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The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. For the PTCB exam, candidates must have a thorough and detailed knowledge of how to calculate doses. Here, we review 5 examples of the type, style, and difficulty of math question you can expect on the day of your test. Knowing math is important. For example, pharmacy technicians may be given a prescription where the dose recommended by the prescriber is not available by a given brand. Instead, the technician needs to calculate the number of tablets that must be given to match the prescriber's prescription. In this pharmacy technician math study guide, we examine many of these questions. Of course, when it comes to dose calculation questions, there are numerous ways you can approach each question. Here, we try to avoid using proportional sets as a mechanism. The reason is two-fold. First, that using proportional sets tends to add more steps to solve the question, thereby increasing the risk of error. Second, using a more logical approach to solve the problem reduces the risk of error. Below, we use a logical approach to the math questions that we recommend. What said, we would always recommend that you adopt the approach we think is best for you. You may find more on our method should be used to 'confirm' where you have arrived at the correct answer. No matter what method you choose, it's vital that you practice PTCB exam questions. The more questions you practice, the better and more refined your knowledge and understanding of math questions. Without further ado, then, let's review 5 sample PTCB math questions - this time, focusing exclusively on dosage calculations. A physician prescribes 'ampicillin 0.5g po qid'. The dose available to the pharmacy technician is 250mg per capsule. How many capsules should be prescribed to the patient? First, always ask yourself whether units are consistent. In this case, the physician prescribed 0.5 grams, whereas the medicine is available in the pharmacy as 250mg per capsule. These are inconsistent unit and must therefore be corrected before we can continue. 0.5 grams is the same as 500 milligrams. Next step - we must know the total dose of drug prescribed to the patient. This means having a detailed knowledge of prescription abbreviations. As you are aware, 'po qid' refers to 'orally 4 times daily'. This means the patient needs to take 500 milligrams four times during the day - or 2,000 milligrams per day. The dose available in the pharmacy is 250mg per capsule - meaning that the patient needs to take 2 of these capsules 4 times per day. 8 capsules of the available medicine must therefore be prescribed to the patient to meet the physician's prescription. Let's summarize the steps as follows: Ensure that units are consistent - milligrams, grams etc. Find the total dose prescribed to the patient. Use the dose available in the pharmacy to determine how many tablets should be given to meet that total dose. Let's advance onto our second example. The physician prescribed Celectin 150mg IM q12h x 4d. The medicine is available as clindamycin phosphate 100mg/2mL. How many mL of Celectin should be prescribed to the patient? Like before, let's review the question from a methodical, reasoned approach. First, are units the same? Yes - Clectin is available as 150mg and the pharmacy has a generic form the medicine available at 100mg. Next, what is the total dose of Clectin prescribed to the patient? Again, we must understand the prescription abbreviations: 150mg to be administered via the intramuscular route, every 12 hours, for 4 days. 50mg every 12 hours is the same as 300mg per day. 300mg per day must be given for 4 days, so 1,200mg of Clectin is required. However, the pharmacy has a generic form, clindamycin phosphate (the active ingredient of Clectin) available at a dose of 100mg/2mL. If there 100mg in 2mL, then 1,200mg must have 24mL - by simple matter of multiplication. Therefore, 24mL of clindamycin phosphate must be prescribed to the patient to meet the needs of the physician's prescription. What dose, in milligrams (to the nearest whole number), should be given to a patient who weighs 196lbs when the drug literature states that the dose should be 0.4mg/4kg? Again, we must always begin with asking about units - are they the same? In this case, the answer is no. We have 196lbs and we also have 4kg. Because the question asks to answer in milligrams, we must convert 4 kilograms to lbs - that way all units are the same. To convert kilos to lbs, we must multiply by 2.2 (remember this conversion!). 4 kilograms x 2.2 = 8.8 pounds (lbs) Now, we know that the patient weighs 196lbs and that, for each 8.8lbs of the patient's weight, they must take 0.4mg of the drug. Therefore, if we divide 196lbs by 8.8lbs, we will learn the total number of milligrams of drug the patient needs to take. 196lbs / 8.8lbs = 22.27 doses of 0.4mg/4kg are needed. 22.27 x 0.4mg = 8.9mg of drug The question asks us "to the nearest whole number", meaning... 