Objective Questions in Petroleum Engineering
(Important Multiple Choice Questions with Answers)

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Preface

This book contains numerous important questions which have been methodically prepared/selected from different text books, manuals of petroleum industries, SPE technical papers and teaching materials of distinguished persons. These questions are very relevant for promoting fundamental understanding of petroleum engineering. The various topics covered in this book are petroleum exploration, oil & gas well drilling, reservoir engineering, offshore oil & gas operations, petroleum production engineering, oil & gas well testing, enhanced oil recovery techniques, health, safety & environment in petroleum industries, and latest trends in petroleum industry. It contains objective type theoretical and numerical questions based on basic concepts & latest trends in the petroleum exploration and production industries.

This book will be primarily useful for fresh graduates of petroleum engineering who can prepare themselves soundly for both written as well as oral examinations. At the same time this can be used as readily available handbook for quick reference by practicing engineers. There is no other comprehensive book available of this format in petroleum engineering discipline which can build basic concepts of all the important courses of petroleum engineering.

I would like to acknowledge the head of the department for his kind support. I also wish to acknowledge the contribution of Mr. Rajat Jain, Senior Research Fellow, who has helped in typing the contents of this book.

I shall greatly appreciate being informed of suggestions for the improvement of the book.

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Dr Vikas Mahto is an Associate Professor in the Petroleum Engineering Department of Indian School of Mines Dhanbad, India. He has received his Ph.D. Degree in Petroleum Engineering from Indian School of Mines Dhanbad in 2004. He is having more than 12 Years of Experience in the field of Chemical Engineering and Petroleum Engineering. He is the author of more than 100 technical papers in different national/international journals & conferences of repute. He has completed three research projects sponsored by UGC-ISM, UGC New Delhi and CSIR New Delhi and currently working on collaborative R&D project with Oil India Ltd, Dulhajan, Assam. He has filed two Indian patents in his name. Two students have awarded their Ph.D. Degree in petroleum Engineering under his supervision and eight students are pursuing their Ph.D. work under his guidance. He is the reviewer and member of editorial boards of many national and international journals.
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CHAPTER 1

Petroleum Exploration

1. Which of the following rock favors petroleum formation?
   a) Sedimentary rock
   b) Igneous rock
   c) Metamorphic rock
   d) None of the above

2. Which of the following is a type of sedimentary rock?
   a) Organic rock
   b) Chemical rock
   c) Clastic rock
   d) All of the above

3. The set of processes transforming sediment into rocks is called
   a) Lithification
   b) Hydrolysis
   c) Cementing
   d) None of the above

4. The formation of bed created by wind that changes direction and the layers meet at different angles is known as
   a) Cross bedding
   b) Graded bedding
   c) Both (a) and (b)
   d) None of the above

5. The formation of horizontal or nearly horizontal layers of bed at the time of deposition, in which the coarsest particles are concentrated at the bottom and grade gradually upward into fine silt is known as
   a) Cross bedding
   b) Graded bedding
   c) Both (a) and (b)
   d) None of the above

6. A source rock that is too immature to generate petroleum in its natural setting is known as
   a) Potential source rock
   b) Effective source rock
   c) Both (a) and (b)
   d) None of the above

7. A source rock that has already formed and expelled petroleum to a reservoir is known as
   a) Potential source rock
   b) Effective source rock
   c) Both (a) and (b)
   d) None of the above

8. Which of the following is most abundant sedimentary rock found in the earth's crust?
   a) Sandstone
   b) Shale
   c) Limestone
   d) None of the above
9. Which of the following is not among the basic type of organic matters in sediments?
   a) Type I
   b) Type III
   c) Type V
   d) Type IV

10. Which of the following type of organic matters in sediments include ancient oil shales of marine origin?
    a) Type I
    b) Type II
    c) Type III
    d) Type IV

11. ______ includes the principle source sediments for oil.
    a) Type I
    b) Type II
    c) Type III
    d) Type IV

12. Which of the following is an important method for geochemical exploration of oil?
    a) Geothermal survey
    b) Radioactivity Survey
    c) Both (a) and (b)
    d) None of the above

13. Oil and gas are found in ______
    a) Shale
    b) Sand
    c) Granite
    d) Sulfur

14. Reservoir rock containing petroleum has
    a) Low permeability
    b) High permeability
    c) High porosity
    d) Both (b) and (c)

15. Which of the following is true about primary porosity?
    a) Remains in place after deposition and pores are connected
    b) Part of the rock is dissolved after deposition.
    c) Pores are not connected
    d) None of the above

16. Which of the following is true about secondary porosity?
    a) Part of the rock is dissolved after deposition and pores are not connected
    b) Remains in place after deposition and pores are connected
    c) Both (a) and (b)
    d) None of the above

17. Which of the following is a type of primary porosity?
    a) Intercrystalline porosity
    b) Moldic Porosity
    c) Intraparticle porosity
    d) None of the above

18. Which of the following is a type of secondary porosity?
    a) Intergranular porosity
    b) Intraparticle porosity
    c) Intercrystalline porosity
    d) None of the above