

LIFE SCIENCE

GRADE 10 FINAL EXAMINATION

MARK ALLOCATION FOR THE TOPICS

- CHEMISTRY OF LIFE: 20 MARKS
- CELL AND CELL CONTENT: 30 MARKS
- CELL DIVISION: 20 MARKS
- PLANT AND ANIMAL TISSUES : 20 MARKS
- LEAF: 10 MARKS
- SUPPORT AND TRANSPORT IN PLANTS AND TRANSPIRATION : 30 MARKS
- SUPPORT IN ANIMALS – HUMAN SKELETON : 20 MARKS

TOTAL: 150 MARKS

PAPER-1 AND MEMORANDUM

Grade 10 Life Science Po November 2014 Memorandum

Karin Nielsen-Saines



Grade 10 Life Science Po November 2014 Memorandum:

Yeah, reviewing a books **Grade 10 Life Science Po November 2014 Memorandum** could amass your close links listings. This is just one of the solutions for you to be successful. As understood, exploit does not suggest that you have wonderful points.

Comprehending as without difficulty as concurrence even more than further will give each success. next to, the proclamation as capably as perspicacity of this Grade 10 Life Science Po November 2014 Memorandum can be taken as capably as picked to act.

https://staging.conocer.cide.edu/book/Resources/index.jsp/instruction_manual_for_walther_nighthawk_pellet_gun.pdf

Table of Contents Grade 10 Life Science Po November 2014 Memorandum

1. Understanding the eBook Grade 10 Life Science Po November 2014 Memorandum
 - The Rise of Digital Reading Grade 10 Life Science Po November 2014 Memorandum
 - Advantages of eBooks Over Traditional Books
2. Identifying Grade 10 Life Science Po November 2014 Memorandum
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Grade 10 Life Science Po November 2014 Memorandum
 - User-Friendly Interface
4. Exploring eBook Recommendations from Grade 10 Life Science Po November 2014 Memorandum
 - Personalized Recommendations
 - Grade 10 Life Science Po November 2014 Memorandum User Reviews and Ratings
 - Grade 10 Life Science Po November 2014 Memorandum and Bestseller Lists
5. Accessing Grade 10 Life Science Po November 2014 Memorandum Free and Paid eBooks

- Grade 10 Life Science Po November 2014 Memorandum Public Domain eBooks
 - Grade 10 Life Science Po November 2014 Memorandum eBook Subscription Services
 - Grade 10 Life Science Po November 2014 Memorandum Budget-Friendly Options
6. Navigating Grade 10 Life Science Po November 2014 Memorandum eBook Formats
- ePub, PDF, MOBI, and More
 - Grade 10 Life Science Po November 2014 Memorandum Compatibility with Devices
 - Grade 10 Life Science Po November 2014 Memorandum Enhanced eBook Features
7. Enhancing Your Reading Experience
- Adjustable Fonts and Text Sizes of Grade 10 Life Science Po November 2014 Memorandum
 - Highlighting and Note-Taking Grade 10 Life Science Po November 2014 Memorandum
 - Interactive Elements Grade 10 Life Science Po November 2014 Memorandum
8. Staying Engaged with Grade 10 Life Science Po November 2014 Memorandum
- Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Grade 10 Life Science Po November 2014 Memorandum
9. Balancing eBooks and Physical Books Grade 10 Life Science Po November 2014 Memorandum
- Benefits of a Digital Library
 - Creating a Diverse Reading Collection Grade 10 Life Science Po November 2014 Memorandum
10. Overcoming Reading Challenges
- Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Grade 10 Life Science Po November 2014 Memorandum
- Setting Reading Goals Grade 10 Life Science Po November 2014 Memorandum
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Grade 10 Life Science Po November 2014 Memorandum
- Fact-Checking eBook Content of Grade 10 Life Science Po November 2014 Memorandum
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning
- Utilizing eBooks for Skill Development

- Exploring Educational eBooks

14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

Grade 10 Life Science Po November 2014 Memorandum Introduction

In the digital age, access to information has become easier than ever before. The ability to download Grade 10 Life Science Po November 2014 Memorandum has revolutionized the way we consume written content. Whether you are a student looking for course material, an avid reader searching for your next favorite book, or a professional seeking research papers, the option to download Grade 10 Life Science Po November 2014 Memorandum has opened up a world of possibilities.

