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## PHYSICAL SCIENCES PAPER 2 (CHEMISTRY)

GRADE 12

### TERMS & DEFINITIONS, QUESTIONS & ANSWERS PER TOPIC

2021



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# Physical Sciences Paper November 2014 Cheating

**Marc Morano**



## **Physical Sciences Paper November 2014 Cheating:**

**Fraud in the Lab** Nicolas Chevassus-au-Louis, 2019-08-13 From a journalist and former lab researcher a penetrating investigation of the explosion in cases of scientific fraud and the factors behind it In the 1970s a scientific scandal about painted mice hit the headlines A cancer researcher was found to have deliberately falsified his experiments by coloring transplanted mouse skin with ink This widely publicized case of scientific misconduct marked the beginning of an epidemic of fraud that plagues the scientific community today From manipulated results and made up data to retouched illustrations and plagiarism cases of scientific fraud have skyrocketed in the past two decades especially in the biomedical sciences Fraud in the Lab examines cases of scientific misconduct around the world and asks why this behavior is so pervasive Nicolas Chevassus au Louis points to large scale trends that have led to an environment of heightened competition extreme self interest and emphasis on short term payoffs Because of the move toward highly specialized research fewer experts are qualified to verify experimental findings And the pace of journal publishing has exacerbated the scientific rewards system publish or perish holds sway more than ever Even when instances of misconduct are discovered researchers often face few consequences and falsified data may continue to circulate after an article has been retracted Sharp and damning this expos details the circumstances that have allowed scientific standards to decline Fraud in the Lab reveals the intense social pressures that lead to fraud documents the lasting impact it has had on the scientific community and highlights recent initiatives and proposals to reduce the extent of misconduct in the future

Science Fictions Stuart Ritchie, 2020-07-21 An insider s view of science reveals why many scientific results cannot be relied upon and how the system can be reformed Science is how we understand the world Yet failures in peer review and mistakes in statistics have rendered a shocking number of scientific studies useless or worse badly misleading Such errors have distorted our knowledge in fields as wide ranging as medicine physics nutrition education genetics economics and the search for extraterrestrial life As Science Fictions makes clear the current system of research funding and publication not only fails to safeguard us from blunders but actively encourages bad science with sometimes deadly consequences Stuart Ritchie s own work challenging an infamous psychology experiment helped spark what is now widely known as the replication crisis the realization that supposed scientific truths are often just plain wrong Now he reveals the very human biases misunderstandings and deceptions that undermine the scientific endeavor from contamination in science labs to the secret vaults of failed studies that nobody gets to see from outright cheating with fake data to the more common but still ruinous temptation to exaggerate mediocre results for a shot at scientific fame Yet Science Fictions is far from a counsel of despair Rather it s a defense of the scientific method against the pressures and perverse incentives that lead scientists to bend the rules By illustrating the many ways that scientists go wrong Ritchie gives us the knowledge we need to spot dubious research and points the way to reforms that could make science trustworthy once again

Love, Money, and Parenting Matthias Doepke, Fabrizio Zilibotti, 2020-11-03

Doepke and Zilibotti investigate how economic forces shape how parents raise their children They show that in countries with increasing economic inequality such as the United States parents push harder to ensure their children have a path to security and success Economics has transformed the hands off parenting of the 1960s and 70s into a frantic overscheduled activity Growing inequality has also resulted in an increasing parenting gap between richer and poorer families raising the disturbing prospect of diminished social mobility and fewer opportunities for children from disadvantaged backgrounds The authors discuss how investments in early childhood development and the design of education systems factor into the parenting equation and how economics can help shape policies that will contribute to the ideal of equal opportunity for all

