


Table of Contents



About the Pump Systems Assessment Professional (PSAP) Exam	viii
Test-taking Skills and Strategies	xii
PSAP Exam Sample Test – Answer Sheet	xiv
PSAP Exam Sample Test	xv
PSAP Exam Sample Test – Answer Key	xxi
PSAP Exam Sample Test Correct Answer Explanations	xxii
Domain I – Information/Data Gathering	xxix
Introduction to pump systems assessment	
1. Pump types	1
2. Pump system components and their interactions	5
3. Standard pump system operating procedures	8
4. Benefits of pump system optimization	10
5. Factors that impact pump and pump system efficiency and reliability	12
6. Elements of lifecycle costing	33
7. Basic pump maintenance practices	38
8. System drawings, schematics, and diagrams	40
9. Key personnel (positions) needed on an assessment team	43
10. Field measurement parameters and their acceptable ranges	47
11. Hydraulic and electrical formulae	48
12. Measuring devices and their requirements and proper application	56
13. Common operating problems and errors	63
Domain I Summary and Knowledge Check	66
Domain II – Data Analysis	74
14. Pump and motor performance curves	75
15. System curves	83

16. Parameter Estimation, Data (Electrical, Vibration, Thermography, Etc.), and Its Relationship to Reliability	88
17. Reliability metrics	89
18. Currently available equipment and technology	91
19. Basic financial analysis	92
20. Utility rate structures and incentives	94
21. Principles and techniques of prioritizing solutions	95
22. Elements and layout of a pump systems assessment report	97
Domain II Summary and Knowledge Check	98
Domain III – Post-assessment	104
23. Presentation techniques	105
24. Techniques for assisting clients in aligning goals and strategies with assessment recommendations	106
25. Implementation strategies	107
Domain III Summary and Knowledge Check	110
Appendix A: Pump Systems Assessment Professional Job Task Analysis (JTA)	111
Appendix B: Useful Formulas and Conversions	120
Appendix C: References	123
Index	125