

EXAM  
CODE **356**

CATALOG  
NUMBER **PSYx365**

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**PRACTICE  
EXAMS**

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# Research Methods in Psychology

CREDIT  
HOURS

**3**

LEVEL

**UPPER**

PUBLISHED FEBRUARY 2021

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## SECTION ONE

# Preparing for the Exam

## Before You Choose This UExcel Exam

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### Uses for the Examination

- Excelsior College, the test developer, recommends granting three (3) semester hours of upper-level undergraduate credit to students who receive a letter grade of C or higher on this examination.
- Other colleges and universities also recognize this exam as a basis for granting credit or advanced standing.
- Individual institutions set their own policies for the amount of credit awarded and the minimum acceptable score.

Examinees who have applied to Excelsior College should ask their academic advisor where this exam fits within their degree program.

Examinees **not enrolled** in an Excelsior College degree program should check with the institution from which they wish to receive credit to determine whether credit will be granted and/or to find out the minimum grade required for credit. Those who intend to enroll at Excelsior College should ask an admissions counselor where this exam fits within their intended degree program.

For more information on exam availability and actual testing information, see the [Exam Registration and Information Guide](#).

### Examination Length and Scoring

This examination consists of 120 multiple choice and other type questions. You will have two (2) hours to complete the exam. Your score will be reported as a letter grade. Questions are scored either correct (1) or incorrect (0). There is no partial credit. Each credit-bearing exam contains pretest questions, which are embedded throughout the exam. They are indistinguishable from the scored questions. It is to your advantage to do your best on all the questions. Pretest questions are being tried out for use in future versions of the exam.

The UExcel exams do **not** have a fixed grading scale such as A = 90–100%, B = 80–90%, and so forth, as you might have seen on some exams in college courses. Each UExcel test has a scale that is set by a faculty committee and is different for each exam. The process, called standard setting, is described in more detail in the [Technical Handbook](#). Excelsior puts each exam through a standard setting because different test questions have different levels of difficulty. To explain further, getting 70% of the questions right on the exam when the questions are easy does not show the same level of proficiency as getting 70% of questions correct when the questions are hard. Every form of a test (a form contains the test questions) has its own specific grading scale tailored to the particular questions on each exam form.

Please also note that on each form, some of the questions (referred to as pretest questions) count toward the score and some do not; the grading scale applies only to those questions that count toward the score. The area with percentage ratings on the second page of your score report is intended to help identify relative strengths and weaknesses and which content areas to emphasize, should you decide to take the examination again. Your grade

is **based on only the scored questions**. Therefore, the percentage ratings do not necessarily reflect the total percentage that counted toward your grade.

For the best view of the types of questions on this exam, see the sample questions in the back of this guide. Practice, practice, practice!

## Score Reporting

For most of our examinations, based on performance, an examinee is awarded a letter grade of A, B, C, or F. A letter grade of D can be given, but credit is awarded for A, B, and C letter grades only. The letter grades reported to examinees indicate that their performance was equivalent to the performance of students who received the same letter grade in a comparable, on-campus course.

More specifically, the letter grade indicates the examinee's proficiency relative to the learning outcomes specified in the exam content guide. Following are general descriptions of examinee performance at each level:

## Letter Grade Description

- A Highly Competent: Examinee's performance demonstrates an advanced level of knowledge and skill relative to the learning outcomes.
- B Competent: Examinee's performance demonstrates a good level of knowledge and skill relative to the learning outcomes.
- C Marginally Competent: Examinee's performance demonstrates a satisfactory level of knowledge and skill relative to the learning outcomes.
- D Not Competent (no credit recommended): Examinee's performance demonstrates weak knowledge of the content and minimal skill relative to the learning outcomes.<sup>①</sup>
- F Fail (no credit recommended): Examinee's performance demonstrates no knowledge of the content and no skill in the subject relative to the learning outcomes.

Credit is transcribed by Excelsior College for examinees who achieve letter grades of C or higher.

We encourage colleges and universities to use the Excelsior College letter grades of A, B, and C as acceptable standards for awarding credit.

<sup>①</sup> In general, two-hour exams do not award a D letter grade.

See page 32, at the back of this content guide, for a sample UExcel Grade Report for Examinations.

## Excelsior College Bookstore

The Excelsior College Bookstore offers recommended textbooks and other resources to help you prepare for UExcel exams.

The bookstore is available online at (login required): [www.excelsior.edu/bookstore](http://www.excelsior.edu/bookstore)

## Excelsior College Library

Library services are available to students enrolled in a degree program at Excelsior College. Created through our partnership with the Sheridan Libraries of The Johns Hopkins University, the library provides access to journal articles, books, websites, databases, reference services, and many other resources. To access the Excelsior College Library, visit [www.excelsior.edu/library](http://www.excelsior.edu/library) (login is required). Access to the library is available 24/7.

## Take Charge of Your Own Learning

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At Excelsior College, independent, self-directed study supported by resources we help you find is not a new concept. We have always stressed to students who take exams that they are acting as their own teacher, and that they should spend as much time studying for an exam as they would spend in a classroom and on homework for a corresponding college course in the same subject area.

Begin by studying the content outline contained in this content guide, at its most detailed level. You will see exactly which topics are covered, and where chapters on those topics can be found in the Recommended Resources. You will see exactly where you might need to augment your knowledge or change your approach.

The content outline, along with the learning outcomes for this exam and recommended textbooks, will serve as your primary resources.

## How Long Will It Take Me to Study?

Study for a UExcel exam is comparable to an equivalent college-level course. As an independent

learner, you should study and review as much as you would for the same subject in a campus-based college course. If you already have a background in the subject, you may be able to pass the exam successfully with fewer hours of study. It depends upon the learner as well as the subject, the number of credits (for example, a 6- or 8-credit exam will require more hours of study than a 3-credit exam), and the length of the exam. We strongly encourage you to create a long-term action or study plan, so that you have a systematic approach to prepare for the exam. We've included guidelines for creating such a plan.

## How Can I Create an Effective Long-Term Study Plan?

**1. Determine the time you will require to complete your preparation for this exam.** If you have not studied the subject before, you should plan to budget approximately 45 hours of study time for every credit: 135 hours for 3 credits, 180 hours for 4 credits, 270 hours for 6 credits, and 360 hours for 8 credits. These hours are rules of thumb based on expectations for a student taking a course in the subject; it may take you more or less time, depending on how familiar you are with the material and how easily you absorb the information studying on your own. Aside from the content review, you should then factor in time to search for and use other resources, and to complete any projects and assignments in the study materials that will clarify your understanding of the topics in the content outline (that part in the content guide where the specific areas of study are spelled out). Spend more time on concepts and areas in which you feel you are weak. Totaled, this is approximately the amount of time you should expect to devote to a three-credit, campus-based course. The actual amount of time you require depends on many factors, and will be approximate. If your background is weak, you may need to set aside substantially more than 135–150 hours. If your background is strong, you may budget less time.

Take a few minutes to review the content outline to assess your familiarity with the content. Then, in the space below, write the number of hours you will allocate to complete preparing for the exam.

Hours Required =

## 2. Determine the time you will have available for study.

In self-study, you need structure, as well as motivation and persistence, and a methodical approach to preparation. There is no set class to keep you on task. You have to do that yourself. Construct a time-use chart to record your daily activities over a one-week period. The most accurate way to do this is to complete the chart on a daily basis to record the actual amount of time you spend eating, sleeping, commuting, working, watching television, caring for others and yourself, reading, and everything else in an adult's life. However, if your schedule is regular, you might prefer to complete the chart in one sitting and, perhaps, by consulting your appointment book or planner.

After you have recorded your activities, you will be ready to schedule study periods around these activities or, perhaps, instead of some of them. In the space below, write the number of hours you will be able to set aside for study each week.

Hours Required =

## 3. Divide the first number by the second number.

This will give you the number of weeks you will need to set aside for independent study. For example, if you think you will require 170 hours of study and you have 10 hours available to study each week, divide 170 hours by 10 hours and you will get 17. This means that you will need about 17 weeks to complete this course of study. However, you will also need to allow about a week for review and self-testing. Moreover, to be on the safe side, you should also add two weeks to allow for unforeseen obstacles and times when you know you will not be able to study (e.g., during family illnesses or holidays). So, in this case, you should allot a total of 18 to 19 weeks to complete your study.

## 4. Schedule your examination to coincide with the end of your study period.

For example, if you plan to allow 18 weeks for study, identify a suitable examination date and begin study at least 18 weeks before that date. (The date you begin study assumes that you will have received all of your study materials, particularly textbooks, by that time.)

### **5. Format a long-term study plan.**

You will need to use a calendar, planner, or some other tool to format and track your long-term study plan. Choose a method that is convenient and one that keeps you aware of your study habits on a daily basis. Identify the days and exact hours of each day that you will reserve for study throughout your whole independent study period. Check to see that the total number of hours you designate for study on your long-term study plan adds up to the number of hours you have determined you will need to complete this course of study (Step 1).