From publisher description      *Corrupted Science* John Grant,2018-05-01 A searing expos of the misuses and misrepresentations of science from the time of Galileo continuing through to the present day this new edition includes updates on the asbestos industry the chemicals industry the sugar industry the agriculture industry the abuse of antibiotics and the automobile industry lead in gasoline The final chapter has been expanded to include the full blooded assault on science mounted by the Trump administration      **Food Fraud Prevention** John W. Spink,2019-10-18 This textbook provides both the theoretical and concrete foundations needed to fully develop implement and manage a Food Fraud Prevention Strategy The scope of focus includes all types of fraud from adulterant substances to stolen goods to counterfeits and all types of products from ingredients through to finished goods at retail There are now broad harmonized and thorough regulatory and standard certification requirements for the food manufacturers suppliers and retailers These requirements create a need for a more focused and systematic approach to understanding the root cause conducting vulnerability assessments and organizing and implementing a Food Fraud Prevention Strategy A major step in the harmonizing and sharing of best practices was the 2018 industry wide standards and certification requirements in the Global Food Safety Initiative GFSI endorsed Food Safety Management Systems e g BRC FSSC IFS SQF Addressing food fraud is now NOT optional requirements include implementing a Food Fraud Vulnerability Assessment and a Food Fraud Prevention Strategy for all types of fraud and for all products The overall prevention strategy presented in this book begins with the basic requirements and expands through the criminology root cause analysis to the final resource allocation decision making based on the COSO principle of Enterprise Risk Management ERM The focus on the root cause expands from detection and catching bad guys to the application of foundational criminology concepts that reduce the overall vulnerability The concepts are integrated into a fully integrated and inter connected management system that utilizes the Food Fraud Prevention Cycle FFPC that starts with a pre filter or Food Fraud Initial Screening FFIS This is a comprehensive and all encompassing textbook that takes an interdisciplinary approach to the most basic and most challenging questions of how to start what to do how much is enough and how to measure success      The Trouble with Doctors: Dr. John Anderson,2022 This book arose from the authors knowledge of a small number of doctors who were not behaving in a professional or proper manner As he

read about them he found he was astonished at the extent of some offenders Any human being can have flaws in their character personality disorders or mental illnesses what if that person is your doctor This book takes the reader on a journey from the colorful life of Geoffrey Edelsten through Medawar s The Strange Case of the Spotted Mice a fertility specialist who used his own sperm to impregnate over 50 women without their knowledge to the lasting and devastating effects of the MMR vaccine debacle The author suggests that a test needs to be devised to detect character flaws such as greed before they harm innocent people through fraud and deceit As much a reference book as it is a celebration of the brave whistleblower and witty commentary on human nature capturing the imagination leading the reader to wonder why people make the decisions they do Anderson himself had a colorful life and a brilliant career leaving an immeasurable legacy to medicine His wish was that this book would prompt change leading to enhanced integrity in the medical and scientific world **Quantum**

**Legacies** David Kaiser,2020-03-25 A series of engaging essays that explore iconic moments of discovery and debate in physicists ongoing quest to understand the quantum world The ideas at the root of quantum theory remain stubbornly famously bizarre a solid world reduced to puffs of probability particles that tunnel through walls cats suspended in zombielike states neither alive nor dead and twinned particles that share entangled fates For more than a century physicists have grappled with these conceptual uncertainties while enmeshed in the larger uncertainties of the social and political worlds around them a time pocked by the rise of fascism cataclysmic world wars and a new nuclear age In Quantum Legacies David Kaiser introduces readers to iconic episodes in physicists still unfolding quest to understand space time and matter at their most fundamental In a series of vibrant essays Kaiser takes us inside moments of discovery and debate among the great minds of the era Albert Einstein Erwin Schrödinger Stephen Hawking and many more who have indelibly shaped our understanding of nature as they have tried to make sense of a messy world Ranging across space and time the episodes span the heady 1920s the dark days of the 1930s the turbulence of the Cold War and the peculiar political realities that followed In those eras as in our own researchers ambition has often been to transcend the vagaries of here and now to contribute lasting insights into how the world works that might reach beyond a given researcher s limited view In Quantum Legacies Kaiser unveils the difficult and unsteady work required to forge some shared understanding between individuals and across generations and in doing so he illuminates the deep ties between scientific exploration and the human condition **Climate**

