SAMPLE QUESTION PAPER 1

A Highly Simulated Sample Question Paper for ISC Class XII

MATHEMATICS (Fully Solved)

GENERAL INSTRUCTIONS

1. The Question Paper consists of three sections A, B and C.
2. Candidates are required to attempt all questions from **Section A** and all questions **either** from **Section B** or **Section C**.
3. **Section A** Internal choice has been provided in two questions of two marks each, two questions of four marks each and two questions of six marks each.
4. **Section B** Internal choice has been provided in one question of two marks and one question of four marks.
5. **Section C** Internal choice has been provided in one question of two marks and one question of four marks.
6. All working, including rough work, should be done on the same sheet as, and adjacent to the rest of the answer.
7. The intended marks for questions or parts of questions are given in brackets [ ].
8. Mathematical tables and graph papers are provided.

Time : 3 Hours   *Max. Marks : 80*

Section A (65 Marks)

1. In sub-parts (i) to (x) choose the correct option and in sub-parts (xi) to (xv), answer the questions as instructed.   [15 × 1]

   (i) If the binary operation * defined on Q, is defined as $a * b = 2a + b - ab$, $\forall\, a,\, b \in Q$, then the value of $3 * 4$ is

   (a) 2   (b) -2 (c) 3   (d) -3

   (ii) Let $A = \{1, 2, 3, \ldots n\}$ and $B = \{a, b\}$. Then, the number of surjection from A into B is

   (a) ^nP_n (b) $2^n - 2$ (c) $2^n - 1$ (d) None of these

   (iii) Value of $\sin\left(2\sin^{-1}\dfrac{3}{5}\right)$ is

   (a) $\dfrac{12}{25}$ (b) $\dfrac{24}{25}$ (b) $\dfrac{13}{25}$ (d) $\dfrac{17}{25}$

   (iv) If $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 3 & 2 \\ 4 & 3 & 1 \end{bmatrix}$, $C = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$ and $D = \begin{bmatrix} 4 & 6 & 8 \\ 5 & 7 & 9 \end{bmatrix}$, then which of the sum is defined?

   (a) $A + B$ (b) $C + D$ (c) $B + C$ (d) $B + D$

   (v) If $\begin{bmatrix} 1 & 2 \\ -2 & -b \end{bmatrix} + \begin{bmatrix} a & 4 \\ 3 & 2 \end{bmatrix} = \begin{bmatrix} 5 & 6 \\ 1 & 0 \end{bmatrix}$, then $a^2 + b^2$ is equal to

   (a) 20   (b) 22   (c) 12   (d) 10

Mathematic Paper 2013 September

Great Britain. Parliament. House of Lords

Mathematic Paper 2013 September:

Mathematics and Transition to School Bob Perry,Amy MacDonald,Ann Gervasoni,2015-01-09 This edited book brings together for the first time an international collection of work focused on two important aspects of any young child s life learning mathematics and starting primary or elementary school The chapters take a variety of perspectives and integrate these two components in sometimes explicit and sometimes more subtle ways The key issues and themes explored in this book are the mathematical and other strengths that all participants in the transition to school bring to this period of a child s life the opportunities provided by transition to school for young children s mathematics learning the importance of partnerships among adults and among adults and children for effective school transitions and mathematics learning and teaching the critical impact of expectations on their mathematics learning as children start school the importance of providing children with meaningful challenging and relevant mathematical experiences throughout transition to school the entitlement of children and educators to experience assessment and instructional pedagogies that match the strengths of the learners and the teachers the importance for the aspirations of children families communities educators and educational organisations to be recognised as legitimate and key determinants of actions experiences and successes in both transition to school and mathematics learning and the belief that young children are powerful mathematics learners who can demonstrate this power as they start school In each chapter authors reflect on their work in the area of mathematics and transition to school place that work within the overall context of research in these fields predict the trajectory of this work in the future and consider the implications of the work both theoretically and practically **Proceedings of the First International Conference on Applied Mathematics, Statistics, and Computing (ICAMSAC 2023)** Komang Dharmawan,Ngurah Agus Sanjaya ER,2024-05-11 This is an open access book ICAMSAC 2023 Theme Application of Mathematics and Computing in Multidisciplinary Research With ScopeApplication of Mathematics and Computing in Multidisciplinary Research The Subject Scope of The ConferenceMathematical modeling optimization numerical analysis differential equations mathematical physics and mathematical biology probability theory statistical modeling experimental design data visualization multivariate analysis machine learning and applications of statistics in various domains such as finance healthcare social sciences and engineering cloud computing programming languages algorithms artificial intelligence data mining high performance computing scientific computing numerical simulations and computational modeling ICAMSAC 2023 aims to bring together leading academic scientists researchers andresearch scholars to exchance and share their experiences and research results on all aspects of Mathematics Statistics and Computing It also provides a platform researchers practitioners and educators to present and discuss recent innovations current issues trends and challenges faced International Handbook of Mathematical Learning Difficulties Annemarie Fritz,Vitor Geraldi Haase,Pekka Räsänen,2019-01-30 This comprehensive volume provides teachers researchers and education professionals with cutting edge knowledge developed in the last

