

FINAL EXAMINATION REVIEW QUESTIONS

*For students of
Petroleum Engineering MSc*

Drilling Engineering Topic

1. Question

Drilling Engineering

Shortly introduce the usable methods to kill a well. Describe the steps of "Drillers Method" on the basis of pressure diagram, draw the MAASP curve also! What are the differences if the well is horizontal?

2. Question

Drilling Engineering

Shortly introduce the usable methods to kill a well. Describe the steps of "Wait and Weight Method" on the basis of the pressure diagram, draw the MAASP curve also! What are the differences if the well is horizontal?

3. Question

Drilling Engineering

Explain the theoretical and practical methods for determining the formation fracturing pressure gradient and introduce the different methods of casing shoe depth determination.

4. Question

Drilling Engineering

During the life of a well which stresses should be considered in the sizing of casing string. Explain the graphical method of casing string design. What loading do you have to check your final selection for?

5. Question

Drilling Engineering

What are the basic functions and parameters of a drilling mud? Introduce the most common used fluid behavior models? Draw the typical rheological curves!

6. Question

Drilling Engineering

Explain what is the difference between a blowout and a kick. What is the behavior of gas in the well? How do the pressures change during the migration of the gas in an open and in a closed well? What is the shut in casing pressure depend on?

7. Question

Drilling Engineering

Describe the one-stage and liner primary cementing methods. What is the importance to select these methods? What are the different ways of mud removal?

8. Question

Drilling Engineering

Describe the two-stage and stinger primary cementing methods. What is the importance to select these methods? What are the pressure conditions during these cement job.

9. Question

Drilling Engineering

Describe the characteristics of roller cone bits and fixed cutter bits. Introduce the IADC bit classification code system.

10. Question

Drilling Engineering

What are the main drill bit damages during drilling? Introduce the IADC dull bit grading system for roller cone bits and fix cutter bits.

11. Question

Drilling Engineering

Draw the directional and horizontal drilling typical well paths. Explain the bottomhole assemblies usable for the different horizontal well sections.

12. Question

Drilling Engineering

Introduce the typical well completions for flowing well. What are the usable well completion surface equipment and downhole tools?

Information

There is no preparation time during the final exam to develop the Questions.

The collection of formulas compiled by the Institute may be used for the final examination.

Recommended literature on topics

- H. Rabia: Oilwell Drilling Engineering. Principles and Practice. Graham Tratman Ltd. London, 1995. 322 p.
- Howard B. Bradley: Petroleum Engineering Handbook, Third Printing, Society of Petroleum Engineers, Richardson, TX, U.S.A. 1992.
- Drilling Data Handbook, Edition Technip, Paris ISBN 2-2108-0756-4, 1999. 542 p.
- Erik B. Nelson: Well Cementing. Schlumberger Educational Services. Second Edition, Houston Texas, 2006.
- R. DiPippo: Geothermal Power Plants, Butterworth-Heinemann 2012.
- Arthur Lubinski (Edited by Stefan Miska): Development of Petroleum Engineering I-II. Gulf Publishing Company, Houston, 1987.
- T. Bell, D. Eby, J. Larrison, B. Ranka: Blowout Prevention, 4th Ed. ISBN 0-88698-242-1. 2009.
- R. Baker: Practical Well Control, 4th Ed. ISBN 0-88698-183-2. 1998.
- R. Grace: Blowout and Well Control Handbook, Gulf Publishing Company, ISBN: 0750677082.
- R. D. Grace: Advanced Blowout & Well Control, Gulf Publishing Company, 1994, ISBN 0-88415-260-X
- Well control and blowout prevention, training manual, Petroleum Engineering Department

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