



PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Weightage: 20 %

Max Marks: 20

Max Time: 1 hr.

2 April Monday 2018

TEST – 2 (SET 1)

Even Semester 2017-18 Course: **PET 208 Oil and Gas Well Drilling** IV Sem. Petroleum
Technology

Instruction:

- (i) *Read the instruction carefully and answer accordingly.*
 - (ii) *Question paper consists of 3 parts.*
 - (iii) *Scientific and Non-programmable calculators are permitted*
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Part A

(5Q x 1 M = 5 Marks)

1. To remove the weighing materials which equipment we need in the mud circulatory system?
2. What is the use of “Mechanical Guns”?
3. What is the relationship between JOURNAL ANGLE AND SCRAPPING AND GAUGING actions of a drill bit?
4. If Fast line speed is “20*Y” and number of lines between travelling block and Crown block is 10 Then find out the speed of Travelling block.
5. “**6x19**”- What does it means in case of Drilling Line?

Part B

(3Q x 2 M =6 Marks)

6. Define fleet angle also mention about the minimum required Fleet angle to optimize drum spooling?
7. Write down different classification of drilling bit.
8. What is Journal angle? What is the recommended value of Journal angle for Soft and Hard formation?

Part C

(ANY TWO)

(2Q x4.5 M=9 Mark)

9. Explain the “Drilling mud conditioning system” with a neat diagram.
10. To drill the abnormal pressure zone the mud engineer decided to add Ilmanite with the drilling mud so that mud weight increase from 15 ppg to 22 ppg. If the initial volume of drilling mud is 3.6905 bbl. Find out the “NO OF SACKS” of Ilmanite required to do the necessary increment of mud weight.
- Once the abnormal pressure zone has been drilled, they again need to reduce the mud weight to 15 ppg. For that they are adding Water with the drilling mud. Find out the volume of water required to do the necessary reduction.

[DENSITY OF WATER= 8.33 ppg; DENSITY OF BARITE=35]

11. A hoisting system having a Crown block of weight 25,000 lbs. and travelling block with 15,000 lbs. is present at an onshore rig. Prior to do actual drilling operation it is run into a dry hole. Air weight of a drill string is 4, 00,000 lbs. If the number of pulleys in the Crown block is 5 and efficiency coefficient of each pulley is 96% and Find out the Hook load, dead line load and Dynamic Crown load when the hoisting system is at a dynamic condition. Efficiency of the entire system is 80%.
12. Write two difference between
- Desender and Desilter.
 - LANG LAY AND ORDINARY LAY