**Politics and the Impact of Think Tanks** Alexander Ruser,2018-05-08 This book provides an innovative theoretical and analytical framework for studying the role and impact of specialized research organizations and consultancies on decision making in climate politics It includes advanced empirical analysis of the case of Germany compared with the situation in the USA The book improves the understanding of the role and impact of scientific advice in coping with the challenge of anthropogenic climate change [The Subjectivities and Objectivities of Peer Review](#) Daniel Ucko,2024-12-16 What do we want Evidence based science When do we want it After peer review We have come to think of peer review as the stamp of

quality that separates real results from mere conjecture but a look under the hood reveals that the participants inside of peer review are far from objective This book reclaims subjectivity and affirms a social mode of objectivity which prevents peer review from overpromising and underdelivering in its vital role in knowledge production     *Earnings Management, Fintech-Driven Incentives and Sustainable Growth* Michael I. C. Nwogugu, 2019-11-01 Traditional research about Financial Stability and Sustainable Growth typically omits Earnings Management as a broad class of misconduct Complex Systems Theory Mechanism Design Theory Public Health psychology issues and the externalities and psychological effects of Fintech Inequality Environmental Pollution Earnings Management opportunities the varieties of complex Financial Instruments Fintech Regulatory Fragmentation Regulatory Capture and real financial sector linkages are growing around the world and these factors can have symbiotic relationships Within Complex System theory framework this book analyzes these foregoing issues and introduces new behaviour theories Enforcement Dichotomies and critiques of models regulations and theories in several dimensions The issues analyzed can affect markets and evolutions of systems decision making internal Markets and risk perception within government regulators operating companies and investment entities and thus they have Public Policy implications The legal analysis uses applicable US case law and statutes which have been copied by many countries and are similar to those of many common law countries Using Qualitative Reasoning Capital Dynamics Theory a new approach introduced in this book Critical Theory and elements of Mechanism Design Theory the book aims to enhance cross disciplinary analysis of the above mentioned issues and to help researchers build better systems Artificial Intelligence mathematical models in Financial Stability Portfolio Management Policy Analysis Asset Pricing Contract Theory Enforcement Theory and Fraud Detection The primary audience for this book consists of university Professors PHD students and PHD degree holders in industries government agencies financial services companies and research institutes The book can be used as a primary or supplementary textbook for graduate courses in Regulation Capital Markets Law Economics International Political Economy and or Mechanism Design Applied Math Operations Research Computer Science or Finance     Fraud and Misconduct in Research Nachman Ben-Yehuda, Amalya Oliver-Lumerman, 2017-10-05 In *Fraud and Misconduct in Research* Nachman Ben Yehuda and Amalya Oliver Lumerman introduce the main characteristics of research misconduct portray how the characteristics are distributed and identify the elements of the organizational context and the practice of scientific research which enable or deter misconduct Of the nearly 750 known cases between 1880 and 2010 which the authors examine the overwhelming majority took place in funded research projects and involved falsification and fabrication followed by misrepresentation and plagiarism The incidents were often reported by the perpetrator s colleagues or collaborators If the accusations were confirmed the organization usually punished the offender with temporary exclusion from academic activities and institutions launched organizational reforms including new rules the establishment of offices to deal with misconduct and the creation of re training and education programs for academic staff Ben Yehuda and Oliver Lumerman

suggest ways in which efforts to expose and prevent misconduct can further change the work of scientists universities and scientific research

**Green Fraud** Marc Morano, 2021-03-23 If you care about America's future read this book Mark Levin A must read book that shows how the Green New Deal is dangerous impractical misguided and guaranteed to fail with disastrous results for the American people Sean Hannity A New Lockdown to Save the Climate That's what's in store for us if Alexandria Ocasio Cortez and the Democrats pass their radical climate plan the Green New Deal It is packed with guarantees so completely irrelevant to the problem it purports to solve like free college and incomes for everyone unable or unwilling to work that even its boosters have admitted it's not really about the climate The intrepid Marc Morano author of the bestselling Politically Incorrect Guide to Climate Change breaks down the science and the politics to expose the truth about the Green New Deal The science is settled copious evidence and prominent defections from the climate consensus make clear we are not facing a man made climate disaster Climate change is the perfect Trojan horse for the socialist agenda of the Left Fossil fuels lifted the West out of poverty but our elites now want to deny them to the world's poor The Green New Deal is on a collision course with self government and our fundamental rights Climate change has already been solved multiple times over the past two decades with highly touted international agreements and yet it never goes away as an excuse for leftist policies that will cripple our economy impoverish the world and take away our freedoms Packed with telling statistics damning quotations and real science Green Fraud is your source for all the facts you need to understand and resist the threat

