

a. At discharge and delivery on behalf of a consignee who is unable to surrender original bills of lading which have been issued but lost
* b. Against stevedores or the carrier when some loss or damage has already occurred to the cargo
c. As an insurance letter: it will guarantee insurance will pay any losses
d. Answers a., b. and c. are all wrong

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10.04 **When inspecting wagons to be loaded into a shore tank, you note the crude vegetable oil has a unusual smell. What action should you take?**

a. Issue an LOP to the forwarders, advising the port/forwarders that cargo must not be loaded until further investigation is carried out
* b. Issue an LOR to the forwarders, advising the port/forwarders that cargo must not be loaded until further investigation is carried out
c. No action should be taken. Vegetable oils often have strange odours.
d. Advise the terminal representative

10.05 **You note that crude sunflower oil has been loaded at a higher temperature than the maximum permitted. Which of the following letters should you issue?**

* a. A LOP to the terminal
b. A LOP to the Master of the vessel
c. A LOR to the Master of the vessel
d. A LOR to the terminal

10.06 **After loading you find the calibration tables of the ship's tanks are not stamped by the authorities. Which of the following letters should you issue?**

a. A LOP
* b. A LOR
c. Both a LOR and a LOP
d. Answers a., b. and c. are all wrong

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10.07 **Upon arrival at the discharge port, a cargo of Crude Soya Bean Oil is found to have a temperature of 28°C. This (28°C) is also the ambient temperature. What should the CIF buyers' superintendent's do?**

a. Issue a letter of protest to the vessel as the temperature is above the permissible max temperature at time of discharge
b. Issue a letter of protest to shippers for supplying cargo with a temperature above the permissible max temperature at time of discharge
c. Issue a letter of reserve to warn the receiver that the cargo temperature is too high
* d. None of the above; as long as the temperature is the same as the ambient temperature, the measured temperature is acceptable

10.08 **After discharge and determination of the discharged weight by measuring the shore tank, you notice that there is a discrepancy (shortage) of 0.7% versus the B/L weight. Which of the following letters should you issue?**

a. A LOR to the Master of the vessel
* b. A LOP to the Master of the vessel
c. A LOP to the terminal
d. A LOR to the terminal

10.09 **To whom should you issue a LOP if cargo is spilled from the berth to the sea/dock:**

a. To the Master of the vessel
* b. To the tank terminal
c. To the seller
d. A LOP is not appropriate in this case. The harbour authority should be contacted

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10.10 **To whom should you issue a LOP if a tanker starts to load before all tanks which are destined to be loaded have been accepted:**

* a. To the Master of the vessel
b. To the tank terminal
c. To the seller
d. None of the above. Quickly complete inspection of the remaining tanks

10.11 **To whom should you issue a LOR If, after loading, you find that the calibration tables of the shore tanks are not stamped by the authorities/independent parties or that the date is expired.**

a. To the sellers
* b. To the tank terminal
c. To the Master
d. Answers a., b. and c. are all wrong. It is necessary only to advise the terminal manager

10.12 **The loading process is finished, the cargo weight is calculated and the vessel sails. After reviewing the calculation for reporting the superintendent realizes that the wrong tank calibration table was used. The table was provided by the terminal operator. What action should be taken by the superintendent?**

a. Issue LOP against terminal because they gave you the wrong tank table
b. Issue LOR against terminal because they gave you the wrong tank table
c. Do nothing - the vessel has already sailed away and there is nothing more you can do
* d. Inform your senior inspector/client you made a mistake and recalculate with the correct table

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10.13 Upon loading a vessel with a 2 days sailing time to discharge port, the temperature of the crude sunflower seed oil which is supplied to the vessel is measured at 2°C. If the superintendent is the Buyer's representative what action should he/she take?

a. FOSFA minimum discharge temperature is 15deg;C which will not be reached in 2 days. Request that loading is stopped, report the situation and await instructions from the Buyer. If loading continues issue a letter of protest to the suppliers

* b. Issue additional heating instructions to the vessel to accelerate heating during voyage in order to reach the desired minimum temperature at time of discharge

c. Instruct vessel to lengthen its transit time in order to reach the desired minimum temperature at time of discharge when tendering NOR at her discharge port

d. Take no action. As the oil was loaded at 2°C and will be heated on the voyage it will discharge without problems.

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SECTION 11 – ETHICS

11.01 Which of the following actions represents an ethical problem for a superintendent?

a. Changing the temperature of a shore tank when the PET has been found to be inaccurate
b. Changing the density of the cargo after finding an error in the calculations
* c. Changing the temperature of the cargo in a ship's tank because it is too far off the shore tank temperature
d. Answers a., b. and c. are all correct

11.02 The liquid level of a shore tank is changed in the raw data book after it is found to be wrong upon re-gauging. The original data is covered with white-out fluid and the correct information is written over the blanked-out data. Is this a permissible way to handle raw data corrections?

a. Yes
* b. No
c.
d.

11.03 When inspecting any cargo, which of the following represents sound ethical business conduct for a superintendent?

a. Making sure that the superintendent's results match the results required by the customer
* b. Making sure that the job is done according to industry standards
c. Making sure that the laboratory gets their sample on time
d. Answers a, b and c are all correct

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11.04 **The key person involved in managing ethics concerns in an inspection company is usually the Compliance Officer.**

* a. True
b. False
c.
d.

11.05 **‘Zero tolerance' means that any and all infractions of your company's regulatory compliance are subject to disciplinary action.**

* a. True
b. False
c.
d.

11.06 **IFIA member companies strictly prohibit any form of retaliation against any person who, in good faith, files a complaint under their regulatory compliance, or assists in a violation investigation.**

* a. True
b. False
c.
d.

11.07 **Changes to raw data cannot be made without a sound technical justification or re-measurement.**

* a. True
b. False
c.
d.

11.08 **Reported data must be backed up by, and be identical to, its raw data.**

* a. True
b. False
c.
d.

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11.09 **It is acceptable to alter raw data so that the results fall within the acceptable range contracted between the buyer and seller providing it is no more than 1% different from the original figure.**

a. True
* b. False
c.
d.

11.10 **It is acceptable to ignore a potential violation of your company's regulatory compliance program if the violation does not directly involve you.**

a. True
* b. False
c.
d.

11.11 **The compliance program established by your company requires that you comply with national regulations issued by agencies for the environment, food and agriculture, customs and excise authorities and agencies for occupational health and safety**

* a. True
b. False
c.
d.

11.12 **Which procedure is acceptable when raw data, such as dips or temperatures, must be corrected?**

a. Erase (white-out) the original measurements and write the correct measurements clearly over the blanked-out area
* b. Draw a single line through the original measurements so they can still be read and rewrite the correct measurements on the next line
c. Tear the original page out of the raw data book or pad and start again
d. Answers a, b and c are all wrong

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11.13 Following the completion of a marine vessel discharge operation, a representative who is witnessing your shore gauging activity requests that you change the observed tank product temperature reading that you obtained as he feels it is incorrect. What should you do?

a. Comply with his wishes
b. Use the observed temperature of the product on the vessel prior to discharge
* c. Inform him that you will re-check the product temperature if he requires but that you will record and use the product temperature that you have observed
d. Use the tank auto temperature reading instead

11.14 While sampling, a bottle is lost from your sampling device and it is now somewhere in the tank. What action should be taken?

a. Another bottle should be used and no other action taken
* b. The representative of the tank/vessel should be advised together with the inspector's supervisor
c. The representative of the tank/vessel should be advised and any papers provided by the representative should be signed
d. Attempts should be made to retrieve the bottle from the tank

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