### **6. Record in your long-term study plan the content you plan to cover during each study period.**

Enter the session numbers, review, and examination preparation activities you will complete during each study period. While it is suggested that approximately 160–170 hours of study is required for this exam, each and every student may require different timelines based on their comfort with, and comprehension of, the material.

You now have a tentative personal long-term study plan. Keep in mind that you will have to adjust your study plan, perhaps several times, as you study. It is only by actually beginning to work systematically through the material, using the content outline, that you will be able to determine accurately how long you should allow for each unit.

## **What Learning Strategy Should I Use?**

The following guidelines are intended to help you acquire the grounding in the knowledge and skills required for successful completion of this examination.

### **1. Approach learning with a positive attitude.**

Most students are capable of learning subject content if they devote enough time and effort to the task. This devotion will give you a positive edge and a feeling of control.

### **2. Diligently complete the exact work you specified in your study plan.**

Your study plan is being designed for the specific purpose of helping you achieve the learning outcomes for this exam.

### **3. Be an active learner.**

You should actively engage in the learning process. Read critically, take notes, and continuously monitor your comprehension. Keep a written record of your progress, highlight content you find difficult to grasp, and seek assistance from someone in your learning community who can help you if you have difficulty understanding a concept.

### **4. Be patient: you may not understand everything immediately.**

When encountering difficulty with new material, be patient with yourself and don't give up. Understanding will come with time and further study. Sometimes you may need to take a break and come back to difficult material. This is especially true for any primary source material (original letters, documents, and so forth) that you may be asked to read. The content outline will guide you through the material and help you focus on key points. You will find that many concepts introduced in earlier sessions will be explained in more detail in later sessions.

### **5. Apply your learning to your daily life.**

Use insights you gain from your study to better understand the world in which you live. Apply the learning whenever you can. Look for instances that support or contradict your reading on the subject.

### **6. Accommodate your preferred way of learning.**

How do you learn best? Common ways to learn are reading, taking notes and making diagrams, and by listening to someone (on video or live). Others learn by doing. Do any of these descriptions apply to you? Or does your learning style vary with the learning situation? Decide what works for you and try to create a learning environment to accommodate your preferences.

## **Study Tips**

Become an active user of the resource materials. Aim for understanding rather than memorization. The more active you are when you study, the more likely you will be to retain, understand, and apply the information.

The following techniques are generally considered to be active learning:

- **preview or survey** each chapter

- **highlight or underline text** you believe is important
- **write questions or comments** in the margins
- **practice re-stating content** in your own words
- **relate what you are reading** to the chapter title, section headings, and other organizing elements of the textbook
- **find ways to engage** your eyes, your ears, and your muscles, as well as your brain, in your studies
- **study with a partner or a small group**
- **prepare your review notes** as flashcards or create recordings that you can use while commuting or exercising

When you feel confident that you understand a content area, review what you have learned. Take a second look at the material to evaluate your understanding. If you have a study partner, the two of you can review by explaining the content to each other or writing test questions for each other to answer. Review questions from textbook chapters may be helpful for partner or individual study, as well.

Study smart for your UExcel exam! Success starts with establishing a relationship with your advisor.

## Using UExcel Practice Exams

The official UExcel practice exams are highly recommended as part of your study plan. They can be taken using any computer with a supported web browser such as Google Chrome.

The practice exam package comes with two sets of questions. Please be aware that there will be fewer questions on the practice exams than there will be on the exam you take for credit. Generally, the practice questions will not be the same as the ones you will see when you take the actual exam for credit. They are intended to expose you to the types of questions you'll encounter in the actual exam. Practice questions are a tool, and do not provide a full exam experience. For example, the practice question sets do not have time limitations. Begin with the Content Guide, especially the detailed content outline. Memorizing specific questions and answers on the practice sets is not as effective as using the questions to practice, along with the content outline, to see which concepts you may need to study further. To register for the practice exam, visit [www.excelsior.edu](http://www.excelsior.edu) and log into your MyExcelsior

account. **Please note: You must be registered for the corresponding credit-bearing exam before you can register for the practice exam.**

Practice exams are not graded. Rather, they are intended to help you make sure you understand the subject and give you a sense of what the questions will be like on the exam for credit. Ideally, you would check any questions you got wrong, look at the explanations, and go back to the textbook to reinforce your understanding. After taking both forms of the practice exam, you should feel confident in your answers and confident that you know the material listed in the content outline.

Practice exams are one of the most popular study resources. Practice exams are typically shorter than the credit-bearing exam. Since the questions are drawn from the same pool of questions that appear on the credit-bearing exam, what you will see when you sit for the graded exam will be roughly the same. Used as intended, these practice exams will enable you to:

- Review the types of questions you may encounter on the actual exam.
- Practice testing on a computer in a timed environment.
- Practice whenever and wherever it is convenient for you.

Take two different forms of a practice exam within a 180-day period. (We highly recommend that you take the first form of the practice exam as a pretest, early in the study period. Use the results to identify areas to further study and carry out a plan. Then take the second form as a post-test and see how much you have improved.)

Although there is no guarantee, our research suggests that exam takers who do well on the practice exams are more likely to pass the actual exam than those who do not take advantage of the opportunity. Note that since the practice exams are not graded (calibrated) the same way as the scores on the credit-bearing exam, it will be hard for you to use the practice exams as a way to predict your score on the credit-bearing exam. The main purpose of the practice exams is for you to check your knowledge and to become comfortable with the types of questions you are likely to see in the actual, credit-bearing exam.

## About Test Preparation Services

Preparation for UExcel® exams and Excelsior College® Examinations, though based on independent study, is supported by Excelsior College with a comprehensive set of exam learning resources and services designed to help you succeed. These learning resources are prepared by Excelsior College so you can be assured that they are current and cover the content you are expected to master for the exams. These resources, and your desire to learn, are usually all that you will need to succeed.

There are test-preparation companies that will offer to help you study for our examinations. Some may imply a relationship with Excelsior College and/or make claims that their products and services are all that you need to prepare for our examinations.

Excelsior College does not endorse the products and services of any tutorial or test preparation firm. We do not review the materials provided by these firms for the content or compatibility of their material and resources with UExcel® exams or Excelsior College Examinations®. No test preparation vendor is authorized to provide admissions counseling or academic advising services, or to collect any payments, on behalf of Excelsior College. Excelsior College does not send authorized representatives to a student's home nor does it review the materials provided by test preparation companies for content or compatibility with Excelsior College examinations.

To help you become a well-informed consumer, we suggest that before you make any purchase decision regarding study materials provided by organizations other than Excelsior College, you consider the points outlined on our website at [www.excelsior.edu/testprep](http://www.excelsior.edu/testprep).

## Exam Preparation Strategies

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Each learner is different. However, all learners should read the content outline in the exam's Content Guide and ensure that they have mastered the concepts. For someone with no prior knowledge of the subject, a rule of thumb is 135 hours of study for a 3-credit exam—this number is just to give you an idea of the level of effort you will need, more or less.

## Content Guides

This content guide is the most important resource. It lists the outcomes, a detailed content outline of what is covered, and textbooks and other study resources. It also has sample questions and suggestions for how to study. Content guides are updated periodically to correspond with changes in particular examinations and in textbook editions. Examinees can download any of the latest free UExcel content guides by visiting the individual exam page or from the list at [www.excelsior.edu/contentguides](http://www.excelsior.edu/contentguides).

### Using the Content Outline

Each content area in the content outline includes the most important sections of the recommended resources for that area. These annotations are not intended to be comprehensive. You may need to refer to other chapters in the recommended textbooks. Chapter numbers and titles may differ among textbook editions.

This content outline contains examples of the types of information you should study. Although these examples are many, do not assume that everything on the exam will come from these examples. Conversely, do not expect that every detail you study will appear on the exam. Any exam is only a broad sample of all the questions that could be asked about the subject matter.

### Using the Sample Questions and Rationales

Each content guide provides sample questions to illustrate those typically found on the exam. These questions are intended to give you an idea of the level of knowledge expected and the way questions are typically phrased. The sample questions do not sample the entire content of the exam and are not intended to serve as an entire practice test.

# Recommended Resources for the UExcel Exam in Research Methods in Psychology

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The resources listed below were selected by the faculty members on the examination committee for use in developing this exam.

Resources listed under “Strongly Recommended” were used by the committee to verify all the questions on the exam. Please refer to the Content Outline to see which parts of the exam are cross-referenced to these resources.

Resources listed under “Optional” provide additional material that may deepen or broaden your understanding of the subject, or that may provide an additional perspective on the exam content. Textbook resources, both Strongly Recommended and Optional, may be purchased from the [Excelsior College Bookstore](#).