**University Responsibility for the Adjudication of Research Misconduct** Stefan Franzen, 2021-05-12 This book offers a scientific whistleblower's perspective on current implementation of federal research misconduct regulations It provides a narrative of general interest that relates current cases of research ethics to philosophical historical and sociological accounts of fraud in scientific research The evidence presented suggests that the problems of falsification and fabrication remain as great as ever but hidden because the current system puts universities in charge of investigations and permits them to use confidentiality regulations to hide the outcomes of investigations The book documents the significant conflict of interest that arises because federal regulation gives universities the responsibility to conduct investigations of their own faculty with severely limited oversight The book is intended for young research scientists or anyone who wishes to understand the challenges faced by scientists in the workplace today The central thread in the book is an exclusive account of an experienced research scientist who was the first to expose the facts that led to the longest running research misconduct investigation in the history of the National Science Foundation

**Baseball FAQ** Tom DeMichael, 2016-01-01 Was Abner Doubleday the architect of baseball What exactly did it mean to be a professional baseball player in the 1870s What goes on in the front office What exactly is the Eephus pitch What are the tools of ignorance Readers will find the answers to these questions and many others in the pages of this remarkable baseball reference that's essential reading for fans of the game Part history book part instructional guide and part reference manual Baseball FAQ covers all the bases from the rules of the

game to the ballparks of yesterday and today from the minors to the major league from the stats to the food This engaging compulsively readable tome offers baseball fans of all ages a wealth of fun facts and anecdotes on America's favorite pastime including sections on the All American Girls Professional Ball League the Negro Leagues the basic skills of baseball baseball in the movies the scandals and the Hall of Famers

**Technology-Enhanced Language Teaching and Learning** Karim Sadeghi, Michael Thomas, Farah Ghaderi, 2023-02-23 The Covid 19 pandemic has directly impacted the way teachers and learners worldwide teach and learn languages forcing numerous educational activities in technologically deprived contexts to stop altogether and those in technologically rich environments to go online on an emergency basis This volume provides a collection of theoretical and practical insights into the challenges and affordances faced globally during the pandemic and lessons learnt about the application of digital technologies for language teaching and learning The chapters explore the vital role of technology in its various forms including the internet social media CALL Computer Assisted Language Learning MALL Mobile Assisted Language Learning TALL Technology Assisted Language Learning and TELL Technology Enhanced Language Learning Topics explored include the new avenues digital technology has opened up for language teachers and learners options and challenges in applying technology in various contexts and how the second language education industry could have been adversely impacted at the time of the pandemic without technological affordances The contributions showcase studies from various geographical contexts revealing how the global crisis was received and tackled differently in Australia Hong Kong Iran Italy Japan New Zealand the UAE the UK and the USA

**Market Momentum** Stephen Satchell, Andrew Grant, 2020-12-02 A one of a kind reference guide covering the behavioral and statistical explanations for market momentum and the implementation of momentum trading strategies Market Momentum Theory and Practice is a thorough how to reference guide for a full range of financial professionals and students It examines the behavioral and statistical causes of market momentum while also exploring the practical side of implementing related strategies The phenomenon of momentum in finance occurs when past high returns are followed by subsequent high returns and past low returns are followed by subsequent low returns Market Momentum provides a detailed introduction to the financial topic while examining existing literature Recent academic and practitioner research is included offering a more up to date perspective What type of book is Market Momentum and how does it serve a range of readers interests and needs A holistic market momentum guide for industry professionals asset managers risk managers firm managers plus hedge fund and commodity trading advisors Advanced text to help graduate students in finance economics and mathematics further develop their funds management skills Useful resource for financial practitioners who want to implement momentum trading strategies Reference book providing behavioral and statistical explanations for market momentum Due to claims that the phenomenon of momentum goes against the Efficient Markets Hypothesis behavioral economists have studied the topic in depth However many books published on the subject are written to provide advice on how to make money In contrast Market