8.9mg to the nearest whole number = 9mg A 196lb patient must take 9mg of the drug. How many millilitres of ampicillin 250mg/5mL should be dispensed if the patient is prescribed iii tsp po tid x 7d? To answer this question, we simply need to know the volume of medicine to be dispensed. We can ignore the 250mg/5mL - it is simply the dose available in the pharmacy, but that does not concern us here. Sometimes when answering PTCB sample questions, you need to know when to ignore details in the question. Often, not all details need to be used. Bear this tip in mind as you continue through this math study guide. Instead, you must identify what information to use and why it needs to be used! First, we must correctly interpret the prescription abbreviations: 3 teaspoons, to be taken orally, 3 times a day, for 7 days. Remember - there is 5mL in 1 teaspoon! Three teaspoons (15mL) taken 3 times daily = 45mL needed per day. The prescription requires 7-day's supply - (45mL x 7) = 315mL. Therefore, 315mL of ampicillin 250mg/mL should be dispensed to the patient. So, for added detail - every 5mL of that 315mL of medicine contains 250mg of ampicillin! Let's now move onto the last and trickiest of our math study guide! A pharmacy technician is asked to prepare 360mL of a 250mg/5mL drug solution. The drug is only available in 200mg tablets. How many tablets are needed to prepare 360mL of a 250mg/5mL solution? At first, this question might seem difficult. However, if you follow our method below, you'd be surprised how manageable it becomes! First, we must understand what the question is asking us to do. You, the pharmacy technician, are asked to prepare a 360mL solution for a patient. In every 5mL of that solution, there must be 250mg of drug. This means when the patient takes 5mL, they are guaranteed to have 250mg of drug to treat their condition (250mg/5mL is the dose). The drug is available, but only as tablets - each of which has 200mg. So, now that we know the groundwork, let's develop a method solution to work this problem out, and all related PTCB math problems. First, when you are asked to make a 360mL of a 250mg/5mL solution, you need to work out the total number of milligrams of drug in that solution. In other words, if every 5mL of the 360mL solution has 250mg, then there must be 18,000mg of drug in a 360mL solution: 360mL divided by 5mL is 72. 72 x 250mg = 18,000mg Imagine the question asked you to prepare 20mL of a 5mg/5mL solution. If there is 5mg in 5mL, then there must be 20mg in 20mL! It's the same thing here, just the numbers are bigger and far more awkward to deal with! Now, we know that we need 18,000mg. The question asks us how many 200mg tablets are needed. By simple division then... 18,000mg divided by 200mg = 90 Tablets Ninety 200mg tablets are needed to produce a 360mL solution, with each 5mL of that solution containing 250mg! Math is an important part of the PTCB test. In this pharmacy technician math study guide, we have focused on the calculation of doses. We have offered 5 core examples, all of which can appear on the day of your PTCB exam. We strongly recommend knowing how to calculate doses - questions are almost guaranteed to appear. The most math PTB practice questions are found in the Test Prep we think you should use. We have also included PTCB math questions that explain the answers to maximize your understanding of the questions. If you are going wrong, PTCB Test Prep is the leading online platform that trains pharmacy technicians throughout the United States. Check back to our blog soon for more great questions and answers on our pharmacy technician math study guide! Pharmacy Technicians use math every day in their jobs to interpret orders, dispense medication, bill insurance companies and perform compounding calculations. Since the PTCB exam is based on everyday tasks performed by technicians, knowing how to do these calculations is vital to your success. At minimum, you can expect to see: Basic MathFractionsDecimalsRoman numeralsPercentagesSystems of measurementsRatios and proportionsBasic algebra When filling prescriptions and tracking inventory, one employs addition, subtraction, multiplication and division. Depending on the pharmacy, some technicians may use a POS register to tender cash payments and make change for customers who use cash. Other operations also require basic knowledge of Business Math. Many dosage calculations use amounts other than whole numbers. Technicians may find themselves working with these amounts to fill prescriptions and complete pharmaceutical calculations, such as dosage conversions, IV admixtures and administration of drug dose over time; therefore, one must be able to add, subtract, multiply and divide fractions and decimals. You must be able to understand decimals and place values. And, converting fractions to decimals and decimals into fractions is not uncommon. Roman numerals are still used by some physicians in dosage computations. The Pharmacy Technician must be able to interpret these computations correctly. Pharmacy Technicians will encounter different systems of measurement, such as the metric system, the avoirdupois system, the apothecary system, and household measurements. They must be able to identify and understand units from each system and be able to convert amounts from one system to the next. An example of this is converting temperatures from Fahrenheit to Celsius. When performing a pharmaceutical calculation, pharmacy technicians often must solve for an unknown quantity. They use basic algebra to do this. Most commonly, the algebra is combined with proportions and percentages in order to calculate a new amount. Where would you like to go now?Prescription AbbreviationsFree Practice TestHome PageTop 200 DrugsAsk A Math QuestionsAsk A Pharmacy Tech QuestionSite Map Though basic knowledge and mathematical