
# 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

  ✓ (NOT) 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:
  - ____ 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