Downloading Grade 10 Life Science Po November 2014 Memorandum provides numerous advantages over physical copies of books and documents. Firstly, it is incredibly convenient. Gone are the days of carrying around heavy textbooks or bulky folders filled with papers. With the click of a button, you can gain immediate access to valuable resources on any device. This convenience allows for efficient studying, researching, and reading on the go. Moreover, the cost-effective nature of downloading Grade 10 Life Science Po November 2014 Memorandum has democratized knowledge. Traditional books and academic journals can be expensive, making it difficult for individuals with limited financial resources to access information. By offering free PDF downloads, publishers and authors are enabling a wider audience to benefit from their work. This inclusivity promotes equal opportunities for learning and personal growth. There are numerous websites and platforms where individuals can download Grade 10 Life Science Po November 2014 Memorandum. These websites range from academic databases offering research papers and journals to online libraries with an expansive collection of books from various genres. Many authors and publishers also upload their work to specific websites, granting readers access to their content without any charge. These platforms not only provide access to existing literature but also serve as an excellent platform for undiscovered authors to share their work with the world. However, it is essential to be cautious while downloading Grade 10 Life Science Po November 2014 Memorandum. Some websites may offer pirated or illegally obtained copies of copyrighted material. Engaging in such activities not only violates copyright laws but also undermines the efforts of authors, publishers, and researchers. To ensure ethical downloading, it is advisable to utilize reputable websites that prioritize the legal distribution of content. When downloading Grade 10 Life Science Po November 2014 Memorandum, users should also consider the potential security risks associated with online platforms. Malicious actors may exploit vulnerabilities in unprotected websites to distribute malware or steal personal information. To protect themselves, individuals should ensure their devices have reliable antivirus software installed and validate the legitimacy of the websites they are downloading from.

In conclusion, the ability to download Grade 10 Life Science Po November 2014 Memorandum has transformed the way we access information. With the convenience, cost-effectiveness, and accessibility it offers, free PDF downloads have become a popular choice for students, researchers, and book lovers worldwide. However, it is crucial to engage in ethical downloading practices and prioritize personal security when utilizing online platforms. By doing so, individuals can make the most of the vast array of free PDF resources available and embark on a journey of continuous learning and intellectual growth.

FAQs About Grade 10 Life Science Po November 2014 Memorandum Books

1. Where can I buy Grade 10 Life Science Po November 2014 Memorandum books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Grade 10 Life Science Po November 2014 Memorandum book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Grade 10 Life Science Po November 2014 Memorandum books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.
5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing. Book Swaps: Community book exchanges or online platforms where people exchange books.
6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing, and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.
7. What are Grade 10 Life Science Po November 2014 Memorandum audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.
8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores.

Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.

9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.
10. Can I read Grade 10 Life Science Po November 2014 Memorandum books for free? Public Domain Books: Many classic books are available for free as they're in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

