***Focus on Pharmacology: Essentials for Health Professionals, 3e* (Moini)**
Chapter 1 Introduction to Pharmacology

1) The study of drugs derived from herbal sources is known as:
A) pharmacotherapeutics
B) pharmacognosy
C) pharmacokinetics
D) pharmacodynamics
Answer: B
Explanation: B) Pharmacognosy is the study of drugs derived from herbal sources, and other natural sources. By studying the compositions of natural substances and how the body reacts to them, one gains better knowledge for developing purified versions.

2) Which of the following organizations is a part of the United States Department of Health and Human Services?
A) DEA
B) CDC
C) FDA
D) TJC
Answer: C
Explanation: C) The Food and Drug Administration (FDA) is part of the United States Department of Health and Human Services. The determination of the correct use of prescription and OTC agents is controlled by the branch of the FDA known as the Center for Drug Evaluation and Research (CDER).

3) Animal pharmacology and toxicology data are obtained during which of the following phases of drug approval?
A) Phase I
B) Phase II
C) Phase III
D) Phase IV
Answer: A
Explanation: A) Phase I of drug approval is when animal pharmacology and toxicology data are obtained. This phase is known as Preclinical Investigation. It involves extensive research on human and microbial cells in a laboratory. Cultured cells and animal studies are used to determine dosages, effectiveness, and adverse effects.

4) Which of the following drug approval phases consists of three trials?
A) Phase I
B) Phase II
C) Phase III
D) Phase IV
Answer: B
Explanation: B) Phase II of drug approval consists of three trials. It is also known as Clinical Investigation, and is the longest, occurring over 2 to 10 years, 5 years being the average. Clinical Phase 1 trials occur over several months. Clinical Phase 2 trials occur over several months to 2 years. Clinical Phase 3 trials occur over 1 to 4 years.

5) Which of the following is NOT an example of a drug withdrawn from the U.S. market as a result of postmarketing surveillance?
A) aprotinin
B) morphine sulfate
C) gatifloxacin
D) lumiracoxib
Answer: B
Explanation: B) Morphine sulfate is not an example of a drug withdrawn from the U.S. market as a result of postmarketing surveillance. Examples of drugs withdrawn from the U.S. market since 2005, as a result of postmarketing surveillance, include aprotinin, propoxyphene, gatifloxacin, lumiracoxib, ozogamicin, pergolide, and sibutramine.

6) Which of the following is the most famous examples of a drug that was withdrawn after postmarketing surveillance?
A) celecoxib
B) furosemide
C) atenolol
D) penbutolol
Answer: A
Explanation: A) Celecoxib is the most famous example of a drug that was withdrawn after postmarketing surveillance. It was withdrawn along with valdecoxib and rofecoxib. All three were linked to safety concerns of stroke and heart attack. Celecoxib remains on the market, but carries a black box warning.

7) Which of the following is NOT an example of a biologic drug?
A) vaccine
B) interferon
C) antibody
D) toothpaste
Answer: D
Explanation: D) Toothpaste is not an example of a biologic drug. A drug is any agent that produces biologic responses within the body. Drugs differ from other products such as cosmetics, foods, and household chemicals, such as toothpaste, shampoo, and others.

8) How many people are injured annually by medication errors in the United States?
A) 99,000
B) 450,000
C) 840,000
D) 1,300,000
Answer: D
Explanation: D) 1,300,000 people are injured annually by medication errors in the United States, according to the Centers for Disease Control and Prevention. Medication errors cause at least one death every day.

9) Which of the following four phases of drug approval includes review of the New Drug Application (NDA)?
A) Phase I
B) Phase II
C) Phase III
D) Phase IV
Answer: C
Explanation: C) Phase III of drug approval involves review of the New Drug Application (NDA). During this phase, the trade name is finalized. Based on the preclinical testing, clinical trials and further animal testing may continue. For a new drug, it usually takes about 24 months for the full NDA review.

