

3rd sem diploma mechanical engineering notes

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Q&A on Thermodynamics

1. Define thermodynamics and state its laws.

- Thermodynamics is the study of energy and its transformation. The laws of thermodynamics are:
 - First Law: Energy cannot be created or destroyed, only transferred or converted.
 - Second Law: Entropy, a measure of disorder, always increases over time.
 - Third Law: Entropy approaches zero as temperature approaches absolute zero.

Q&A on Fluid Mechanics

2. Explain the principle of Pascal.

- Pascal's principle states that pressure applied to a confined fluid is transmitted throughout the fluid equally in all directions. This principle is used in hydraulic systems, such as brakes and lifts.

3. What is Bernoulli's equation and what principle does it express?

- Bernoulli's equation is an equation of motion for an inviscid, incompressible fluid. It expresses the principle of conservation of energy, stating that the sum of potential, kinetic, and pressure energy remains constant along a streamline.

Q&A on Strength of Materials

4. Define Young's modulus and describe its significance.

- Young's modulus is a measure of the stiffness of a material. It is defined as the ratio of stress to strain in the elastic region of a stress-strain curve. A higher Young's modulus indicates a stiffer material.

5. What is the difference between static and dynamic loads?

- Static loads are applied gradually and remain constant over time, while dynamic loads are applied suddenly or vary over time. Dynamic loads can cause additional stresses and potential failures.

Q&A on Machine Design

6. Explain the concept of machine efficiency.

- Machine efficiency is the ratio of output power to input power. It measures the effectiveness of a machine in converting energy. Losses due to friction, heat, and other factors reduce machine efficiency.

7. What are the types of gears and their applications?

- There are various types of gears, each with its own applications. Spur gears are used for parallel shafts, helical gears for intersecting shafts, and bevel gears for intersecting shafts at right angles.

What is animal cell culture and its application? Animal cell culture is used to study the effects of new drugs, cosmetics and chemicals on survival and growth of a number of types of cells. Especially liver and kidney cells. Cultured animal cells are also used to determine the maximum permissible dosage of new drugs.

What are the concepts of animal tissue culture? Tissue culture is in vitro maintenance and propagation of isolated cells tissues or organs in an appropriate artificial environment. Many animal cells can be induced to grow outside of their organ or tissue of origin under defined conditions when supplemented with a medium containing nutrients and growth factors.

What are 3 applications of cell culture? Animal cell cultures have been applied for studying basic cell biology, interactions of drugs and other chemicals with cells, production of vaccines and proteins, etc.

What are the applications of animal organ culture? Organ culture is used principally for (1) the maintenance of structural organization in tissues which are to be subjected to experimentally varied environments (e.g., to hormones, drugs, or radiation); (2) the study of morphogenesis, differentiation, and function in excised organs or presumptive organs; and (3) for ...

Why is cell culture important for animals and humans? Mass culture of animal cell lines is fundamental to the manufacture of viral vaccines and other products of biotechnology. Culture of human stem cells is used to expand the number of cells and differentiate the cells into various somatic cell types for transplantation.

Why is animal culture important? Furthermore, by understanding animal cultures, the authors believe we can better understand behaviors that were previously considered “abnormal” or “atypical” in captivity. When assessing captive animal welfare, it's common practice to measure animals' “normal” or “species-typical” behaviors.

What are the concepts of cell culture? Cell culture is the growth of cells from an animal or plant in an artificial, controlled environment. Cells are removed either from the organism directly and disaggregated before cultivation or from a cell line or cell strain that has previously been established.

What is the purpose of cell culture? Cell culture is one of the major tools used in cellular and molecular biology, providing excellent model systems for studying the normal physiology and biochemistry of cells (e.g., metabolic studies, aging), the effects of drugs and toxic compounds on the cells, and mutagenesis and

carcinogenesis.

What is the difference between animal cell culture and tissue culture? Animal cell culture requires a broad spectrum of nutrients for its growth. Plant tissue culture, on the other hand, requires a specific set of nutrients for its cultivation. Animal cell culture can be of two types: adherent cell culture and suspension culture.

What is the principle of cell culture? Cell culture refers to the removal of cells from an animal or plant and their subsequent growth in a favorable artificial environment.

What are the four major requirements for cell culture?

What are cell lines in animal cell culture? Cell lines are cultures of animal cells that can be propagated repeatedly and sometimes indefinitely. They arise from primary cell cultures. Primary cultures are initiated directly from the cells, tissues, or organs of animals and are typically used in experiments within a few days.

What are the application of animal cell culture technique?

What is the maximum application of animal cell culture today? Cultured animal cells are used in the production of vaccines producing viruses. Vaccines for polio, rabies, chicken pox, measles and hepatitis B are produced using animal cell culture.