Find Grade 10 Life Science Po November 2014 Memorandum :

instruction manual for walther nighthawk pellet gun

instant millionaire book 2

instructions for monopoly empire

instructional fair light matching worksheet page 87 answers

instructors solution manual discrete and its applications

integrated chinese level 1 part 2

intel 945 motherboard display problem

institute of advanced engineering and science

instruction manual for dell inspiron 1525

instructor manual linear algebra anton

instant edmodo how to laur dayna

integra dc2 manual

intek 21 hp engine manual

instructor manual lab ccna 4 2001

instructional fair inc physical science if8767

Grade 10 Life Science Po November 2014 Memorandum :

daily current affairs gk 4 app store - Jul 21 2022

web this app provides 100 authentic verified daily current affairs gk for exams best coverage of daily current affairs gk for all competitive exam preparation practice your daily current affairs gk quizzes study our current affairs from our current affairs

gk app and you can ace any competitive govt exam ssc ssc chsl ssc

current affairs quiz 2023 current affairs question with answer - Sep 22 2022

web here are the latest current affairs quiz 2023 questions with answers for bank exams like sbi po clerk ibps po clerk ibps rrb ssc exams railway other competitive exams current affairs questions july 2023

weekly current affairs important dates quiz 14 20 october 2023 - Apr 29 2023

web oct 20 2023 below are the useful current affairs quiz 2023 practice questions in important dates for competitive exams like appsc october 2023 gk quiz sakshi current affairs weekly current affairs quiz important dates practice bits 10 top remote jobs for everyone in 2 view all more articles weekly current affairs

gktoday current affairs gk general knowledge general - Oct 04 2023

web nov 3 2023 gktoday is india s top website for gk general knowledge current affairs and general studie for upsc ssc banking ibps ias ntse clat railways nda cds judiciary uppsc rpsc gpssc mpssc mppsc and other states civil services government job recruitment examinations of india

current affairs mock test online weekly quiz - May 31 2023

web sendhil october 16 2019 affairscldoud youtube channel click here affairscldoud app click here we collected some important current affairs questions from our 2020 2019 2018 2017 2016 daily quiz data base and make it as online current affairs weekly test kindly take current affairs weekly quiz improve your knowledge

weekly current affairs important dates quiz 7 13 october 2023 - Jan 27 2023

web oct 13 2023 weekly current affairs important dates quiz 7 13 october 2023 sakshi education below are the useful current affairs quiz 2023 practice questions in important dates for competitive exams like appsc tspsc groups and upsc civil services prepared by sakshi education 1

general knowledge gk 2023 questions notes topics facts practice quiz - Aug 02 2023

web general knowledge gk 2023 check here latest and today gk questions answers quiz gs ga for various competitive upsc exams improve your gk here

current affairs november 2022 daily quiz and gk updates career - Aug 22 2022

web despite of being a vast subject for government exams our experts are trying to cover all important current affairs and for a daily dose of current affairs november 2022 do bookmark this page our experts will consider all the important events that happen across the nation the world and are important from the perspective of government exams

2023 latest general knowledge questions latest gk today gk - Oct 24 2022

web 2023 latest gk gk quiz latest general knowledge questions and answers in 2022 general knowledge gk questions for competitive exams

web for daily updated current affairs and news related question answer and quiz do visit this page regularly current affairs questions and quiz always plays a vital role in competitive exams this webpage will also help you to improve general

knowledge gk for better exam preparation boost you knowledge by exploring these current affairs

23rd march daily current affairs 2023 gk quiz updates all job - Feb 13 2022

web mar 23 2023 we have provided current affairs quiz with explanation and static points also applicants can get latest current affairs quiz of 23 march 2023 and prepare for state central government exams or any other competitive exam

bookmark this page to visit more frequently to get daily current affairs

mock test current affairs gk apk android app free - Apr 17 2022

web mar 29 2023 access unlimited free mock tests for preparing government jobs by downloading test karo app features of test karo app tests are available in both languages hindi english get a detailed explanation of the solutions of each exam no paid content all premium content is available for free all test series are truly

modelling metabolism with mathematica edition 1 paperback - Apr 02 2022

with the advent of sophisticated general programming environments like mathematica the task of developing new models of metabolism and visualizing their uh oh it looks like your internet explorer is out of date