You should allow ample time to obtain the necessary resources and to study sufficiently before taking the exam, so plan appropriately, with an eye towards your own personal learning needs. See the sections in this guide on the Excelsior College Bookstore and the Excelsior College Library, and under Reducing Textbook Costs, to help you secure the Strongly Recommended resources successfully.

## Textbook Editions

Textbook editions listed in the UExcel content guides may not be the same as those listed in the bookstore. Textbook editions may not exactly match up in terms of table of contents and organization, depending upon the edition. However, our team of exam developers checks exam content against every new textbook edition to verify that all subject areas tested in the exam are still adequately available in the study materials. If needed, exam developers will list additional Strongly Recommended resources to ensure that all topics in the exam are still sufficiently covered. Public libraries may have the textbooks you need, or may be able to obtain them for you through interlibrary loan to reduce textbook costs. You may also consider financial aid, if you qualify, to further help defray the steep cost of textbooks. A section on open educational

resources (OER) has been included in this guide to help you locate additional, possibly free resources to augment your study.

## Strongly Recommended

Myers., A., & Hansen, C. (2012). *Experimental psychology* (7th ed.). Pacific Grove, CA: Wadsworth.

The study materials may be purchased from the [Excelsior College Bookstore](#).

## Optional Resources

The examination development committee did not identify any specific Optional resources for this exam. If you would like to explore topics in more depth, we encourage you to refer to available Open Educational Resources (OER).

## Library Resources for Research Methods in Psychology

This content guide is the first place to start to study. Excelsior's Library has also developed an Exam Resources page for the exam, based on this content guide. The [Exam Resources page](#) provides additional materials that complement the resources in this guide.

## Reducing Textbook Costs

Many students know it is less expensive to buy a used textbook, and buying a previous edition is also an option. The Excelsior College bookstore includes a buyback feature and a used book marketplace, as well as the ability to rent digital versions of textbooks for as long as students need them. Students are encouraged to explore these and the many other opportunities available online to help defray textbook costs.

## Open Educational Resources

There are many resources available online free of charge that may further enhance your study for the exam. Known as Open Educational Resources (OER), these may be textbooks, courses, tutorials, or encyclopedias. Any additional OER that you find independently should be used to augment study—not as replacements for the Strongly Recommended resources.

Most sites for university-based OER can be searched through [www.ocwconsortium.org](http://www.ocwconsortium.org) and/or [www.oercommons.org](http://www.oercommons.org).

Sites that specialize in web courses designed by college professors under contract with the website sponsor, rather than in web versions of existing college courses, include:

[www.education-portal.com](http://www.education-portal.com)

[www.opencourselibrary.org](http://www.opencourselibrary.org) (abbreviated as OCL)

We have included specific courses that cover material for one or more UExcel® exams from the sites in the listings above. It's worth checking these sites frequently to see if new courses have been added that may be more appropriate or may cover an exam topic not currently listed.

Sites like Khan Academy ([www.khanacademy.com](http://www.khanacademy.com)) and iTunes U feature relatively brief lessons on very specific topics rather than full courses. Full courses are also available on iTunes U (<http://www.apple.com/education/ipad/itunes-u/>). We have chosen a few courses and collections for this listing.

### **Open Online Textbooks**

BookBoon

<http://bookboon.com/en/textbooks-ebooks>

Flatworld Knowledge

<http://catalog.flatworldknowledge.com/#our-catalog>

### **College Readiness**

Khan Academy

<http://www.khanacademy.org/>

Hippocampus

<http://www.hippocampus.org/>

Open Course Library

<http://opencourselibrary.org/collg-110-college-success-course/>

### **Study Aids**

Education Portal

<http://education-portal.com/>

Khan Academy

<http://www.khanacademy.org/>

Annenberg Learner

<http://www.learner.org/>

OpenCourseWare

<http://ocwconsortium.org/en/courses/search>

OER Commons

<http://www.oercommons.org/>

Open Course Library

<http://www.opencourselibrary.org/>

To achieve academic success, rate yourself at Excelsior College's Self-Regulated Learning Lab. Visit the Diagnostic Assessment & Achievement of College Skills site at <https://srl.daacs.net/>

It's free!

## SECTION TWO

# Content Outline

### **General Description of the Examination**

The UExcel Research Methods in Psychology examination is based on material typically taught in a one-semester upper-level course in research methods.

The examination measures knowledge and understanding of the scientific method, experimental psychology, research ethics, experimental and nonexperimental research designs, data analysis and interpretation, writing research reports, and the ability to apply this understanding in research situations.

Those beginning to study for this exam should be familiar with concepts generally covered in introductory psychology and elementary statistics.

### **Learning Outcomes**

After you have successfully worked your way through the recommended study materials, you will be expected to demonstrate the ability to:

1. Distinguish between scientific and nonscientific research methodology. (Aligns to GECC 2.1)
2. Examine ethical principles as outlined in the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct. (Aligns to GECC 6.1)
3. Summarize the basic concepts of survey research. (Aligns to GECC 2.1)
4. Distinguish among experimental research designs, quasi-experimental designs, and nonexperimental designs. (Aligns to GECC 2.1)
5. Recognize the four levels of measurement (i.e., nominal, ordinal, interval, and ratio). (Aligns to GECC 2.1)
6. Examine the importance of experimental validity and threats to internal and external validity of experiments. (Aligns to GECC 2.1)
7. Distinguish between-subject research designs from within-subject research designs. (Aligns to GECC 2.1)
8. Interpret the difference between descriptive statistics and inferential statistics. (Aligns to GECC 2.2)
9. Describe and demonstrate the purpose, major sections, and format of a research report. (Aligns to GECC 1.2)

## General Education Career Competencies Addressed in this Exam

GECC-1: Oral and Written Communication: Deliver written communication with appropriate content, organization, syntax, mechanics, and style for the audience and purpose.

GECC-2: Mathematical and Scientific Problem Solving: Apply scientific knowledge and reasoning to make evidence-based decisions. Apply mathematical concepts and reasoning to solve problems that involve quantitative information.

GECC-6: Ethical Reasoning: Explain different ethical positions in relation to a problem or issue.

## Content Outline

The content outline describes the various areas of the test, similar to the way a syllabus outlines a course. To fully prepare requires self-direction and discipline. Study involves careful reading, reflection, and systematic review.

The major content areas on the Research Methods in Psychology examination, the percent of the examination, and the hours to devote to each content area are listed below.

Content Area	Percent of the Examination	Hours of Study
I. Experimental Psychology and the Scientific Method	5%	7
II. Research Ethics (APA Guidelines)	7%	10
III. Alternatives to Experimentation (Nonexperimental Designs)	25%	34
IV. Basic Concepts of Experimental Research	25%	34
V. Experimental Research Designs	20%	27
VI. Data Analysis and Interpretation	10%	14
VII. Writing Research Reports	8%	11
<b>Total</b>	<b>100%</b>	

\*Approximate: For those examinees who know the topic well, less time may be needed to learn the subject matter. For those who are new to the subject matter, more time may be required for study.

NOTE: Occasionally, examples will be listed for a content topic to help clarify that topic. However, the content of the examination is not limited to the specific examples given.

The chapter numbers and titles provided at the beginning of each content area refer to specific chapters in the recommended textbook for this examination (see page 7, Learning Resources). Chapter numbers and titles may differ in subsequent editions.

## I. Experimental Psychology and the Scientific Method

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**5 PERCENT OF EXAM**

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### Myers and Hansen (2012)

**Chapter 1**, Experimental Psychology and the Scientific Method

**Chapter 6**, Formulating the Hypothesis

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- A. **Nonscientific vs. scientific methodology**
  - 1. Nonscientific sources of data
  - 2. Characteristics of the scientific method
- B. **The tools of psychological science (Chapter 1)**
  - 1. Observation
  - 2. Measurement
  - 3. Experimentation (establishing cause and effect)
- C. **Formulating the research hypothesis (Chapter 5)**
  - 1. Characteristics of a good hypothesis
  - 2. Induction vs. deduction
  - 3. Review of previous research

## II. Research Ethics (American Psychological Association Guidelines)

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**7 PERCENT OF EXAM**

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### Myers and Hansen:

**Chapter 2**, Research Ethics

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- A. **Research with human participants**
  - 1. Informed consent
  - 2. Deception and debriefing
  - 3. Institutional review boards
- B. **Research with animal subjects**
- C. **Fraud and plagiarism**

## III. Alternatives to Experimentation (Nonexperimental designs)

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**25 PERCENT OF EXAM**

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### Myers and Hansen

**Chapter 3**, Alternatives to Experimentation: Nonexperimental Designs

**Chapter 4**, Alternatives to Experimentation: Surveys and Interviews

**Chapter 5**, Alternatives to Experimentation: Correlational and Quasi-Experimental Designs

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- A. **Survey research (Chapter 4)**
  - 1. Characteristics of surveys (for example: interview, questionnaire)
  - 2. Response styles
  - 3. Sampling issues
    - a. Probability sampling
    - b. Nonprobability sampling