skill is needed to be a Pharmacist or Pharmacy Technician, extensive mathematical skill is not required. Basic algebra is a necessary skill however, as does knowledge of formulas. During work itself, you should constantly practice calculations and use tools to calculate dosages effectively. The PTCB Math Exam covers topics such as basic arithmetic, algebra, dosage calculations, prescription interpretations, unit conversions, percentage calculations, IV flow rates, concentration and dilution calculations, and compounding calculations. Start your study session by reviewing the exam content outline provided by the PTCB. Familiarize yourself with the types of math problems included in the exam. Gather study materials and practice tests, such as textbooks, online resources, practice exams, and other practice tests and exams specifically designed for the PTCB Math Exam. The day before the exam: Review key formulas and concepts Take a few practice questions to stay sharp, but avoid overloading yourself Ensure you have all necessary materials ready, such as your ID and exam confirmation Get a good night's sleep to ensure you're well-rested To keep the other nursing students and the nursing school students stay calm and focused during the exam: Take deep breaths and remain positive Read each question carefully before answering Manage your time effectively, ensuring you have enough time for all questions Stay hydrated and take short breaks if allowed By following this definitive guide and utilizing the provided strategies and resources, you can effectively prepare for the PTCB Math Exam and increase your chances of success. PTCB Practices Test 2025: Order Entry And Processing How To Study For The PTCB Exam The "Pass First Time" Method PTCB Practice Test 2025:Federal Requirements Licensing health care providers awarded in pharmacy Not to be confused with Pharmaceutical technologist (a specialist in pharmaceutical technology), pharmacy technicians working in hospital settings is \$14.57(28) American pharmacy technicians work under the supervision of a pharmacist, while technicians work in the pharmaceutical field and pharmacy technicians subordinate to pharmacists.[20][21] A report was published by the Pharmacists' Defiance Association in 2019 making proposals for a pharmacy technician (PHT) performs pharmacy-related functions including but not limited to filling out prescription medications, training, certification, licensing, and actual practice of pharmacy technicians varies not only worldwide but in some countries regionally as well as by employer.[1] Pharmacy technicians are healthcare professionals trained in the technical aspects of supplying medicines and medical devices to patients since the 1950s. Pharmacy technicians work in a variety of locations (usually in community, retail, and hospital pharmacies), but can also work for long-term care facilities, pharmaceutical manufacturers, third-party insurance companies, computer software companies, in government, the military, or in teaching. Job responsibilities often include dispensing prescription drugs and other medical devices to patients and instructing them on their use. They may also perform administrative duties in a pharmaceutical practice, such as reviewing prescription requests with medical practices and insurance companies to ensure correct medications are provided and payment is received. Additionally, pharmacy technicians handle inventory related tasks such as cycle counts and returning expired and damaged medications back to the manufacturers.[2][3][4] Pharmacy technicians may take on the role of compounding supervisor, overseeing day to day sterile and non-sterile medicines preparation while meeting standards required by regulatory bodies.[citation needed] In recent times, pharmacy technicians also speak directly with the patients on the phone to aid in the awareness of taking medications on time. In many countries, the relative importance of pharmacy technicians on time. In many countries, the relative importance of pharmacy technicians within the pharmacy workforce has been amplified in recent years, largely as a reaction to pharmacist shortages, resulting in an increase in their numbers and responsibilities.[5][6][7] The Pharmacy Examining Board of England and Wales, the Board of Examiners in the Pharmacy Technicians Qualifying Examination. Pharmacy technicians are required to be registered with a provincial or a national regulatory body or council. In provinces and jurisdictions where pharmacy technician is a regulated occupation, liability insurance is required to practice.[7][8] According to a 2007 profile of the pharmacy technician workforce, 43% of technicians work in hospitals and other related facilities, 37% in chain or franchise community pharmacies, and 16% in independent community pharmacies.[9] Most (62%) obtained pharmacy technician training from a career college or community college, some (16%) had only a high school education and no formal pharmacy training, while about 20% had some university education. A very small proportion (2%) had trained and worked abroad as either pharmacists or pharmacy technicians.[10] The wide range of technical training and educational attainment likely reflects in part the variety of training programs for pharmacy technicians currently available in the different provinces and territories of the country.