modelling metabolism with mathematica 1st edition vitalsource - Mar 01 2022

modelling metabolism with mathematica 1st edition is written by peter mulquiney philip w kuchel and published by crc press the digital and etextbook isbnns for modelling metabolism with mathematica are 9780203503935 0203503937 and the print isbnns are 9780849314681 0849314682 save up to 80 versus print by going digital with vitalsource

modelling metabolism with mathematica detailed examples - Jun 16 2023

cell metabolism computer simulation enzyme kinetics computer simulation erythrocytes computer simulation erythrocytes metabolism mathematica computer program language cells metabolism computer simulation enzymes pharmacokinetics

modelling metabolism with mathematica - Jan 31 2022

kindly say the modelling metabolism with mathematica is universally compatible with any devices to read cellular degradative processes r t dean 1978 current challenges in modeling cellular metabolism daniel machado 2016 01 21

mathematical and computational models play an essential role in understanding the cellular metabolism they are

modelling metabolism with mathematica mulquiney - Aug 06 2022

modelling metabolism with mathematica analysis of human erythrocyte by peter j mulquiney philip w kuchel edition 1st edition may 2003 format hardcover 308pp publisher crc press isbn 0849314682 tags

modelling metabolism with mathematica wolfram - Sep 19 2023

modelling metabolism with mathematica by peter j mulquiney philip w kuchel publisher crc press year 2003 isbn 0849314682 hardcover 309 pp book includes cd rom description this book presents the approaches methods tools and algorithms for modelling the chemical dynamics of metabolic pathways

modeling metabolism with mathematica request pdf - May 15 2023

may 14 2003 modelling metabolism with mathematica presents the approaches methods tools and algorithms for modelling the chemical dynamics of metabolic pathways

modelling metabolism with mathematica pdf free download - May 03 2022

we chose mathematica because of its huge suite of mathematical functions that can be implemented by simple one line commands for its symbolic computational power and for the large number of other texts that can be used by a student to gain proficiency in the language and to glean ideas for metabolic modelling

modelling metabolism with mathematica searchworks catalog - Jun 04 2022

select search scope currently catalog all catalog articles website more in one search catalog books media more in the stanford libraries collections articles journal articles other e resources

modelling metabolism with mathematica google books - Apr 14 2023

with the advent of sophisticated general programming environments like mathematica the task of developing new models of metabolism and visualizing their responses has become accessible to students of biochemistry and the life sciences in general

modelling metabolism with mathematica open library - Feb 12 2023

modelling metabolism with mathematica by peter j mulquiney 2019 taylor francis group edition in english

parameter estimation 9 modelling metabolism with - Jan 11 2023

models of real cellular systems can become extremely complicated when constructed in this way for example the model of the red blood cell described in chapter 7 contains 60 state variables metabolites and 270 parameters such systems are often said to be overparameterized with respect to the available experimental data

modelling metabolism with mathematica peter mulquiney - Aug 18 2023

may 13 2003 abstract with the advent of sophisticated general programming environments like mathematica the task of developing new models of metabolism and visualizing their responses has become accessible to students of biochemistry and the life sciences in general

modelling metabolism with mathematica bookshop - Jul 05 2022

the authors explain the concepts underpinning the deterministic theory of chemical and enzyme kinetics present a graded series of computer models of metabolic pathways leading up to that of the human erythrocyte and document a consistent

modelling metabolism with mathematica 1st edition routledge - Jul 17 2023

modelling metabolism with mathematica presents the approaches methods tools and algorithms for modelling the chemical dynamics of metabolic pathways

modelling metabolism with mathematica google books - Mar 13 2023

with the advent of sophisticated general programming environments like mathematica the task of developing new models of metabolism and visualizing their responses has become accessible to

modelling metabolism with mathematica overdrive - Oct 08 2022

may 14 2003 modelling metabolism with mathematica presents the approaches methods tools and algorithms for mode read more