10) Manufacturers start developing their trade names for a new drug during which of the following drug approval phases?
A) Clinical phase 1 trials
B) Clinical phase 2 trials
C) Clinical phase 3 trials
D) Phase IV
Answer: A
Explanation: A) In Clinical Phase 1 trials, manufacturers start developing their trade name for a new drug. Dosages and adverse effects are assessed on approximately 20-100 human volunteers initially, who have the disease or condition that the drug is being tested to treat. Doses are often subtherapeutic, but ascending (increasing) doses are used.

11) Complementary and alternative medicine (CAM) therapies are controlled by which of the following organizations?
A) CDC
B) EPA
C) NCCAM
D) CFSAN
Answer: C
Explanation: C) The National Center for Complementary and Alternative Medicine (NCCAM) is the organization that controls complementary and alternative medicine (CAM) therapies. This agency studies the usefulness and safety of these therapies in improving health care.

12) How long does preclinical investigation usually take?
A) Between one and six months
B) Between three and nine months
C) Between one and three years
D) Between three and nine years
Answer: C
Explanation: C) Preclinical investigation usually takes between one and three years. It is the first stage of new drug testing, and involves extensive research on human and microbial cells in a laboratory. The average time for preclinical investigation is 18 months. This phase is always inconclusive since results may be insufficient or excessive in comparison to how human subjects will actually react to a new product.

13) The percentage of drugs in clinical phase 2 trials that move on to the next phase of clinical testing is:
A) 25%
B) 33%
C) 46%
D) 78%
Answer: B
Explanation: B) About 33% of drugs in clinical phase 2 trials move on to the next phase of clinical testing. These trials use between several dozen and 300 volunteers that have the disease or condition that the drug is being tested to treat. The drug is assumed not to have a therapeutic effect until further testing occurs.

14) Which of the following drugs carries a black box warning?
A) celecoxib
B) valdecoxib
C) rofecoxib
D) rifampin
Answer: A
Explanation: A) Celecoxib carries a black box warning, but remains on the market. Its warning is about potentially fatal cardiovascular disease, serious gastrointestinal problems, and bleeding ulcerations.

15) Pharmacology deals with all the drugs used in society today, including prescription, legal, OTC, and _____ drugs.
A) generic
B) legend
C) illegal
D) experimental
Answer: C
Explanation: C) Illegal drugs, as well as prescription, legal, and OTC drugs, are dealt with by today's pharmacology. To administer a drug safely, one must know its usual dose, frequency, route of administration, indications, contraindications, significant adverse reactions, and major drug interactions.

16) Any substance intended to be used to improve a physiologic or pathologic condition is known as a:
A) drug
B) dose
C) solution
D) compound
Answer: A
Explanation: A) A drug is any substance intended to be used to improve a physiologic or pathologic condition. It produces biologic responses within the body. When a drug response is desired, it is referred to as therapeutic. When the response is undesired, it is referred to as adverse.

17) A "medicine" refers to a drug mixed with other ingredients that may improve its taste, physical form, or:
A) effectiveness
B) stability
C) odor
D) color
Answer: B
Explanation: B) A "medicine" is a drug mixed with other ingredients that may improve its stability, taste, or physical form. A medicine is also known as a "medication".

18) A sugar pill (which may be thought to be a drug by the patient) is also known as a(n):
A) diet pill
B) energy pill
C) placebo
D) antihyperglycemic agent
Answer: C
Explanation: C) A placebo is a sugar pill, which may be thought to be a drug by the patient.

19) Once a drug has been administered to a patient, it is called:
A) biological
B) therapeutic
C) an alternative drug
D) a medication
Answer: D
Explanation: D) A medication is a drug that has been administered to a patient. Both drugs and medications are thought of as components of normal physiological activities.

20) Herbal products and dietary supplements are controlled by:
A) The Center for Biologics Evaluation and Research
B) The Center for Food Safety and Applied Nutrition
C) The Center for Drug Evaluation and Research
D) The Center for Disease Control and Prevention
Answer: B
Explanation: B) The Center for Food Safety and Applied Nutrition (CFSAN) controls herbal products and dietary supplements. It is a branch of the FDA. Herbal products and dietary supplements are also regulated by the Dietary Supplement Health and Education Act of 1994. Herbal and dietary supplements can still be marketed without FDA approval.