## B. Correlational research (Chapter 5)

1. Direction and strength of relationships
  - a. Correlation coefficient
  - b. Scatterplots
2. Limitations
  - a. Correlation does not prove causation.
  - b. Direction of causality
  - c. Third variable problems

## C. Quasi-experimental designs (Chapter 5)

1. Definition and characteristics of quasi-experimental designs
2. Types of quasi-experimental designs
  - a. Ex post facto designs
  - b. Longitudinal designs
  - c. Cross-sectional designs
  - d. Pretest/posttest design
3. Advantages and disadvantages of quasi-experimental designs

## D. Other types of nonexperimental research (Chapter 3)

1. Observational research/field studies
2. Case studies
3. Archival research/secondary records

## E. Advantages and disadvantages of nonexperimental designs

2. Operational definitions and hypothetical constructs
3. Scales of measurement
  - a. Nominal
  - b. Ordinal
  - c. Interval
  - d. Ratio
4. Reliability of measurement
  - a. Interitem reliability
  - b. Interrater reliability
  - c. Test-retest reliability
5. Validity of measurement
  - a. Construct validity
  - b. Content validity
  - c. Face validity
  - d. Predictive validity

## B. Internal validity (Chapters 7 and 8)

1. Definition of internal validity
2. Concepts related to internal validity — extraneous and confounding variables
  - a. Characteristics of the setting (physical variables)
  - b. Characteristics of the experimenter
    - 1) Experimenter bias
    - 2) Experimenter personality
    - 3) Selection of subjects
  - c. Characteristics of the participants (subjects)
    - 1) Demand characteristics
    - 2) Volunteers
    - 3) "Good subject" bias
    - 4) Social desirability

## IV. Basic Concepts of Experimental Research

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**25** PERCENT OF EXAM

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### Myers and Hansen

**Chapter 7**, The Basics of Experimentation

**Chapter 8**, Solving Problems:  
Controlling Extraneous Variables

**Chapter 15**, Drawing Conclusions:  
The Search for the Elusive Bottom Line

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## A. Measurement issues (Chapter 7)

1. Independent and dependent variables

3. Specific threats to internal validity
    - a. History
    - b. Instrumentation
    - c. Maturation
    - d. Selection
    - e. Selection interaction
    - f. Statistical regression
    - g. Subject mortality
    - h. Testing
  4. Controlling for extraneous variables
    - a. Single blind
    - b. Double blind
    - c. Placebo
- C. External validity (Chapter 15)**
1. Definition of external validity
  2. Basic requirements for external validity
    - a. Internal validity
    - b. Replication
  3. Important external validity issues
    - a. Generalizing across subjects
    - b. Generalizing from procedures to concepts
    - c. Generalizing beyond the lab
    - d. Increasing external validity (five approaches)
      - 1) Aggregation
      - 2) Multivariate designs
      - 3) Nonreactive measures
      - 4) Field experiments
      - 5) Naturalistic observation

## V. Experimental Research Designs

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**20 PERCENT OF EXAM**

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### Myers and Hansen

**Chapter 9**, Basic Between-Subjects Designs

**Chapter 10**, Between-Subjects Factorial Designs

**Chapter 11**, Within-Subjects Designs

**Chapter 12**, Within-Subjects Designs: Small *N*

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### A. Between-subjects designs (Chapter 9)

1. One independent variable
  - a. Two independent groups
    - 1) Random assignment
    - 2) Experimental group–control group design
    - 3) Two-experimental-groups design
  - b. Two matched groups
  - c. Multiple groups
2. Factorial Designs (Chapter 10)
  - a. Types of factorial designs — definitions/descriptions
  - b. Main effects
  - c. Interaction effects
  - d. Describing the design (notation)

### B. Within-subjects designs (Chapter 11)

1. Types of within-subjects designs
  - a. Definitions/descriptions
  - b. One independent variable
  - c. Multiple independent variables (factorial designs)
  - d. Mixed designs
2. Problems of within-subjects designs: order effects
  - a. Carryover effects
  - b. Fatigue and practice effects
3. Controlling for order effects: counterbalancing

- C. **Small *N* Designs (Chapter 11)**
  - 1. ABA designs
  - 2. Multiple-baseline design
- D. **Advantages and disadvantages of the various experimental designs**

- c. One-tailed vs. two-tailed tests (directional vs. nondirectional hypotheses)
- 3. Comparing two groups (Chapter 14)
  - a. Chi-square test
  - b. *t* test
- 4. Comparing multiple groups (Chapter 14)
  - a. One-way between-subjects ANOVA (one independent variable)
  - b. One-way repeated measures ANOVA (one independent variable within subjects)
  - c. Two-way ANOVA (between subjects, multiple independent variables)
  - d. Repeated measures and mixed factorial designs

## VI. Data Analysis and Interpretation

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### 10 PERCENT OF EXAM

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#### Myers and Hansen

**Chapter 13**, Why We Need Statistics

**Chapter 14**, Analyzing Results

**Chapter 15**, Drawing Conclusions: The Search for the Elusive Bottom Line

*NOTE: The focus in this section will be on selecting the appropriate analysis technique and interpreting the results of a data analysis. Questions will not focus on computation of statistics.*

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- A. **Descriptive statistics — organizing and summarizing data (Chapter 13)**
  - 1. Frequency distributions
  - 2. Measures of central tendency
    - a. Mean
    - b. Median
    - c. Mode
  - 3. Measures of variability
    - a. Range
    - b. Variance
    - c. Standard deviation
- B. **Inferential Statistics/Hypothesis Testing**
  - 1. Null vs. alternative hypotheses (Chapter 13)
  - 2. Odds of finding significance (Chapter 13)
    - a. Significance levels
      - 1) Type I errors
      - 2) Type II errors
    - b. Critical regions

#### C. **Evaluating research findings (Chapter 15)**

- 1. Internal validity
- 2. External validity
- 3. Interpreting a nonsignificant outcome

## VII. Writing Research Reports

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### 8 PERCENT OF EXAM

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#### Myers and Hansen

**Chapter 16**, Writing the Research Report

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#### A. **Purpose and format**

#### B. **Major sections**

- 1. Descriptive title
- 2. Abstract
- 3. Introduction
- 4. Method
- 5. Results
- 6. Discussion
- 7. References

## SECTION THREE

# Sample Questions

The sample questions give you an idea of the level of knowledge expected in the exam and how questions are typically phrased. They are not representative of the entire content of the exam and are not intended to serve as a practice test.

Rationales for the questions can be found on pages 21–28 of this guide. In that section, the correct answer is identified and each answer is explained. The number in parentheses at the beginning of each rationale refers to the corresponding section of the content outline. For any questions you answer incorrectly, return to that section of the content outline for further study.

1. A researcher uses the same methods as those employed in a previous experiment and then determines if the results are the same. Which concept does this situation best illustrate?
  - 1) correlation
  - 2) observation
  - 3) publication
  - 4) replication
2. In which model of hypothesis formation is the accumulation of data used to form general explanatory principles?
  - 1) correlational
  - 2) deductive
  - 3) inductive
  - 4) scientific
3. What is the primary reason for debriefing individuals following their participation in a research study?
  - 1) to adhere to scientific guidelines
  - 2) to protect the reputations of the institution and department
  - 3) to avoid possible legal action by participants as a result of the study
  - 4) to ensure that there are no harmful consequences for participants
4. A researcher proposes to conduct an experiment that exposes participants to possible physical, social, or psychological injury. What should the institutional review board require of this researcher?  
The researcher must
  - 1) obtain informed consent from potential participants.
  - 2) receive approval from the American Psychological Association.
  - 3) provide payment to the research participants.
  - 4) conduct a less risky pilot study before proceeding.
5. Which example constitutes fraud by a psychological researcher?  
The researcher fails to
  - 1) obtain informed consent from all prospective participants in a study.
  - 2) conduct a risk/benefit analysis prior to conducting an experiment.
  - 3) include data in the research report that are inconsistent with the hypothesis.
  - 4) debrief all of the participants at the end of an experiment.