[9] Accredited pharmacy technician diplomas, certificates and college programs are offered in the Ontario, Alberta, British Columbia, Nova Scotia, Manitoba, Saskatchewan and New Brunswick.[11] The Canadian Association of Pharmacy Technicians is a professional organization of pharmacy technicians in Canada. This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unourced material may be challenged and removed. (April 2022) (Learn how and when to remove this message)According to the German Statistisches Bundesamt, 66,867 pharmacy technicians ("Pharmazeutisch-technische Assistenten") were working in 2011. About 90% were working as employees in community pharmacies. Their salary (approx. 1,837 - 2,400 Euros) is part of agreements between employers associations and Adexa. This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unourced material may be challenged and removed. (April 2022) (Learn how and when to remove this message)Pharmacy technicians are known as assistant pharmacists. Several universities offer programs of three and half years of education and training. This occupation appeared due to the lack of pharmacists in Saudi Arabia in 1990, a reason they are commonly confused with pharmacists. Pharmacy regency technicians are regulated and monitored by the Saudi Commission for Health Specialties. According to the MOH Statistics, there were about 8,471 of pharmacy technicians working in MOH Saudi Arabia in 2015. In 2010, the Minister of Health, Abdullah Al-Rabiah, issued a decision to stop the teaching of pharmacy technicians immediately. This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unourced material may be challenged and removed. (April 2022) (Learn how and when to remove this message) In Sri Lanka, the government Agency National Apprentices and Industrial Training Authority (NAITA) has developed National Competency Standards (NCS) leading to the award of the NVQ Level 4 certification as pharmacy technician for pharmacy employees who have above four years of experience. The NCS is approved by the Tertiary and Vocational Education Commission in 2016 and is presently being implemented. The one-year training consists of subject areas in compounding, dispensing, stock management, housekeeping practices and customer care development. The first batch of 154 certified pharmacy technicians are already employed in the community pharmacy sector.[clarification needed] In 2009, a World Health Organization assessment identified a total of 918 practising pharmacy technicians or technologists (1 per 25,600 residents) and 1,642 medicine counter assistants (1 per 14,300 residents). In regards to training, the assessment identified only one pharmacy technologist training school in the country (enrolling 70 students in the Higher National Diploma program).[12] R.C.S.M. Govt Medical College and CPR Hospital, Kolhapur provides training for pharmacy technicians in India. To be a pharmacy technician, completion of this program is 10+2 + diploma.[clarification needed] There are two batches a year that intakes approximately 40 students per batch. This section has multiple issues. Please help improve it or discuss these issues on the talk page. (Learn how and when to remove this message) This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unourced material may be challenged and removed. (April 2022) (Learn how and when to remove this message) This article is written like a personal reflection, personal anecdote, or argumentative essay that states a Wikipedia editor's own feelings or presents an original argument about a topic. Please help improve it by rewriting it in an encyclopedic style. (April 2022) (Learn how and when to remove this message) Pharmacy technicians in Nigeria make up 75% of pharmaceuticals' work force. Pharmacists Council of Nigeria refused to allocate responsibilities that will give them right to practice at community level interdependently. The case was in court and the court ruled against PCN on December 3, 2008. Nigerian pharmacy technicians in collaboration with National Board for Technical Education (NBTE) are currently saving Nigerian Economy and Nigerians from the professional monopoly played by PCN which led to abundant fake drugs due lack of manpower. This exposed Nigerian to a lot of problems which lead reduction in productivity leading to sustainable poverty. Nigerian pharmacy technicians in collaboration with NBTE are able to achieve these by introducing ND/HND in pharmaceutical technology. PCN is doing everything possible to stop this training to sustain its monopoly, demanding Federal ministry of education to direct NBTE to stop accrediting the polytechnics while these course are offered in Ghana, Sudan and other countries. The meeting called at the instance of NBTE on 25 May 2016 where the PCN, representative of the Honourable Minister of Health, Federal Ministry of Education, Pharmaceutical Society of Nigeria (PSN) and National Association of Pharmaceutical Technologists and Pharmacy Technicians of Nigeria were in attendance; certain issues bothering on the nomenclature Pharmaceutical Technologists, the curriculum and the accrediting body for polytechnic graduates of pharmaceutical Technology were raised. There it was made clear that the nomenclature (Pharmaceutical Technologist) is not new in Nigeria as the training of people bearing the name were trained at the former School of Pharmaceutical Technologists between 1981 and 1985. The premises of the school is being used as the liaison office of the PCN today. It was also established that NBTE is saddled with the accreditation of courses in Nigeria. PCN is not a pharmacy technician before undertaking a diploma. As for the one with a diploma, the Board of Examiners in the Pharmacy Technicians Qualifying Examination revealed that relevant bodies should be consulted together to review the common needs of PCN. Taxes levied on pharmacy technician schools: one is a public sector institution under the Ministry of Health and Social Welfare and accredited by Muhimbili University of Health and Allied Sciences, and the other is affiliated with a faith-based organization located in Kilimanjaro which offers diploma training.