What are animal cell cultures used widely for production of? Today, mammalian cell culture is a prerequisite for manufacturing biological therapeutics such as hormones, antibodies, interferons, clotting factors, and vaccines.

What is the maximum application of animal cell culture today? Cultured animal cells are used in the production of vaccines producing viruses. Vaccines for polio, rabies, chicken pox, measles and hepatitis B are produced using animal cell culture.

What are the applications of animal cell culture for virus propagation? This method helps with the detection, identification, and characterization of viruses in the laboratory. Tissue culture of animal viruses involves growing animal cells in flasks using various broth media and then infecting these cells with virus.

What are the applications of primary cell culture? Genetic Engineering: Primary cell cultures are used to produce commercially important genetically engineered

proteins such as monoclonal antibodies, insulin, hormones, and much more. Tissue or Organ Replacement: Primary cell cultures can be used as replacement tissue or organs.

What is an example of animal cell culture media? Animal cell culture media typically contain energy sources like glucose, amino acids as nitrogen sources, vitamins, inorganic salts, fatty acids, antibiotics, growth factors, and hormones. Most media also require an incubator to maintain optimal temperature, pH, osmolality, and gaseous environment for cell growth.

Who is the youngest person to pass CCNA? Girls! This is Ayesh Fatima: the youngest-ever Cisco Certified Network Associate (CCNA) professional in the world. Imagine breaking the world record, aged only seven years old and becoming the youngest ever Cisco Certified Network Associate (CCNA) professional in the world.

Is IT possible to self study CCNA? Yes, it is possible to teach yourself CCNA. With the availability of online resources such as study materials, tutorials, practice exams, and virtual labs, you can learn and prepare for the CCNA certification independently.

How many people fail the CCNA first try? The CCNA routing/switching exam passing rate is 85%. However, according to some resources, the test's failure rate on the first attempt is +/- 95%. Although it is not difficult, the exam can be challenging for newcomers to network.

How many hours should I study for CCNA? How long does it take from scratch to get CCNA R&S certified? This really depends on your background and knowledge but as a rule of thumb, it takes about ~150 hours to pass one of the exams. It takes quite some time to: Work your way through all the material.

Is CCNA very difficult? CCNA is Comprehensive With so much to study, the exams may seem tough to pass. We recommend a focus on ICDN, which serves the base for all types of Cisco CCNA exams. This requires candidates to go through the length and breadth of the topics.

What is the lowest salary for a CCNA? While ZipRecruiter is seeing salaries as high as \$64.05 and as low as \$14.47, the majority of Ccna salaries currently range between \$28.46 (25th percentile) to \$49.09 (75th percentile) in California.

Is CCNA stressful? Time pressure: The CCNA exam is timed, and candidates must answer a large number of questions in a limited amount of time. This can be stressful for some individuals, especially if they are not used to taking exams under time pressure.

Is CCNA enough to get a job? The CCNA certification is a valuable asset for individuals looking to enhance their networking skills and advance their careers. It not only opens up increased employment opportunities in large enterprises but also provides global recognition and a strong foundation for career development.

Can you learn CCNA in 2 months? First of all, CCNA can be divided into self-study and class registration. It takes 2-3 months for self-study and 1 month for class registration to get the CCNA certificate. It is enough to say It is perfectly possible to pass CCNA in 2 months.

How respected is the CCNA? The CCNA certification is recognized globally; meaning that in almost every place you go, your work will remain relevant. Who knows, you may even get a raise once you get your certification.

Can I retake CCNA for free? Recertification Fees & Costs for the CCNA Certification CCNA recertification choices include the following. The CCNA exam can be retaken for \$300. Pay \$400 for a core exam like ENCOR. Obtain a certificate of completion for anyone concentration exam.

Can you retake CCNA if you fail? The exam is considered extremely difficult, but don't panic—failing the CCNA exam isn't the end of the world. Cisco allows you to retake the exam after a five day waiting period.

Can I complete CCNA in 3 months? Completing the Cisco Certified Network Associate (CCNA) certification in 3 months is achievable for many individuals, but it depends on various factors such as your existing knowledge of networking concepts, your study schedule, and the time you can dedicate to studying each day.

Can I get CCNA in a week? While networking can be intimidating, with a study and preparation, you can be certified in a matter of weeks. Given, this path is not for the wavering. If you want to be CCNA certified in a couple of weeks, you need to study, watch videos, and train for a couple of hours a day. Do not be discouraged though!

Can I study for CCNA in a month? New IT professionals with no work experience will probably take more than 5 months to prepare for the CCNA 200-301, while network administrators with a few years of work experience can probably pass the 200-301 in less than 3 months. Studying for the 200-301 is even harder if you can't develop a good study habit.