Momentum offers a comprehensive approach to the topic which makes it a valuable resource for both investment professionals and higher level finance students The contributors address momentum theory and practice while also offering trading strategies that practitioners can study **The Soul of a University** Chris Brink,2018-07-01 What is the role of a university in society In this innovative book Chris Brink offers the timely reminder that it should have social purpose as well as achieve academic excellence The current obsession with rankings and league tables has perpetuated inequality and is preventing social mobility This book shows how universities can and should respond to societal challenges and promote positive social change **Benford's Law: Theory, The General Law Of Relative Quantities, And Forensic Fraud**

**Detection Applications** Alex Ely Kossovsky,2014-08-21 Contrary to common intuition that all digits should occur randomly with equal chances in real data empirical examinations consistently show that not all digits are created equal but rather that low digits such as 1 2 3 occur much more frequently than high digits such as 7 8 9 in almost all data types such as those relating to geology chemistry astronomy physics and engineering as well as in accounting financial econometrics and demographics data sets This intriguing digital phenomenon is known as Benford s Law This book gives a comprehensive and in depth account of all the theoretical aspects results causes and explanations of Benford s Law with a strong emphasis on the connection to real life data and the physical manifestation of the law In addition to such a bird s eye view of the digital phenomenon the conceptual distinctions between digits numbers and quantities are explored leading to the key finding that the phenomenon is actually quantitative in nature originating from the fact that in extreme generality nature creates many small quantities but very few big quantities corroborating the motto small is beautiful and that therefore all this is applicable just as well to data written in the ancient Roman Mayan Egyptian and other digit less civilizations Fraudsters are typically not aware of this digital pattern and tend to invent numbers with approximately equal digital frequencies The digital analyst can easily check reported data for compliance with this digital law enabling the detection of tax evasion Ponzi schemes and other financial scams The forensic fraud detection section in this book is written in a very concise and reader friendly style gathering all known methods and standards in the accounting and auditing industry summarizing and fusing them into a singular coherent whole and can be understood without deep knowledge in statistical theory or advanced mathematics In addition a digital algorithm is presented enabling the auditor to detect fraud even when the sophisticated cheater is aware of the law and invents numbers accordingly The algorithm employs a subtle inner digital pattern within the Benford s pattern itself This newly discovered pattern is deemed to be nearly universal being even more prevalent than the Benford phenomenon as it is found in all random data sets Benford as well as non Benford types **Borderless Education as a**

**Challenge in the 5.0 Society** Ade Gafar Abdullah,Vina Adriany,Cep Ubad Abdullah,2020-10-21 These proceedings contain a selection of papers presented at the 3rd International Conference on Educational Sciences organized on 16 November 2019 It covers themes such as philosophy and policy of teacher education curriculum teaching and learning approaches learner s

characteristics in the digital era global citizenship education vocational education teacher education qualification framework management supervision and assessment lifelong learning for all diversity in education equality of educational opportunity vocational and entrepreneurship education and education in the industry 4 0 era      **Positioning and Navigation in Complex Environments** Yu, Kegen, 2018-01-05 The limitations of satellites create a large gap in assistive directional technologies especially indoors The methods and advances in alternate directional technologies is allowing for new systems to fill the gaps caused by the limitations of GPS systems Positioning and Navigation in Complex Environments is a critical scholarly resource that examines the methodologies and advances in technologies that allow for indoor navigation Featuring insight on a broad scope of topics such as multipath mitigation Global Navigation Satellite System GNSS and multi sensor integration this book is directed toward data scientists engineers government agencies researchers and graduate level students

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In some sort of driven by information and connectivity, the ability of words has be much more evident than ever. They have the capacity to inspire, provoke, and ignite change. Such is the essence of the book **Physical Sciences Paper November 2014 Cheating**, a literary masterpiece that delves deep into the significance of words and their effect on our lives. Published by a renowned author, this captivating work takes readers on a transformative journey, unraveling the secrets and potential behind every word. In this review, we shall explore the book is key themes, examine its writing style, and analyze its overall effect on readers.

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