



Course Test

2020 Water Well Applications

Houston, TX

Question 1

- Samples for sand content should be taken:

___ a. from the tank

___ b. at the pump suction

___ c. from the flow line

☒ d. b & c



Question 2

- The correct order of addition for mixing drilling fluid additives is:
 - ___ a. bentonite, surfactants, polymers
 - ___ b. soda ash, polymers, bentonite, surfactants
 - ___ c. surfactants, bentonite, soda ash, polymers
 - ☒ d. soda ash, bentonite, polymers, surfactants



Question 3

- The primary function of EZ-MUD® GOLD is:
 - ☒ a. shale & clay stabilization
 - ☐ b. thinner/dispersant
 - ☐ c. filtration control
 - ☐ d. viscosifier



Question 4

- Increase in drilled solids causes:

_____ a. smoother looking mud

_____ b. faster drilling rate

☒ c. thicker filter cake

_____ d. extended equipment life



Question 5

- The primary function of QUIK-TROL® GOLD LV is:
 - _____ a. thinner/dispersant
 - _____ b. viscosifier
 - ☒ c. filtration control
 - _____ d. shale/clay stabilizer



Question 6

- The density of fresh water is:

_____ a. 6.7 lb/gal

☒ _____ b. 8.34 lb/gal

_____ c. 8.0 lb/gal



Question 7

- When testing drilling fluids, the Marsh Funnel is used to:
 - ___ a. determine the filtration rate
 - ___ b. determine solids content
 - ☒ c. determine viscosity
 - ___ d. determine gel strengths



Question 8

- The funnel viscosity of freshwater is:

___ a. 24 sec/qt

☒ b. 26 sec/qt

___ c. 32 sec/qt



Question 9

- The desired pH of drilling muds is normally:
 - ☐ a. acidic
 - ☒ b. slightly alkaline, 8.5 – 9.5
 - ☐ c. neutral
 - ☐ d. about the same as Coca-Cola®



Question 10

- The mud balance is used to:
 - ☐ a. determine the carrying capacity of a drilling fluid
 - ☒ b. measure the mud density
 - ☐ c. determine thick or thin fluids
 - ☐ d. hammer small nails



Question 11

- Hard make-up water can be treated to increase the yield (viscosity building property) of clay by:

- ☒ a. pre-treating the water with soda ash
- ☐ b. pre-treating the water with lime
- ☐ c. pre-treating the water with salt
- ☐ d. pre-treating the water with vinegar



Question 12

- Key factor(s) in the control of drilling fluid properties for vertical applications during the drilling phase and the efficiency of the completion phase is the:
 - ☐ a. thinner used in the mud
 - ☐ b. degree and consistency of filtration control present during the drilling phase
 - ☐ c. non-reactive solids content in the mud
 - ☒ d. b & c



Question 13

- QUIK-GEL® is added to drilling fluids to:
 - ___ a. increase viscosity and establish a thin, low permeable filter cake
 - ___ b. reduce filtration rate and increase the carrying capacity of the fluid
 - ___ c. control seepage/loss of circulation to formation
 - ☒ d. all the above



Question 14

- When placing an annular seal in the vadose zone (unsaturated section of the geology) the bentonite sealing material that is best suited for this environment is:

- ☐ a. inhibited pumpable grouts
- ☐ b. dispersed pumpable grouts
- ☒ c. pumpable grouts with a solids content of 30% by weight
- ☐ d. HOLEPLUG® bentonite chips



Question 15

- High water loss/filtration rate from a drilling fluid:
 - ___ a. is of no major importance
 - ___ b. can result in more difficult well completion and development time
 - ___ c. results in a thick filter cake developed on exposed permeable formations
 - ☒ d. b & c



Question 16

- Under ideal conditions, drilling rate will be greater with:
 - ___ a. high mud weight
 - ☒ b. low mud weight
 - ___ c. medium mud weight



Question 17

- Contamination of a bentonite-based drilling fluid with gypsum (calcium) results in:
 - ___ a. reduced viscosity and pump pressure
 - ✓ ___ b. increased viscosity, increased pump pressure and flocculation of the bentonite
 - ___ c. hard mud
 - ___ d. lowered filtration rate



Question 18

- To minimize chances of lost circulation one should:
 - ___ a. use maximum mud weight and viscosity and run and pull pipe at high speeds
 - ☒ b. use minimum mud weight and viscosity and run and pull pipe at low speeds
 - ___ c. begin rotating the drill string only after bringing the pump online
 - ___ d. crank up the pump rate to out pump the losses



Question 19

- To reduce the funnel viscosity of a mud one could:
 - ___ a. add EZ-MUD®
 - ___ b. add QUIK-TROL® GOLD
 - ☒ c. add a thinner/dispersant such as AQUA-CLEAR® PFD
 - ___ d. add QUIK-GEL®



Question 20

- If no weighting material has been added, which of the following muds would be expected to deposit the thicker wall cake?

Fluid Properties	Mud A	Mud B	Mud C
Density, lb/gal	8.6	9.8	8.5
Marsh Funnel viscosity, sec/qt	35	30	40
Filtrate, ml/30 min	18	18	18

- ☐ a. Mud A
- ☒ b. Mud B
- ☐ c. Mud C



Bonus

- Drilling Fluids are used to (check all that applies):
 - ___ a. make a mess of the drilling location
 - ___ b. give your supplier's salesman a bonus
 - ☒ c. maintain borehole stability
 - ☒ d. Maximize wellbore value



THANK YOU

