PHFO Quantitative Analysis For Business Pre-Assessment Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here’s how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don’t just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. In the payoffs under a favorable market, which option yields the smallest payoff?

A. Large Plant (13)

B. Small Plant (5)

C. Subcontracting (7)

D. None

2. What is the median of the data set {3, 7, 5, 1, 9}?

A. 3

B. 7

C. 5

D. 1

3. What is the median of the data set 70, 85, 98, 70, 82?

A. 70

B. 82

C. 85

D. 98

4. What is the median of the data set {3, 8, 1, 6, 5}?

A. 4

B. 5

C. 6

D. 3

5. What is the mean of the data set {4, 7, 7, 2, 9}?

A. 5.8

B. 5.0

C. 6.2

D. 5.5

6. What is the multiplication rule for independent events?

A. $P(A \cap B) = P(A) + P(B)$

B. $P(A \cap B) = P(A)P(B)$

C. $P(A \cap B) = \max(P(A), P(B))$

D. $P(A \cap B) = P(A) - P(B)$

7. Ha: μ > 50 implies what type of statistical test?

A. One-sided test

B. Two-sided test

C. Nonparametric test

D. Paired test

8. In a binomial distribution with n = 5 and p = 0.4, what is P(X = 3)?

A. 0.1536

B. 0.2304

C. 0.3456

D. 0.2300

9. What is the objective function in the linear program with two decision variables X1 and X2?

A. Max Z = X1 + X2

B. Min Z = X1 + X2

C. Max Z = 2X1 + 3X2

D. Min Z = 2X1 + 3X2

10. In a hospital renovation project using PERT data, what is the expected completion time for activity A given optimistic 7, most likely 9, pessimistic 14 days?

A. 7.5 days

B. 9.5 days

C. 10.0 days

D. 12.0 days

Answers

1. B
2. C
3. B
4. B
5. A
6. B
7. A
8. B
9. A
10. B

Explanations

1. In the payoffs under a favorable market, which option yields the smallest payoff?

A. Large Plant (13)

B. Small Plant (5)

C. Subcontracting (7)

D. None

When market conditions are favorable, each production option comes with a specific payoff you can compare directly. The Large Plant yields 13, the Small Plant yields 5, and Subcontracting yields 7. Among these, 5 is the smallest value, so the Small Plant option provides the smallest payoff. (The "None" choice would be 0, but the question focuses on the active production choices, where the smallest payoff among them is 5.)

2. What is the median of the data set {3, 7, 5, 1, 9}?

A. 3

B. 7

C. 5

D. 1

To find the median, arrange the numbers from smallest to largest and take the middle value. With five numbers, the middle is the third item. Sorting {3, 7, 5, 1, 9} gives 1, 3, 5, 7, 9, so the third value is 5. The median is 5.

3. What is the median of the data set 70, 85, 98, 70, 82?

A. 70

B. 82

C. 85

D. 98

To find the median, you first sort the data and then pick the middle value. With five numbers, the middle is the third one in the ordered list. Sorting gives 70, 70, 82, 85, 98, so the middle value is 82. Therefore, the median is 82. The other numbers are the smallest, the largest, and a value adjacent to the middle, but the central value in the ordered set is what defines the median here.

4. What is the median of the data set {3, 8, 1, 6, 5}?

A. 4

B. 5

C. 6

D. 3

The median is the value that splits an ordered data set into two equal halves. For an odd number of observations, it's the middle value. First, sort the numbers: 1, 3, 5, 6, 8. There are five values, so the middle position is the third one. That value is 5, so the median is 5. In general, if there were an even number of values, you'd take the average of the two middle numbers.

5. What is the mean of the data set {4, 7, 7, 2, 9}?

A. 5.8

B. 5.0

C. 6.2

D. 5.5

Mean is the arithmetic average, found by adding all values and dividing by how many data points there are. For this set, 4 + 7 + 7 + 2 + 9 = 29. There are 5 numbers, so the mean is 29 ÷ 5 = 5.8. That value is the actual average of the data, matching the option that lists 5.8. The other numbers would require a total of 25, 31, or 27.5, which doesn't equal the sum of these values. The mean reflects every data point, balancing the highs and lows to a central value.