6. Which research method would be most useful to study the attitudes held by adolescents about cigarette smoking?
  - 1) case study
  - 2) experimental
  - 3) observation
  - 4) survey
7. Which is an example of a person's position preference in responding to a questionnaire?  
When uncertain, the respondent always
  - 1) selects answers at random.
  - 2) selects the last option in multiple-choice questions.
  - 3) chooses the answer by the manifest content.
  - 4) answers all questions conservatively.
8. Which sampling method selects participants in such a manner that the odds of an individual's being selected are known?
  - 1) convenience
  - 2) nonprobability
  - 3) probability
  - 4) quota
9. What is a disadvantage of quota sampling?
  - 1) The procedure for selecting participants is not random.
  - 2) The findings are valid only when the sample is large.
  - 3) Only alternate participants can be selected.
  - 4) The procedure is valid only when the sample is large.
10. An observed correlation between two variables of interest may be the result of an unknown or unmeasured variable that is moderately associated with both measured variables. What term is used in correlational research to refer to this alternative explanation?
  - 1) bidirectional causation
  - 2) causal modeling
  - 3) multiple correlation
  - 4) third variable problem
11. What can be concluded about the cause and effect relationship between two variables that have a highly significant correlation?
  - 1) No conclusion can be drawn about the cause and effect relationship.
  - 2) The cause and effect relationship is significant if the correlation is positive.
  - 3) The cause and effect relationship is significant if the correlation is negative.
  - 4) There is a significant cause and effect relationship between the two variables.
12. What is a disadvantage of cross-sectional studies as compared to longitudinal studies?  
Cross-sectional studies
  - 1) require a larger number of participants.
  - 2) require more time for data collection.
  - 3) have higher participant attrition rates.
  - 4) do not allow for causal inferences.
13. A researcher learns that a university is about to implement a new program designed to reduce racial tension on campus. Because the researcher knows about this event before it occurs, which design would be most appropriate?
  - 1) case study
  - 2) cross-sectional
  - 3) observational
  - 4) pretest/posttest
14. A researcher collects a lengthy and detailed description of an individual's experiences and behaviors. This situation illustrates which type of research?
  - 1) case study
  - 2) correlational study
  - 3) quasi-experiment
  - 4) true experiment

15. Which situation is an example of an archival study?  
A researcher
- 1) joins a college fraternity to learn about its initiation rituals.
  - 2) unobtrusively observes the behavior of shoppers at a local mall.
  - 3) uses existing court records to investigate variables that influence plea bargaining.
  - 4) investigates and describes three individuals who have a rare form of mental illness.
16. Under which condition is an experimental hypothesis supported?
- 1) Holding the independent variable constant brings about a change in the dependent variable.
  - 2) Manipulating the independent variable brings about a change in the dependent variable.
  - 3) Holding the dependent variable constant brings about a change in the independent variable.
  - 4) Manipulating the dependent variable brings about a change in the independent variable.
17. A researcher hypothesizes that there will be a significant difference in the concerns expressed by pregnant women during the first, second, or third trimester of pregnancy. What is the independent variable in this hypothesis?
- 1) difference in concerns
  - 2) expressed concerns
  - 3) pregnant women
  - 4) trimester of pregnancy
18. What feature distinguishes a ratio scale from other scales of measurement?
- 1) It allows for the use of negative numbers.
  - 2) It possesses a true zero point.
  - 3) There are equal intervals between the values.
  - 4) More powerful statistical tests can be used.
19. Two observers have separately scored a child's play behaviors for aggressiveness. Which measurement concept assesses the level of agreement between the two observers?
- 1) face validity
  - 2) criterion validity
  - 3) interrater reliability
  - 4) test-retest reliability
20. Researchers are studying whether the safety level of a person's driving varies depending upon the type of vehicle driven. The researchers have designed a safe driving practices questionnaire. They have asked a panel of driving instructors to review their questionnaire to determine whether it measures the important aspects of driving safety. The process of soliciting feedback from the driving instructors is intended to improve which aspect of the questionnaire's validity?
- 1) content
  - 2) external
  - 3) face
  - 4) internal
21. Rats are randomly divided into three groups for a study on the effects of diet on maze-learning time. Through a mechanical malfunction, rats in one of the groups receive much less water with their food than the other two groups. Why is this factor a threat to internal validity?
- 1) An extraneous variable has systematically affected all groups in the study.
  - 2) An extraneous variable has systematically affected one group, but not the other groups.
  - 3) The independent variable has been changed for one group, but not for the other groups.
  - 4) The dependent variable has been changed for one group, but not for the other groups.

22. In which research situation would the experiment be confounded?
- 1) The dependent variable varies systematically with the independent variable.
  - 2) The dependent variable fails to vary systematically with the independent variable.
  - 3) An extraneous variable varies systematically with the independent variable.
  - 4) An extraneous variable fails to vary systematically with the independent variable.
23. A middle-school student designs a science project to determine whether female cats prefer scented or unscented kitty litter (cat-box filler). The student buys a box of unscented, brown kitty litter and a box of scented, blue kitty litter for the project. The student finds that the sample of cats used the brown, unscented kitty litter more frequently and concludes that cats prefer unscented kitty litter. Which two variables are confounded in this experiment?
- 1) kitty litter color and cat's gender
  - 2) kitty litter color and kitty litter scent
  - 3) kitty litter scent and frequency of use
  - 4) cat's gender and frequency of use
24. Which is a strategy for avoiding the threat of maturation to the internal validity of a study?
- 1) Ensure appropriate number of subjects in the study group.
  - 2) Ensure that all subjects are from the same cohort or age group.
  - 3) Minimize the time between administering pretest and posttest measures.
  - 4) Minimize the impact of treatment ordering effects.
25. What aspect of a research study can be enhanced by using measures such as aggregation, multivariate designs, nonreactive measurements, field experiments, and naturalistic observations?
- 1) external validity
  - 2) operational definitions
  - 3) reliability
  - 4) statistical power
26. Which statement best characterizes a between-subjects experimental design?
- 1) Participants are sampled from two different populations.
  - 2) Participants are asked to choose between two experimental conditions.
  - 3) Participants are each assigned to at least two levels of the independent variable.
  - 4) Participants are each assigned to a single experimental condition.
27. What is the rationale for randomly assigning each research participant to one of two groups?
- 1) to eliminate systematic bias in the groups
  - 2) to manipulate the independent variables in the groups
  - 3) to protect the privacy of the participants
  - 4) to ensure representative sampling
28. A researcher wants to determine if listening to familiar music causes people to become more or less contented than they are when listening to unfamiliar music. Hoping to control for the potential effects of age, the researcher randomly assigns students of the same age to listen to either familiar music or unfamiliar music. What kind of experimental design is this researcher using?
- 1) mixed design
  - 2) multiple-independent-groups design
  - 3) two-matched-groups design
  - 4) factorial design

29. A researcher is studying the effects of a new drug on the treatment of migraine headaches. The researcher believes that the drug will be most effective if taken at night rather than during the day. The researcher randomly assigns participants to different drug level/ time-of-day treatment combinations. Which type of experimental design is the researcher using?

- 1) mixed design
- 2) two-matched-groups design
- 3) between-subjects factorial design
- 4) within-subjects factorial design

30. A researcher tests the effects of sleep deprivation on memory. Ten participants are asked to memorize a list of 20 words. They are then allowed to sleep for four hours, at which point they are awakened and asked to recall the 20 words. The next night, the subjects are allowed to sleep two hours, at which point they are awakened and asked to recall the 20 words. What design did the researcher use?

- 1) between-subjects one independent variable design
- 2) within-subjects one independent variable design
- 3) between-subjects multiple independent variable design
- 4) within-subjects multiple independent variable design

31. In within-subjects designs, what confounds may result from administering the conditions in the same order to all participants?

- 1) history effects
- 2) practice effects
- 3) selection effects
- 4) mortality effects

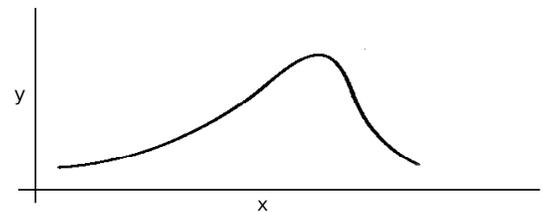
32. Which technique is used to control progressive error in within-subjects designs?

- 1) block randomization
- 2) counterbalancing
- 3) random assignment
- 4) statistical regression

33. The number of problem behaviors that a child displays is counted for six weeks. For the next six weeks, the number of problem behaviors is counted while the child undergoes behavior modification therapy. Next, the number of problem behaviors is counted for six weeks after the therapy is discontinued. Which type of experimental design is being used in this study?

- 1) ABA
- 2) BAB
- 3) ABAB
- 4) ABABA

34. Which statement is true of the frequency distribution illustrated below?



- 1) The mean will be greater than the mode.
- 2) The mean will be less than the mode.
- 3) The median will be greater than the mode.
- 4) The median will be less than the mean.

35. Random samples of 100 full-time and 100 part-time undergraduate students are asked to rate the usefulness of a new computer network at the college library. The full-time students rate the facilities as more useful than do the part-time students. Which conclusion illustrates the concept of statistical inference?

The full-time students

- 1) sampled find the facilities more useful than do the part-time students sampled.
- 2) at the college find the facilities more useful than do the part-time students at the college.
- 3) sampled have greater opportunity to use the facilities than do the part-time students sampled.
- 4) at the college have greater opportunity to use the facilities than do the part-time students at the college.