How old do you have to be to get a CCNA? Persons between 13 and 17 can take the exam and get the certification if passed only with parental consent. Persons above 18 (including) are eligible to take the exam without any age restrictions.

What is the age limit for Cisco? Age Requirements and Policies Concerning Minors In compliance with the Cisco Online Privacy Statement Summary, age requirements for Cisco certification are as follows: Underage minors are children under 13 who cannot test or receive certification, even with parental consent.

How many people have passed CCNA? The CCNA demonstrates your ability to secure and administer network infrastructures, the backbone of any organization's cybersecurity posture. Cisco is one of the largest digital communications technology companies in the world. Over 4 million people are Cisco-certified.

What grade do you need to pass CCNA? Passing score: This is also not published information, but a general rule tends to be around 80% correct answers to pass the exam. Question types: Performance-based simulations and questions that test theoretical knowledge are a part of the exam.

What is included in the Norton Anthology of American Literature? The Norton Anthology of American Literature is a compendium of various works by authors of specifically American birth or naturalization, ranging from short poems, pamphlets, and novellas to longer entries such as entire novels and philosophical pieces.

Who wrote the Norton Anthology of American Literature 10th edition? The Norton Anthology of American Literature | Robert S Levine, Sandra M Gustafson | W. W. Norton & Company.

When was the Norton Anthology of American Literature shorter ninth edition published?

How to cite the Norton Anthology of American Literature 10th edition?

Anthology or Edited Book Citation Format: Last name, First name, editor. Title of Book. Edition, Publisher, year of publication. In-Text Citation Format: (Editor's or Editors' Last Name(s) Page Number).

What is the purpose of the Norton Anthology? The anthology provides an overview of poetry, drama, prose fiction, essays, and letters from Beowulf to the beginning of the 21st century.

What does American literature include? Study the field of American literature, which is the body of written works produced in the United States, including novels, short stories, drama, poetry, biographies/autobiographies, works of history, essays, and literary criticism.

What is in the Norton Anthology of English Literature 10th edition? Book overview The Tenth Edition supports survey and period courses with NEW complete major works, NEW contemporary writers, and dynamic and easy-to-access digital resources. Also available is an ebook featuring exciting, teachable core selections of some of the very best of English literature from the print anthology.

Who edited the Norton Anthology of English Literature? Here, M. H. Abrams, the founding general editor, and Stephen Greenblatt, the current general editor, discuss the history of the anthology, the challenges facing English literature survey courses and the enduring question, Why study literature?

Who wrote the Norton Introduction to Literature 14th edition? About the Author Kelly J. Mays has taught writing and literature courses for 25 years ? at Stanford University (where she earned her Ph.

What year is the Norton Introduction to Literature 13th edition? New York : W.W. Norton & Company, [2019]. Edition: Shorter thirteenth edition.

What year was the Norton Anthology of African American Literature published?

Who wrote the Norton anthology of World Literature? The Norton Anthology of World Literature | Martin Puchner, Suzanne Conklin Akbari, Wiebke Denecke,

Barbara Fuchs, Caroline Levine, Pericles Lewis, Emily Wilson | W. W. Norton & Company.

How to cite the Norton Anthology of English Literature 8th edition? Lastname, Firstname. "Title of Work." Title of Anthology, edited by Firstname Lastname, Edition number, Publisher, Year of publication, Page number range. Mansfield, Katherine. "The Garden Party." The Norton Anthology of English Literature, edited by Stephen Greenblatt and M. H. Abrams, 8th ed., Norton, 2006, pp.

Who is the publisher of The Norton Introduction to Literature 12th edition? Publisher W. W. Norton & Company and author Kelly J. Mays have partnered to produce The Norton Introduction to Literature 12th Edition (9780393938937).

Who published the Norton anthology of Short Fiction?

What is included in an anthology? An anthology is a collection of literary pieces by various different authors. It can sometimes refer to the collected output of a single author (for instance, The Complete Works of William Shakespeare), but it generally refers to a compilation presenting many different writers.

What is included in the Red book? The book contains a record of your child's injections (immunisations and vaccinations). It is important that you have a record of these, and you should take this book to any appointments for these injections. There are growth charts in the Red Book to help see how your baby is growing.

What is in the Norton Anthology of English Literature 10th edition? Book overview The Tenth Edition supports survey and period courses with NEW complete major works, NEW contemporary writers, and dynamic and easy-to-access digital resources. Also available is an ebook featuring exciting, teachable core selections of some of the very best of English literature from the print anthology.

What are the common literary themes of Central America? Romanticism, Realism, Naturalism, and Emerging Literary Trends. The Latin American wars of Independence that occurred in the early 19th century in Latin America led to literary themes of identity, resistance, and human rights.

[animal cell culture concept and application](#), [chris bryant ccna study](#), [norton anthology of american literature](#)

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