6. What is the multiplication rule for independent events?

A. $P(A \cap B) = P(A) + P(B)$

B. $P(A \cap B) = P(A)P(B)$

C. $P(A \cap B) = \max(P(A), P(B))$

D. $P(A \cap B) = P(A) - P(B)$

When two events are independent, the chance that both occur is the product of their individual probabilities. The likelihood of A and B happening together is $P(A \cap B) = P(A) \times P(B)$. This captures the idea that knowing B did occur doesn't change how likely A is, and vice versa. For example, flip a fair coin (P(A) = 0.5) and roll a fair die (P(B) = 1/6). The probability both happen is $0.5 \times 1/6 = 1/12 \approx 0.0833$. The other expressions don't describe the intersection probability in general: addition is related to the probability of the union (with a correction for overlap), the maximum isn't the intersection, and subtraction isn't a rule for the joint probability of independent events.

7. Ha: $\mu > 50$ implies what type of statistical test?

A. One-sided test

B. Two-sided test

C. Nonparametric test

D. Paired test

In hypothesis testing, the direction of the alternative hypothesis determines whether the test is one-sided or two-sided. If the alternative says the mean is greater than 50, you're specifically looking for evidence that the mean lies in that upper direction. That means you use a one-sided (right-tailed) test, because you reject the null only when the test statistic shows a value far enough above the threshold to support $\mu > 50$. The null hypothesis would typically be $\mu \leq 50$ in this setup. A two-sided test would have an alternative like $\mu \neq 50$, which looks for deviations in either direction and uses both tails of the distribution. The terms nonparametric or paired refer to the method or study design, not the direction of the alternative, so they don't define the test type here.

8. In a binomial distribution with n = 5 and p = 0.4, what is P(X = 3)?

A. 0.1536

B. 0.2304

C. 0.3456

D. 0.2300

In a binomial scenario, the chance of exactly k successes in n independent trials is found by combining the ways to choose which trials are successes with the probability of that specific configuration. Here, to have exactly 3 successes out of 5 with a success probability of 0.4: - There are C(5,3) = 10 ways to pick which three trials are successes. - The probability of any particular set of three successes and two failures is (0.4)^3 × (0.6)^2 = 0.064 × 0.36 = 0.02304. Multiply the number of ways by this probability: 10 × 0.02304 = 0.2304. So, P(X = 3) = 0.2304 (about 23.04%).

9. What is the objective function in the linear program with two decision variables X1 and X2?

A. Max Z = X1 + X2

B. Min Z = X1 + X2

C. Max Z = 2X1 + 3X2

D. Min Z = 2X1 + 3X2

A linear program optimizes a quantity called the objective, written as a linear combination of the decision variables. With two variables X1 and X2, the objective is typically Z = c1·X1 + c2·X2, and you choose whether to maximize or minimize Z. The best choice here is the form that maximizes Z using both variables with simple unit coefficients: Max Z = X1 + X2. This fits the standard structure Z = c1·X1 + c2·X2 for a maximization problem, using both X1 and X2 with positive weights. The other options either switch to minimizing the objective or use different coefficients, which change the objective but aren't the specified maximization form.

10. In a hospital renovation project using PERT data, what is the expected completion time for activity A given optimistic 7, most likely 9, pessimistic 14 days?

A. 7.5 days

B. 9.5 days

C. 10.0 days

D. 12.0 days

The PERT approach uses a weighted average where the most likely duration has the greatest influence: E = (O + 4M + P) / 6. With optimistic 7 days, most likely 9 days, and pessimistic 14 days, you get E = (7 + 4×9 + 14) / 6 = (7 + 36 + 14) / 6 = 57 / 6 = 9.5 days. So the expected completion time is 9.5 days. This weighting pulls the estimate toward the most probable duration, reflecting the belief that 9 days is the best realistic duration while still accounting for uncertainty from the optimistic and pessimistic bounds. For comparison, a simple average of the three values would give 10 days, which demonstrates why PERT uses the 4M weight to produce a slightly lower/weighted estimate.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://phfoquantanalysis4business.examzify.com

We wish you the very best on your exam journey. You've got this!