mathematical modelling of metabolism sciencedirect - Dec 10 2022

apr 1 2000 figure 1 principles of stoichiometric modelling firstly a stoichiometric matrix is defined that appropriately describes the metabolism under investigation based on available biochemical information secondly the stoichiometric matrix is multiplied by the so called vector of reaction rates defining the mass balance equation

modelling metabolism with mathematica anna s archive - Nov 09 2022

modelling metabolism with mathematica presents the approaches methods tools and algorithms for modelling the chemical dynamics of metabolic pathways the authors explain the concepts underpinning the deterministic theory of chemical and enzyme kinetics present a graded series of computer models of metabolic pathways leading up to that of

modelling metabolism with mathematica softcover abebooks - Sep 07 2022

the authors explain the concepts underpinning the deterministic theory of chemical and enzyme kinetics present a graded series of computer models of metabolic pathways leading up to that of the human erythrocyte and document a consistent

picaxe 08m2 circuitlab - Jun 24 2022

web sep 15 2013 picaxe 08m2 public created by beera1 created september 15 2013 last modified march 14 2015 tags no tags summary not provided link share circuitlab provides online in browser tools for schematic capture and circuit simulation these tools allow students hobbyists and professional engineers to design and analyze

circuit picaxe 08m2 tempos tempos circuit picaxe 08m2 - Apr 22 2022

web picaxe incorporates 08 micro m2 digital input with push pot adjustment function switch 2a relay output and power indicators relay recording connector suitable for development of automation that require external control with a button and a potentiometer for example a timer picaxe intègre 08 micro m2

picaxe manuals getting started picaxe - Oct 29 2022

web the picaxe manual is divided into four separate downloads section 1 getting started section 2 basic commands section 3 microcontroller interfacing circuits section 4 using flowcharts section 5 blockly for picaxe this first section provides general information for getting started with the picaxe system

picaxe 08m2 circuit temperature picaxe 08m2 circuit - Aug 27 2022

web picaxe 08m2 circuit température circuito picaxe 08m2 temperatura ucpic 2 technical characteristics voltage 12 v dc we

start with a simple program we read the temperature 29 and if the value is the same as above activate the output nous commençons avec un programme simple lire la température 29 et si la valeur est la

introducing the picaxe system technical articles all about circuits - May 24 2022

web jul 27 2015 for windows users the latest offering is called picaxe editor 6 and consists of a full featured ide integrated development environment and a flowchart coding aid for mac or linux operating systems there is axepad which also will run under windows both options include and support a very capable version of basic

picaxe programming basics part 1 technical articles - Jul 06 2023

web aug 3 2015 this article will cover the basics of programming a picaxe microcontroller and will use a very simple test circuit and sample code to help explain the programming process the test circuit is shown in the schematic diagram below and in a labeled photograph of the circuit built on a solderless breadboard microcontroller picaxe

picaxe pinouts what is picaxe picaxe - Feb 01 2023

web serial download circuit 3 5mm serial download socket never ever leave the serial input pin of the picaxe chip floating unconnected the serial in download pin is shown in the pinout diagrams above e g leg 2 on 08m2 a floating serial in pin will result in unreliable operation and is inviting trouble

picaxe 08m2 circuit all about circuits - Sep 27 2022

web may 16 2012 picaxe 08m2 circuit home forums embedded programming microcontrollers picaxe 08m2 circuit thread starter spark8217 start date may 12 2012 search forums new posts thread starter spark8217 joined aug 29 2011 64 may 12 2012 1 hi guys well started with controllers for the first time seem to

picaxe 08m2 circuit 2 relays circuit picaxe 08m2 farnell - Jul 26 2022

web characteristic voltage 12 v dc minimum consumption 15 ma maximum consumption 75 ma supported picaxe 08m2 08m relay maximum load 2 amp 230 vac protection reverse polarity yes recommended power supply fe 103 size 72 x 87 x 30 mm din rail

