

CHAPTER #18
PHARMACOLOGY

Q1. Define Pharmacology.**Ans: Pharmacology:**

Pharmacology is the study of drug composition properties and medical applications. The sources of drugs are also studied in pharmacology. Clinical pharmacology was present in the Middle Ages. Early pharmacologists focused on natural substances, mainly plant extracts. Pharmacology developed in the 19th century as a biomedical science.

Q2. What do you mean by drug?**Ans: Drug:**

Any substance that, when absorbed into the body of a living organism, alters normal body function is known as a drug. Drugs are broadly classified into two types:

- i. Pharmaceutical drug or medicinal drug
- ii. Addictive drugs

Q3. Differentiate between medicinal drug and addictive drug.

Ans: See Q #2 from Exercise (Short Questions)

Q4. Define pharmacology and distinguish it from pharmacy.

Ans: See Q # 1 from Exercise (Short Questions).

Interesting Information

Pharmacology is not synonymous with Pharmacy which is the name used for a profession. Though in common usage the two terms are confused.



A page from the book of *Materia Medica*

Until 1890 the subject of pharmacology was known as *Materia Medica*

Interesting Information

Prescription drugs are sold only on physician's prescription barbiturates, tranquilizers, antibiotics etc.

Non-prescription drugs are sold over the counter because they are considered safe enough. These include aspirin and some cough medicines.

Q5. What are the sources of drugs? Give examples.

Ans: See Q# 1 from Exercise (Understanding the Concept)

Interesting Information

Many addictive illegal drugs e.g. marijuana are also obtained from plants.

Interesting Information

Researchers of pharmaceutical company spent two years testing soil from all parts of the world to find new antibiotics. The project resulted in the development of one antibiotic, Terramycin, which is used to treat many infections.

Q6. Differentiate between analgesic and antibiotic.

Ans: See Q# 3 from Exercise (Short Questions)

Interesting Information

Antiseptics reduce the possibility of infections on skin

Antibiotics inhibitor kill bacteria within or on the body

Disinfectants destroy microorganisms found on non-microorganisms

Interesting Information

Penicillin notatum:

Sir Alexander Fleming (1881-1955) was a Scottish biologist. He discovered the antibiotic penicillin from the fungus for which he was awarded the Nobel Prize in 1945

Interesting Information

Sterilization of Surgical Instruments:

Joseph Lister (1827-1912) was an English surgeon. He promoted the idea of sterile surgery for the first time. He introduced carbolic acid to sterilize surgical instruments and to clean wounds.

Things to Remember

Things to remember:

Medicines can help you to feel better but if medicines are taken not correctively, they can actually make you to feel worse it is important to

- Always check the instruction on doctor's prescription s... to take the doses of medicines strictly as your doctor prescribed
- Always check the expiry date printed on the medicines packmay prove poisonous
- Never take medicines prescribed for someone else, evenhave the same medical problem.
- Some medicines - such as antibiotics - must be taken for a specific number of days. Make sure you take the medicines for the stated time. Otherwise the problem may come back again.
- Always check with your doctor before you stop taking a medicines or consider a new treatment.
- Some medicines are not suitable for children and there are special children's dosages for many medicines.
- Do not take medicines in the dark
- If your prescription medicines are crucial for your health and life, carry medicines and dosage instructions with your, whenever you are out of home.
- Always keep health care products out of the reach of children
- Do not use medicines if there are signs of tampering Inform the pharmacist and the manufacturer of the medicines, about it

Q.7 Write a note on sedatives, narcotics and hallucinogen.

OR

Briefly explain the major categories of addictive drugs.

Ans: See Q #2 from Exercise (Understanding the Concept)

Q8. Differentiate between narcotics and hallucinogens.

Ans: See Q# 5 from Exercise (Short Questions)

Interesting Information

in many western countries heroin is prescribed as a strong analgesic under the name diamorphine Its uses includes treatment for acute pain such as in severe physical trauma myocardial infarction, post-surgical pain etc.

Interesting Information

Hallucinations are perception that have no basis in reality but that appear entirely realistic

Q9. What is marijuana? To which category of addictive drugs, it belongs?

Ans: See Q # 4 from Exercise (Short Questions)

Interesting Information

Marijuana is one of the most commonly used drugs in the world, following only caffeine, nicotine and alcoholic beverages in popularity

Q10. Write a note on drug addiction and associated problems.

Ans: Drug addiction and associated problems:

Drug abusers go through withdrawal of social contact or communication Many studies Dy the experts of social Sciences prove that there exists a close relationship between drug addiction and crime. The compulsion for narcotic drug makes every drug addict a law violator and a criminal Mere possession of

a narcotic drug is a violation of the law. Thus, every drug addict is subject to arrest by the police

Most narcotic addicts get involved in various types of crime e.g. robbery shoplifting, burglary, embezzlement etc. Drug addicts may commit violent crimes since so many become psychic patients. The addicts are very weak in their social behaviour They face social stigma i.e. the society dislikes them because of their unpredictable behaviour.

Q11. Describe the main groups of antibiotics.

Ans: See Q #3 from Exercise (Understanding the Concept)

Q12. Write a note on resistance against antibiotics.

Ans: See Q # 4 from Exercise (Understanding the Concept).

Q13. Differentiate between Broad-Spectrum and Narrow Spectrum antibiotics.

Ans: Some antibiotics can be used to treat a wide range of infections and are known as 'broad-spectrum antibiotics' Others only effective against a few types of bacteria and are called 'narrow-spectrum' antibiotics.

Q14. What is the effect of expired drugs on human body?

Ans: Effect of expired drugs on human body:

Expired drugs can cause damage to Kidneys

Q15. What do you know about sulfonamide group?

Ans: Sulfonamide group:

The sulfonamide group is also present in other medications that are not antibiotics e.g. thiazide diuretics (medicines for lowering blood pressure)

Interesting Information

Bacteria are exposed to the same antibiotics over and over, they can change and are no longer affected by the drug

Q16. Write a note on Vaccines.

Ans: Vaccines:

A vaccine is a material containing weakened or killed pathogens and is used to produce immunity to a disease by stimulating the production of antibodies.

In 1796, a British physician Edward Jenner, infected a young boy with cowpox, by injecting pus cells. After the boy had recovered from cowpox Jenner injected the pus cells from a smallpox patient into him The boy did not get smallpox So it became clear that intentional infection with cowpox protected people from smallpox This method was named "vaccination" and the substance used to vaccinate was called a "vaccine."

Q17. Describe the mode of action of vaccines.

Ans: See Q # 5 from Exercise (Understanding the Concept)

Interesting Information

The most common method of administering vaccines is by injection some vaccines are given by mouth or nasal spray

Children are required to be vaccination before attending the school. The vaccination of children has resulted in marked decrease of many once common disease include whooping cough, polio smallpox and others

Some vaccines do not provide lifetime immunity. For example, tetanus vaccines are only effective for a limited period of time. In such cases, booster shots are necessary to maintain continues protection.