36. A researcher is examining the effect of caffeine on memory. Participants are placed in one of three treatment groups that differ as follows: twenty minutes prior to taking a short-term memory test, participants in Group 1 ingest 200 mg of caffeine, participants in Group 2 ingest 100 mg of caffeine, and participants in Group 3 ingest a placebo. What statistic should be used to determine whether caffeine affects short-term memory?
- 1) one-way between-subjects ANOVA
  - 2) one-way repeated-measures ANOVA
  - 3) two-way between-subjects ANOVA
  - 4) two-way repeated-measures ANOVA
37. A researcher is evaluating a set of research findings. Why would the researcher want to replicate the findings?
- Replication will promote the
- 1) interaction of the variables.
  - 2) reactivity of the participants.
  - 3) internal validity of the study.
  - 4) external validity of the study.
38. Psychological research reports should be written in a style similar to which document?
- 1) an article in a popular magazine
  - 2) an editorial in a newspaper
  - 3) a study published in a medical journal
  - 4) a chapter in a textbook
39. When is the abstract for a psychological research report usually written?
- 1) first, before any other part of the paper
  - 2) immediately after the data are collected
  - 3) after the title page is formulated
  - 4) last, after the entire paper is complete
40. A researcher is studying the relationship between social support and stress among young mothers during the transition to parenthood. Which statement should appear in the procedure subsection of the research report?
- 1) "The average age of the participants was 20.3 years."
  - 2) "The participants were interviewed in their homes during their third trimester of pregnancy."
  - 3) "The participants were found to have higher levels of stress after becoming parents."
  - 4) "Previous research suggests that social support can buffer stress for young mothers."

## SECTION FOUR

# Rationales

### 1.(IA2)

- 1) Correlation refers to the degree of relationship between two variables.
- 2) Observation refers to the systematic noting and recording of events.
- 3) Publication refers to the write-up of a research paper.
- \*4) Replication refers to the repeating of research procedures to verify that the outcome obtained is the same as in the previous research experiment.

### 2.(IC2)

- 1) Correlational is not a model of hypothesis formation. Correlation refers to the degree of relationship between two variables.
- 2) The deductive model of hypothesis formation is the process of reasoning from general principles to make predictions about specific cases.
- \*3) The inductive model of hypothesis formation is the process of reasoning from specific cases to more general principles.
- 4) Scientific does not refer to a specific model of hypothesis formation.

### 3.(IIA2)

- 1) Although by debriefing individuals the researcher does follow APA scientific guidelines, this is not the primary reason for the debriefing.
- 2) Debriefing is conducted to protect the participants, not to protect the institution and the department.

- 3) The researcher is legally responsible for what happens to the participants in a study.
- \*4) Debriefing participants by explaining the true nature and purpose of the study will eliminate or minimize the harmful effects of any deception used in the study.

### 4.(IIA3)

- \*1) Obtaining informed consent ensures that participants are fully informed about the possible risks and benefits of participating before they decide whether to be in the study.
- 2) The APA publishes guidelines for conducting ethical research, but it does not review and approve individual studies.
- 3) Payment to participants does not ensure that they will not experience harmful effects from the research.
- 4) Conducting a less risky pilot study would not make a risky experiment more acceptable.

### 5.(IIC)

- 1) Failing to obtain informed consent is unethical, but it does not constitute fraud.
- 2) Conducting a risk/benefit analysis is an important step in ensuring that the study is ethical, but it is not related to fraud.
- \*3) Fraud involves deliberately omitting or falsifying data so that the research results come out the way the researcher wants.
- 4) Debriefing is an important step in ensuring that the study is ethical, but it is not related to fraud.

\*correct answer

#### 6.(IIIA1)

- 1) A case study is a descriptive record of an individual's experiences/behaviors as noted by an observer. A case study would be an inappropriate method for a study about adolescents' attitudes.
- 2) An experimental study involves manipulating variables. It is not appropriate to manipulate variables when studying attitudes about smoking.
- 3) The observation method is inappropriate for this topic because it is difficult to directly observe attitudes.
- \*4) The survey method is an appropriate way to obtain information about people's attitudes by simply asking them. In addition, surveys allow the researcher to gather data about experiences, feelings, thoughts, and motives that are hard to observe directly.

#### 7.(IIIA2)

- 1) Position preference is not just selecting answers at random.
- \*2) Position preference is a type of response style that involves always choosing the response in a certain position, such as the last option, when in doubt about the right answer.
- 3) Responding to the manifest content of the question, the plain meaning of the words that actually appear on the page, is another type of response style.
- 4) How conservatively a person answers the questions is not related to position preference.

#### 8.(IIIA3a)

- 1) In convenience sampling, participants are selected based on who is most readily available. The odds of selecting any one individual are not known.
- 2) In nonprobability sampling, the odds of selecting any one individual are not known.
- \*3) In probability sampling, subjects are selected in such a way that the odds of their being in the study are known.
- 4) In quota sampling, participants are selected using predetermined criteria to reflect the makeup of the population. Quota sampling is a type of nonprobability sampling. The odds of selecting any one individual are not known.

#### 9.(IIIA3b)

- \*1) In quota sampling, researchers select samples based on predetermined quotas that are intended to reflect the makeup of the population. Since quota sampling is not random, the sample may not be truly representative of the population. Quota sampling is low in external validity.
- 2) The size of the sample does not affect the validity of the findings based on the use of quota sampling.
- 3) Quota sampling does not involve selecting alternate participants.
- 4) The size of the sample does not affect the validity of the procedure when quota sampling is used.

\*correct answer

10.(IIIB2c)

- 1) Bidirectional causation means that the variables may cause each other.
- 2) Causal modeling is the creation and testing of models that may suggest cause and effect relationships among variables.
- 3) Multiple correlation is defined as statistical intercorrelations among three or more variables.
- \*4) The third variable problem is an alternative explanation in correlational research. It is the term used to specify when a correlation between two variables of interest may be the result of an unknown or unmeasured variable that is associated with both measured variables.

11.(IIIB2a)

- \*1) A correlation between two variables does not imply that one variable causes the other variable.
- 2) Even if a positive relationship exists between two variables, correlation does not prove causation.
- 3) Even if a negative relationship exists between two variables, correlation does not prove causation.
- 4) Even if a significant relationship exists between two variables, correlation does not imply that they are causally related.

12.(IIIC2b/c)

- \*1) Because cross-sectional studies involve comparing more groups than longitudinal studies, they require more subjects.
- 2) Longitudinal designs require more time because participants are followed over a long period of time to see how they change.
- 3) There is a higher attrition rate in longitudinal designs because participants are followed over a long period of time and some may drop out along the way.
- 4) Neither cross-sectional nor longitudinal studies permit causal inferences to be drawn.

13.(IIIC2d)

- 1) A case study is a descriptive record of an individual, not a group. It would not be an appropriate design for this situation.
- 2) A cross-sectional design compares participants who are at different stages of development. It would not be an appropriate design for this situation.
- 3) The observational method is one way to collect data, but it does not take advantage of the fact that the researcher is forewarned about the event.
- \*4) A pretest/posttest design allows the researcher to take measures before and after the program is implemented to see if the program had any effect on racial tension.

14.(IIID2)

- \*1) A case study involves an in-depth investigation of an individual's experience and behaviors by a researcher. It does not involve groups of subjects or manipulation of conditions, as do 2), 3), and 4).
- 2) A correlational study examines the degree of relationship between two traits, behaviors, or events.
- 3) A quasi-experimental design is used to assess the effects of different experimental manipulations, but without the use of random assignment of subjects to the conditions.
- 4) An experimental design is used to assess the effects of different experimental manipulations, with the use of random assignment of subjects to the conditions.

15.(IIID3)

- 1) This is an example of a participant-observer study in which the researcher actually becomes part of the group being studied.
- 2) This is an example of naturalistic observation in which behaviors are observed as they occur spontaneously in natural settings.
- \*3) This is an example of an archival study in which the researcher examines data that has already been collected for other purposes.
- 4) This is an example of a case study in which an individual is described in great detail.

\*correct answer

16.(IVA1)

- 1) The independent variable is manipulated by the experimenter. It is not held constant.
- \*2) If manipulating the independent variable brings about a change in the dependent variable, then the experimental hypothesis is supported.
- 3) The dependent variable is measured by the experimenter. It is not held constant.
- 4) The dependent variable is measured and the independent variable is manipulated.

17.(IVA1)

- 1) The difference in concerns refers to changes in the dependent variable, expressed concerns.
- 2) Expressed concerns is the dependent variable.
- 3) The pregnant women are the participants.
- \*4) The researcher is examining whether the trimester of pregnancy affects expressed concerns; therefore, trimester of pregnancy is the independent variable.