decades by the educational behavioural and neurosciences integrating cognitive developmental and socioeconomic approaches to deal with the problems children face in learning mathematics The neurocognitive mechanisms and the cognitive processes underlying acquisition of arithmetic abilities and their significance for education have been the subject of intense research in the last few decades but the most part of this research has been conducted in non applied settings and there s still a deep discrepancy between the level of scientific knowledge and its implementation into actual educational settings Now it s time to bring the results from the laboratory to the classroom Apart from bringing the theoretical discussions to educational settings the volume presents a wide range of methods for early detection of children with risks in mathematics learning and strategies to develop effective interventions based on innovative cognitive test instruments It also provides insights to translate research knowledge into public policies in order to address socioeconomic issues And it does so from an international perspective dedicating a whole section to the cultural diversity of mathematics learning difficulties in different parts of the world All of this makes the International Handbook of Mathematical Learning Difficulties an essential tool for those involved in the daily struggle to prepare the future generations to succeed in the global knowledge society

Contributing Factors to TIMSS 2011 Eighth Graders' Science Achievement: A Comparison between Malaysia and Singapore Lay Yoon Fah,Ng Khar Thoe,Suma Parahakaran,2020-05-03 Trends in International Mathematics and Science Study TIMSS is one of the projects of the International Association for the Evaluation of Educational Achievement IEA located at Amsterdam The Netherlands and Hamburg Germany IEA is an independent cooperative of national educational research institutions and governmental research agencies dedicated to improving education TIMSS is conducted regularly for every four years to assess students achievement in science and mathematics at both the fourth and eighth grades The project is dedicated to providing participating countries with information to improve teaching and learning in science and mathematics This book is written especially for the interest of undergraduate students postgraduate students and educators of science education who wish to know more about the contributing factors to Grade 8 students science achievement in TIMSS This book is also resourceful for individuals who are involved directly or indirectly in the administration and implementation of TIMSS at the national state district and school levels This book consists of seven chapters The first chapter gives a brief introduction to TIMSS which includes the TIMSS curriculum model and TIMSS science assessment frameworks The subsequent chapters compare the contribution of various factors i e home environment support school resources school climate teacher preparation and classroom instructions on Malaysian and Singaporean Grade 8 students science achievement in TIMSS 2011 Last but not least recommendations on ways to improve Malaysian Grade 8 students science achievement in the forthcoming TIMSS are suggested based on the experiences of the Singaporean education system **What Do We Mean by That?** Laura Rychly,2024-09-09 What Do We Mean by That Interrogating Familiar Expressions in Education is a collection of essays that opens a space for all educational workers teachers teacher

educators administrators politicians and others to unpack commonly used educational phrases and ideas The idea is to carefully examine what we say to one another when we talk about schools curriculum students and other educational problems or issues when we say things like We have to meet students where they are and All children can learn or What does the data say What Do We Mean by That challenges and clarifies such phrases and the how and why that they shape educational policies and practices The influential curricular theorist Dwayne Huebner charged us to always be aware of our man made tools such as language and said that since all educators attempt to shape the world theorists should call attention to the tools used for the shaping in order that the world being shaped can be more beautiful and just Language is a tool in educational practice in myriad ways between administrators and teachers teachers and students teachers and parents and students and students as examples A scripted curriculum is a tool intended to provide fixed language to teachers It is normal for phrases to make their way into our everyday practices and get lodged there But we need opportunities to interrupt ourselves and study our language tools to ensure they help create beauty and justice This collection of thoughtful essays seeks to be this interruption It is an invaluable tool for improving the educational experience of students and schools Perfect for courses such as Foundations of Education Curriculum Studies Diversity in Education Educational Rhetoric and Policy