08m2 with 12v relay circuit picaxe forum - Nov 29 2022

web oct 8 2022 08m2 circuit jpg 284 7 kb views 41 the bear senior member oct 7 2022 2 for starters the battery negatives should be connected together jeff haas senior member oct 7 2022 3 please post the code you re using to trigger the relay look at p 109 of picaxe manual 2 for the basic format you can test your code with an led then

picaxe 18m2 microcontroller circuits bristolwatch com - Feb 18 2022

web fig 2 picaxe 18m2 pictured above is the 18m2 chip based on the microchip pic16 l f1826 it has 2048 bytes of program memory flash ram 256 bytes of static ram 256 bytes of eeprom and 16 i o pins that can be configured as shown above the i o is configured in two 8 bit ports known as portb and portc

picaxe m2 information - Jun 05 2023

web the new picaxe 08m2 14m2 18m2 and 20m2 microcontrollers build on example part comparison 08m2 picaxe feature basic command 08m2 08m 08 memory capacity bytes max memory capacity lines 2048 1800 256 220 128 110 real life in circuit simulation 9 88 factory engraved picaxe name 9 88 picaxe m2 product briefing 4

picaxe 08m2 microcontroller - Mar 22 2022

web the picaxe 08m microcontroller can be used with any software application that supports the picaxe hardware including the easy to use flowcharting software logicator for picaxe and the free picaxe programming editor the picaxe 08m2 replaces the older picaxe 08 and picaxe 08m chips unit 2 industrial quarter bath business park foxcote ave

controlling a servo with a picaxe and an ir sensor - May 04 2023

web dec 29 2016 a picaxe 08m2 can be used to read the amount of ir infrared light falling on a phototransistor and respond by moving a servo to a predetermined position learn how to combine a picaxe ir sensors and a servo motor to create a device that responds to a moving stimulus spoilers i hook it up to eyeballs that can follow a finger

08m2 motherboard circuit creator picaxe - Sep 08 2023

web the 08m2 motherboard is the controlling heart of an 8 pin picaxe system to which other input and output interfaces connect all 08m2 commands schematic pcb create module bill of materials simulation schematic print view full size pcb print view full size motherboard test program

picaxe 08m2 microcontroller axe007m2 hardware picaxe - Mar 02 2023

web product details the smallest but most popular picaxe microcontroller very popular in education due to its low cost and small size but also very popular in a wide range of hobbyist projects small but perfectly formed this chip supports up to 6 inputs outputs with 3 analogue touch sensor channels

how to use picaxe kitronik ltd - Apr 03 2023

web jan 5 2015 08m2 5 3 in or out 1 in only 1 out shared with programming pin 0 3 18m2 16 14 in or out 1 in only 1 out shared with programming pin 0 10 20m2 16 16 in or out 0 11 when it comes to selecting a chip size for a project it is important to make sure it has enough inputs and outputs to fulfil the specification of the project

simplest digital frequency counter 08m2 project gallery picaxe - Dec 31 2022

web apr 13 2013 the program code is simple and the parts count is insanely low at under 10 components total a picaxe 08m2 is in control of a small lcd counter module the code for the picaxe is also very simple only 11 lines long the picaxe takes care of 3 crucial functions it creates the 1 second 1000 msec sampling time such that the digital

build a temperature and or humidity controlled fan with a picaxe 08m2 - Aug 07 2023

web sep 25 2017 a picaxe 08m2 microcontroller and an hih6030 sensor team up to easily control a ventilation fan using

temperature or humidity or both we use a ventilation fan when we want to move air

a simple 2 hour picaxe project play tunes with an 08m2 - Oct 09 2023

web step 1 picaxe project parts list 1 picaxe 08m2 microcontroller 1 8 ohm speaker or 40 ohm speaker and omit the 33 ohm resistor when using 40 ohms 1 8 pin ic socket 1 3mm stereo jack 1 22k ohm resistor 1 33 ohm resistor 3 10k ohm resistors 1 two position dip switch or equivalent switches