

Overview of the Petroleum Industry - Test # 3

Please turn test in on Saturday, Oct 15 at the end of class

Name _____

Textbook – The Oil and Gas Industry, A Nontechnical Guide

Please write your answers on this page

Please read Chap 5 (Drilling on land) and 6 (Drilling Offshore)

1. True or False. Before drilling can start, the site needs to be prepared. pg. 67
2. True or False. An acre is 60,000 square feet and is equal to a square section 500 ft. by 500 ft.
3. Draw a schematic of a drilling rig, like Fig 5-3, showing prime movers, lifting system, pumping circulation system, mud filtration system, rotating system, BOP system. Will do on board in class

4. True or False. A drill bit is used on rig floor while drilling. Pg. 74-75.
5. True or False. Tripping is pulling the pipe in and out of the hole. Pg. 78
6. Draw a schematic of mud circulation system – surface and downhole. Pg. 78-79

7. Describe what a “blowout” is and how we prevent it from occurring. Pg. 79-81.

8. True or False. To directionally drill, a bent sub and mud motor are used to turn the bit. Stabilizers centralize the pipe. Pg. 82-83

9. True or False, Extended reach means drilling a vertical hole straight down under the rig. Pg. 85
10. List 6 drilling problems. Pg. 86
11. Describe why wells are tested. Pg. 87
12. Draw a wellbore schematic like Fig 5-17, showing casing, cement, liner, perforations, packer, tubing, SCSSV, Christmas tree. Will be done on board in class
13. True or False. Acidizing (HCl and HF) dissolves materials that restrict the flow of oil and gas in to the well. Pg. 93
14. True or False. Hydraulic fracturing increases the porosity and permeability of the well. Pg. 93-98
15. Briefly describe the hydraulic fracturing process and results. Pg. 93-98
16. True or False. Exploration rigs for offshore are barges, drill ships, jack up rigs and semi-submersibles. Pg. 99

17. True or False. A MODU is a modular organic digging uniform
18. Draw a schematic of a jack up drilling rig and explain how it works. Pg. 100-101
19. Describe what a semi-submersible rig is and the water depth capability. Pg. 100-102
20. True or False. Subsea wells are connected together by pipelines on the ocean floor and are often tied in to a FPSO. Pg. 104-105
21. True or False. Fixed steel jacket platforms are used in ultra-deep water (over 5000 ft.). pg. 105-106
22. True or False. Gravity based platforms float in the waves the primary component of natural gas is methane, known as CO₂. Pg. 29
23. True or False. TLPs are like platforms in deep water. Pg. 108
24. Describe the purpose of a FPSO. Pg. 111-112
25. Draw a schematic of a subsea wells and a FPSO. Pg. 105, Fig 6-10

Maximum test score is 100 points. Each question is 4 points