All-Attainment Teaching in Secondary Mathematics Colin Jackson,2022-02-09 This book is about the promotion of all attainment teaching in the mathematics classroom The book contains the individual stories of six teachers working in three different schools an inner London comprehensive with a largely working class intake a comprehensive on the south coast and a rural comprehensive in Cambridgeshire Each story describes and explains in brief the background of the teacher and how each came to teach all attainment groups in mathematics The research reported in this book is the only close examination and analysis of the practices and methodologies of successful all attainment educators in the modern age Three major themes are identified and examined what sustains the teachers how they introduce develop and maintain all attainment teaching and how they make all attainment work in the classroom From an analysis of these findings the book presents two interrelated models of the knowledge and understandings the research has generated The first one is an overarching model of situation and horizon Used as a means of visualizing and understanding the current situation for teachers it can aid in encouraging change for the better The second model offers teachers a way to think of all attainment teaching as an enabler for all students most especially for disadvantaged students Both models have original and explanatory power and offer new ways of conceptualizing how mathematics teaching for social justice might be understood and implemented offering fresh perspectives and unique insights As such it will be of help to students at undergraduate Masters and doctoral level and to education researchers more widely   **Leading Primary Mathematics** Catherine Foley,Jane McNeill,Stephanie Suter,2019-03-18 This book provides guidance and insight into what mathematics leadership looks like in practice and shows readers how they can develop from a confident teacher into a curriculum subject leader It does this

through a careful blend of pedagogy and practical application supported by a range of real world case studies and opportunities to reflect critically on classroom practice Key coverage includes The planning and application that underpins subject leadership How international perspectives can influence leadership of mathematics How to develop fluency through problem solving and reasoning How to champion inclusive practice in mathematics Assessing children s understanding This is essential reading for anyone studying primary mathematics on initial teacher education courses including undergraduate BA Ed BA with QTS and postgraduate PGCE PGDE School Direct and SCITT routes NQTs seeking to develop into curriculum leadership roles and those already leading mathematics in their school *Kochi Journal of Mathematics* ,2015 *Hokkaido Mathematical Journal* ,2016-02 *Bulletin of the American Mathematical Society* ,2014-04 Journal for Research in Mathematics Education ,2015 **Journal of Mathematics** ,2010 Identifying, Assessing and Supporting Learners with Dyscalculia Kathleen Kelly,2020-07-13 Online Resources are open access No code is required It is vital to understand the challenges and provide the right support for learners with dyscalculia and specific learning difficulties in mathematics The book provides an overview of current research explaining the nature and causation of dyscalculia guidance on the identification of dyscalculia examples of how to carry out informal and formal assessments an explanation of the principles of multisensory mathematics teaching an outline of a structured programme for learners aged 5 14 together with examples of lesson planning and activities Designed for teachers specialising in the assessment and teaching of learners with dyscalculia and those undertaking courses leading to Approved Teacher Dyscalculia ATD and Associate Membership of the British Dyslexia Association AMBDA the book is useful to any professional looking for an understanding of this area of specific difficulty Abstracts of Papers Presented to the American Mathematical Society American Mathematical Society,1995 **Revista Matemática Iberoamericana** ,2015 高知大学教育学部研究報告数学 ,1992 Memoir and Scientific Correspondence of the Late Sir George Gabriel Stokes, Bart. ... Sir George Gabriel Stokes,1907 Garkuwa Journal of Education ,2017-03 **SIAM Journal on Applied Mathematics** Society for Industrial and Applied Mathematics,1966 Contains research articles on mathematical methods and their applications in the physical engineering biological and medical sciences **The Parliamentary Debates (Hansard).** Great Britain. Parliament. House of Lords,2014

Mathematic Paper 2013 September Book Review: Unveiling the Magic of Language

In a digital era where connections and knowledge reign supreme, the enchanting power of language has be much more apparent than ever. Its ability to stir emotions, provoke thought, and instigate transformation is truly remarkable. This extraordinary book, aptly titled "**Mathematic Paper 2013 September**," compiled by a highly acclaimed author, immerses readers in a captivating exploration of the significance of language and its profound affect our existence. Throughout this critique, we shall delve to the book is central themes, evaluate its unique writing style, and assess its overall influence on its readership.

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