[citation needed]The practice of pharmacy technician is regulated by Pharmacy Council Tanzania, which enrolls and enlists them. In 2010, the country had 0.11 registered pharmacy technicians per 10,000 population.[13] The main job duties of Tanzanian pharmacy technicians include dispensing, stock management, compounding, quantification of pharmaceutical formulations, and laboratory work. In some areas of the country facing acute shortage of physicians and other clinicians, pharmacy technicians have also been found prescribing medicine.[13] In the UK, the title Pharmacy Technician is a protected title. A prospective technician has two pathways that must be completed. One must complete both a General Pharmaceutical Council-recognised course and a SVQ competence qualification or an accredited combined qualification and course.[14] A period of time of working as a trainee or student pharmacy technician is needed before final qualification and compulsory registration with GPhC (formerly the Royal Pharmaceutical Society of Great Britain) is required before commencing work as a pharmacy technician. The period of on-the-job training is usually done concurrently whilst completing the course and typically over a two-year period. Pharmacy technicians may counsel patients on their medication (under the supervision or direction of a pharmacist, though counselling is not one of the learning outcomes for pharmacy technician training)[15] as well as general dispensing of prescriptions. In community pharmacy, it has been recognised that the role is difficult to distinguish from that of a dispensing assistant with an NVQ2 qualification. Additional training is available to qualified pharmacy technicians and can include accuracy checking of dispensed prescriptions (though there is no legal requirement for this) and for pharmacy technicians working in hospital settings is \$14.57(28) American pharmacy technicians work under the supervision of a pharmacist, while technicians work in the pharmaceutical field and pharmacy technicians subordinate to pharmacists.[20][21] A report was published by the Pharmacists' Defiance Association in 2019 making proposals for the development of pharmacist and pharmacy technician roles and career frameworks symbiotically in community pharmacy. It also outlined various impediments and governance issues and called for these to be addressed.[21] The Association of Pharmacy Technicians United Kingdom is a professional organisation for pharmacy technicians in the UK. There is no national regulatory agency governing pharmacy technicians and the duty falls to the individual state boards of pharmacies in the US. A high school diploma (or its equivalent) is typically required in all states but certification and licensing requirements vary by state. Some states require training from board-approved schools, national certification, on-the-job training or no requirements at all. A technician can become nationally certified by taking an NCAA-accredited examination administered by either the Pharmacy Technician Certification Board (PTCB) or the National Healthcareer Association (NHA).[22][23][24] Beginning in January 2020, the PTCB enacted a requirement that prior to examination, an applicant for certification must complete an American Society of Health-System Pharmacists-accredited pharmacy technician education program, a PTCB-recognized training program, or 500 hours of training[25] however, the NHA had similar requirements prior to the PTCB enacting the 2020 requirements. Upon completion of the certification exam, a pharmacy technician either the certified or CPhT credential. Continuing education after national certification is required for certification renewal every two years. According to the Bureau of Labor Statistics, in 2011 about 75% of pharmacy technicians in the US work in a retail setting.[2] Such as an independently owned drugstore, a major retailer chain, or a mail-order or online pharmacy. An additional 16% of pharmaceutical jobs were in hospitals,[2] while others worked for nursing homes, pharmaceutical wholesalers, or the federal government. As of 2016, the nationwide average hourly pay for pharmacy technicians working in retail or independent pharmacies is \$12.26(26)[27] and for pharmacy technicians working in hospital setting is \$14.57(28) American pharmacy technicians work under the supervision of a pharmacist, while technicians work in the pharmaceutical field and pharmacy technicians subordinate to pharmacists.[20][21] A report was published by the Pharmacists' Defiance Association in 2019 making proposals for the development of pharmacist and pharmacy technician roles and career frameworks symbiotically in community pharmacy. 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