18.(IVA3d)

- 1) Other scales of measurement may also include negative numbers.
- \*2) Only a ratio scale has a true zero point.
- 3) Both ratio and interval scales have equal intervals between the values.
- 4) The same statistical tests can be used for both interval and ratio scales of measurement.

19.(IVA4b)

- 1) The level of agreement between observers is an issue of reliability, not validity.
- 2) See 1).
- \*3) Interrater reliability refers to the degree of agreement between different observers or raters.
- 4) Test-retest reliability refers to the consistency between an individual's scores on the same test taken at two or more different times.

20.(IVA5b)

- \*1) Content validity refers to whether the content of a measure (such as a questionnaire) reflects the content of what is being measured (such as driving safety). This type of validity is often determined with the help of subject matter experts who judge the measure.
- 2) External validity refers to how well the findings of an experiment generalize to people and settings that were not tested directly.
- 3) Face validity refers to the degree to which a manipulation or measurement technique is self-evident.
- 4) Internal validity refers to the determination that the changes in behavior observed across treatment conditions in the experiment were actually caused by the independent variable.

21.(IVB2)

- 1) The mechanical malfunction is an extraneous variable, but it has not affected all the groups.
- \*2) An extraneous variable is any factor that is not the main focus of the experiment and is not intentionally manipulated. The mechanical malfunction is an extraneous variable, and since it has affected only one of the groups, it is a threat to internal validity.
- 3) This question describes the effect of an extraneous variable on one of the groups; it does not discuss the independent variable.
- 4) The question describes the effect of an extraneous variable on one of the groups; it does not discuss the dependent variable.

\*correct answer

## 22.(IVB2)

- 1) If the dependent variable varies as a result of changes in the independent variable, this is an indication that the experiment has worked, not that it is confounded.
- 2) If the dependent variable fails to vary as a result of changes in the independent variable, this is an indication that the experiment has not worked, not that it is confounded.
- \*3) If an extraneous variable varies systematically with the independent variable, the study is confounded because it is not clear which variable is responsible for any changes in the dependent variable.
- 4) If an extraneous variable fails to vary systematically with the independent variable, this means that the study is not confounded.

## 23.(IVB2)

- 1) Confounding occurs when an extraneous variable varies systematically with the independent variable. Kitty litter color is an extraneous variable, but cat's gender does not vary in the study.
- \*2) Kitty litter color and kitty litter scent are confounded. Color and scent vary systematically with one another, so it is impossible to tell whether color or scent is responsible for the cat's preference for one kitty litter over the other.
- 3) Confounding occurs when an extraneous variable varies systematically with the independent variable. Although scent is an independent variable, frequency of use is a dependent variable.
- 4) Confounding occurs when an extraneous variable varies systematically with the independent variable. Frequency of use is a dependent variable and cat's gender does not vary in the study.

## 24.(IVB3c)

- 1) Ensuring an appropriate number of subjects in the study group has no effect on maturation.
- 2) Assuring that all subjects are from the same age group has no effect on maturation.
- \*3) Maturation refers to any internal changes in participants that might affect the dependent variable. Minimizing the duration of the experiment (the time between administering pretest and posttest measures) will minimize the amount of change that could occur.
- 4) Treatment ordering effects are not relevant to maturation.

## 25.(IVC3d)

- \*1) External validity refers to the degree to which we can generalize the results of a study to other people and settings. The use of aggregation, multivariate designs, nonreactive measurements, field experiments, and naturalistic observations can enhance a study's external validity.
- 2) The measures listed in the question do not affect the operational definitions of the variables.
- 3) The measures listed in the question do not affect the reliability of the measures.
- 4) The measures listed in the question do not affect the statistical power.

## 26.(VA)

- 1) A between-subjects design can be used regardless of the populations that are included in the study.
- 2) Participants are placed into experimental conditions by the researcher. Participants normally do not choose which condition they will be in.
- 3) If participants are each assigned to at least two levels of the independent variable, it is a repeated-measures design.
- \*4) If each participant is randomly assigned to one level of the independent variable, it is a between-subjects design.

\*correct answer

27.(VA1a)

- \*1) Using random assignment eliminates any systematic bias that might cause the groups to differ at the beginning of the study.
- 2) Random assignment is not necessary for manipulating independent variables.
- 3) Random assignment does not protect the privacy of participants.
- 4) Random assignment involves assigning participants to experimental conditions, not sampling participants from the population.

28.(VA1b)

- 1) In a mixed design, within-subjects and between-subjects variables are combined in a single experiment. In this question, there is only a between-subjects variable.
- 2) In a multiple-independent-group design, subjects are randomly assigned to more than two conditions. In this question, only two conditions are present.
- \*3) In a two-matched-groups design, the groups are matched on a variable (such as age) that is believed to be highly related to the dependent variable.
- 4) In a factorial design, two or more independent variables are studied simultaneously. In this question, there is only one independent variable, familiarity of music.

29.(VA2a)

- 1) In a mixed design, within-subjects and between-subjects variables are combined in a single experiment. In this question, there are two between-subject variables.
- 2) In a two-matched groups design, the groups are matched on a variable that is believed to be highly related to the dependent variable. In this question, there is no matching variable in the study.

- \*3) In a between-subjects factorial design, there is more than one independent variable (drug level and time of day) and each participant is assigned to only one condition.
- 4) In a within-subjects factorial design, each participant is assigned to more than one condition. In this question, each participant is assigned to only one condition.

30.(VB1b)

- 1) This is not a between-subjects design because each participant experiences more than one experimental condition.
- \*2) This is a within-subjects one independent variable design because each participant experiences more than one condition, and sleep deprivation is the only independent variable.
- 3) See 1).
- 4) This is not a multiple independent variable design because there is only one independent variable, sleep deprivation.

31.(VB2b)

- 1) History effects occur when events outside the experiment may have caused changes in the dependent variable.
- \*2) If the conditions are presented in the same order to all participants, participants may have a higher score in the later conditions because they have had a chance to practice, not because of the change in the independent variable.
- 3) Selection effects occur when there are preexisting differences between the participants in different conditions that may be responsible for their different responses to the independent variable.
- 4) Mortality effects occur when more participants drop out of one condition than another.

\*correct answer

32.(VB3)

- 1) Block randomization is a technique that involves random assignment of subjects to conditions, but ensures that equal numbers of subjects are in all conditions. It does not control for progressive error.
- \*2) Counterbalancing is a technique for controlling order effects by distributing progressive error across the different treatment conditions of the experiment.
- 3) Random assignment is a technique for assigning subjects to treatment conditions so that each subject has an equal chance of being assigned to each treatment condition. It does not control for errors that occur as the experiment progresses.
- 4) Statistical regression is a naturally occurring phenomenon in which extreme scores tend to regress toward the mean during retesting. It is a source of error, not a technique for controlling error.

33.(VC1)

- \*1) ABA is the design being used. A represents a phase of the experiment in which measures are taken while no treatment is being administered. (The number of problem behaviors is counted.) B represents a phase where measures are taken while treatment is being administered. (The number of problem behaviors is counted while the child undergoes therapy.) Then A is repeated.
- 2) BAB is not correct. See 1).
- 3) ABAB is not correct. See 1).
- 4) ABABA is not correct. See 1).

34.(VIA2)

- 1) See 2).
- \*2) Of the three measures of central tendency (mean, median, mode), the mean is the most sensitive to, and drawn toward, extreme scores such as those occurring in the lower tail of the distribution in the illustration. The median is affected to a lesser degree than the mean. The mode is not affected at all. Therefore, in a negatively skewed distribution such as the one illustrated, the mean would be the lowest value, the median would be the next lowest, and the mode would be the highest.
- 3) See 2).
- 4) See 2).

35.(VIB)

- 1) Although it is true that the full-time students sampled found the facilities more useful than the part-time students sampled, this statement does not involve any statistical inference.
- \*2) Statistical inference refers to making a statement about the population and all its samples based on what we see in the samples we have. Based on the samples of part-time and full-time students in this study, inferences are being made about how all part-time and full-time students at the college feel about the facilities.
- 3) It may be true that the full-time students sampled have more opportunity to use the facilities than the part-time students sampled, but the study did not measure this factor.
- 4) It may be true that the full-time students at the college have more opportunity to use the facilities than the part-time students at the college, but the study did not measure this factor.

\*correct answer

36.(VIB4a)

- \*1) This is a one-way design because only one independent variable (amount of caffeine) is involved. It is a between-subjects design because each participant experiences only one experimental condition.
- 2) This is not a repeated-measures design because each participant experiences only one experimental condition.
- 3) This is not a two-way design because only one independent variable (amount of caffeine) is involved, not two.
- 4) This is not a two-way design because only one independent variable (amount of caffeine) is involved, not two. It is not a repeated-measures design because each participant experiences only one experimental condition.

37.(VIC2)

- 1) Replication does not affect how the variables interact with one another in the study.
- 2) Replication does not affect how the participants will react during the study.
- 3) Replication does not affect internal validity (the degree to which a researcher is able to state a causal relationship between the independent and dependent variables).
- \*4) Replication, or repetition of the experiment with other populations or in other settings, allows the researcher to determine how generalizable (or externally valid) the research findings are.

38.(VIA)

- 1) An article in a popular magazine is not written in a scientific writing style.
- 2) An editorial in a newspaper is not written in a scientific writing style.
- \*3) A research report is written in a scientific style, as is a study published in a medical journal.
- 4) An essay in a textbook is not written in a scientific writing style.

39.(VIIB2)

- 1) Because the abstract is a summary of the report, it would be very difficult to write it before any of the other sections have been written.
- 2) Because the abstract includes a description and interpretation of the results, it could not be written before the data have been analyzed.
- 3) Although the abstract appears on the page following the title page, it is usually written after the report is completed.
- \*4) The abstract is a summary of the research report and should be written last, after the entire report has been written.

40.(VIIB4)

- 1) Characteristics of the sample are described in the participants subsection.
- \*2) A description of everything that happened to the participants in the experiment in chronological order is included in the procedure subsection.
- 3) Statements of findings are included in the results section.
- 4) A review of the literature is included in the introduction.

\*correct answer

## SECTION FIVE

# Taking the Exam

## Registering for Your Exam

### Register Online

[www.excelsior.edu/examregistration](http://www.excelsior.edu/examregistration)

Follow the instructions and pay by Visa, MasterCard, American Express, or Discover Card.

### Examination Administration

Pearson Testing Centers serve as the administrator for all Excelsior College computer-delivered exams.

### Accessibility Services

Excelsior College is committed to the principle that every individual should have an equal opportunity to enroll in an Excelsior College degree program, to register for courses or examinations in order to demonstrate their knowledge and skills under appropriate conditions, and to complete a degree.

The Accessibility Services Office at Excelsior College is responsible for considering requests for reasonable accommodations for individuals with verifiable, documented disabilities. If you are requesting an accommodation due to a disability/condition, complete a [Request for Accommodation form](#).

### Computer-Delivered Testing

The UExcel exams are delivered by computer. You can take this exam either in a [Pearson VUE testing center](#) or at your home or office with an online proctor. If you are interested in remote proctoring, visit [PearsonVUE OnVUE online proctoring](#).

The system is designed to be as user-friendly as possible, even for those with little or no computer

experience. On-screen instructions are similar to those you would see in a paper examination booklet. You will use either the keyboard or the mouse to submit your answers, depending upon the type of question.

Before taking your exam, we strongly encourage you to go on a virtual tour of the testing center. To access this tour, click the What to Expect in a Pearson VUE test center at the following link: [home.pearsonvue.com/test-taker/security.aspx](http://home.pearsonvue.com/test-taker/security.aspx)

You also will receive a small, erasable whiteboard if you need one.

### Breaks

Breaks are only permitted for exams taken at Pearson VUE Testing Centers, and are not permitted during exams delivered via online proctoring.

### Online Proctoring

As of spring 2021, Excelsior is offering an [online delivery option for UExcel exams](#), using OnVUE, Pearson VUE's online delivery and proctoring service.

You must use a personal (vs. an employer's) computer if you want to take the exam online and not in a testing center, so the exam can be effectively delivered to you.

Breaks are not allowed during an exam taken online from home. You may not leave your seat during an online-proctored exam, so be prepared to sit for two or three hours. If you need extra time, the exam will have to be taken at a PearsonVUE Testing Center, and an accommodation formally requested.

**NOTE:** English Composition, Spanish, Music, and College Writing will NOT be available for online proctoring.

# On the Day of Your Exam

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## Important Reminders

On the day of your exam, remember to:

- dress comfortably: the computer will not mind that you're wearing your favorite relaxation outfit
- arrive at the test site rested and prepared to concentrate for an extended period
- allow sufficient time to travel, park, and locate the test center
- be prepared for possible variations in temperature at the test center due to weather changes or energy conservation measures
- bring your ID, but otherwise, don't weigh yourself down with belongings that will have to be kept in a locker during the test.

## Academic Integrity Nondisclosure Statement

- All examinees must agree to the terms of the Excelsior College Academic Integrity Policy before taking an examination. The agreement will be presented on screen at the Pearson VUE Testing Center before the start of your exam.
- Once the examinee agrees to the terms of the Academic Integrity Nondisclosure Agreement (NDA), the exam will begin.

If you choose not to accept the terms of the agreement

- your exam will be terminated
- you will be required to leave the testing center
- you will not be eligible for a refund. For more information, review the Student Policy Handbook at [www.excelsior.edu/studentpolicyhandbook](http://www.excelsior.edu/studentpolicyhandbook).

Student behavior is monitored during and after the exam. Electronic measures are used to monitor the security of test items and scan for illegal use of intellectual property. This monitoring includes surveillance of Internet chat rooms, websites, and other public forums.

## UExcel Grade Report

After you complete the exam, you will be issued a UExcel Grade Report for Examinations. See the [sample UExcel Grade Report](#) in this content guide.

## Grade Appeals

If you believe that your score grade is incorrect, you may appeal your grade to [examcredit@excelsior.edu](mailto:examcredit@excelsior.edu). Details about the appeals process are in the [Student Handbook](#).

## What If I Miss My Appointment?

If you don't cancel or reschedule your testing appointment 24 hours before your test appointment, you will have to pay the full fee of the exam, even if you don't show up.

## Late Arrivals

You will also forfeit the exam fee if you arrive to the test center more than 15 minutes late.

## Information About UExcel Exams for Colleges and Universities

A committee of teaching faculty and practicing professionals determines the learning outcomes to be tested on each exam. Excelsior College Center for Educational Measurement staff oversee the technical aspects of test construction in accordance with current professional standards. To promote fairness in testing, we take special care to ensure that the language used in the exams and related materials is consistent, professional, and user friendly. Editorial staff perform systematic quantitative and qualitative reviews to ensure accuracy, clarity, and compliance with conventions of bias-free language usage.

Excelsior College, the test developer, recommends granting three (3) semester hours of upper-level undergraduate credit to students who receive a letter grade of C or higher on this examination. The examination satisfies the research requirement in the sociology concentration of the Excelsior College baccalaureate degrees in Liberal Arts. Excelsior College baccalaureate-level nursing students should consult their advisors regarding duplication of credit with the Research in Nursing exam. Other colleges and universities also recognize this exam as a basis

for granting credit or advanced standing. Individual institutions set their own policies for the amount of credit awarded and the minimum acceptable grade.

## Research Methods in Psychology Exam Development Committee

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Lori-Ann Bonvino Forzano, PhD (State University of New York at Stony Brook, Experimental Psychology, 1992) Assistant Professor, State University of New York at Brockport

Paula Goolkasian, PhD (Iowa State University, Experimental Psychology, 1974)  
Professor, University of North Carolina–Charlotte

Rondall Boo-Hock Khoo, PhD (Pennsylvania State University, Experimental Psychology, 1990)  
Assistant Professor, Western Connecticut State University

Kathryn LaFontana, PhD (University of Connecticut, Social Psychology, 1995)  
Chair and Professor, Sacred Heart University

Jennifer Myers, PhD (University of Michigan, Developmental Psychology, 1992)  
Associate Director, University of Michigan at Ann Arbor

James H. Reynolds, PhD (Syracuse University, Psychology, 1961)  
Professor Emeritus, Colgate University

# Sample Grade Report

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Excelsior College  
GRADE REPORT FOR EXAMINATIONS

Contact ID:

Test Date: 11/21/2020

Letter Grade: C

Examination Code and Title: 210 Statistics

Recommended Credit:  
3 Lower Level

Your examination results are expressed as a Letter Grade of A, B, C, or F. Your results are automatically verified when they are received at Excelsior College. If an error is detected, you will be notified immediately.

**Recommended Credit** is the number of semester hours credit that Excelsior College awards and recommends for your grade. Excelsior College awards and recommends credit for letter grades of C or better.

**If you plan to take another examination**, you may download free content guides and the User's Guide by visiting our website at [www.excelsior.edu/exams/content-guides/](http://www.excelsior.edu/exams/content-guides/).

**If you need an Excelsior College Official Examinations Transcript** to document the credit you have earned for this examination for another institution, the request can be made online by accessing the Excelsior College website ([www.excelsior.edu](http://www.excelsior.edu)), logging into your MyExcelsior account, and scrolling down to the For Exams Takers box and clicking on the Request transcripts link. If you do not already have a MyExcelsior username and password, you can obtain one at no cost by accessing the Excelsior College website, clicking the Log In to MyExcelsior button, and then clicking the link "Create a MyExcelsior User Account."





7 Columbia Circle, Albany, New York 12203-5159

Phone | toll free 888-647-2388 or 518-464-8500

TDD | 518-464-8501

Fax | 518-464-8777

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