

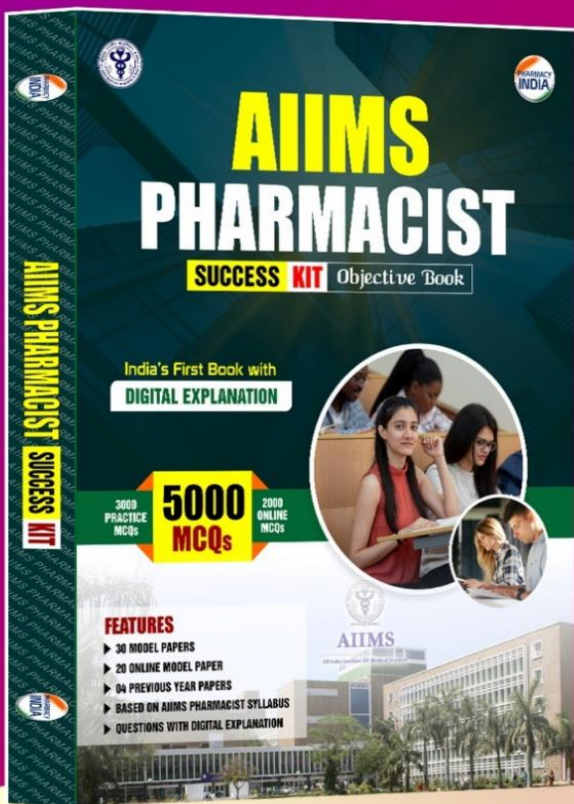


# AIIMS GRE

## AIIMS PATNA 2023 PYQ

### DIGITAL EXPLANATION

FOLLOW US



New Book

# AIIMS PHARMACIST

SUCCESS KIT Objective Book

FOR PHARMACIST STUDENTS

COD AVAILABLE

Flipkart



amazon



6395596959,  
8006781759

3000  
PRACTICE  
MCQs

5000  
MCQs

2000  
ONLINE  
MCQs

### FEATURES

- ▶ 30 MODEL PAPERS
- ▶ 20 ONLINE MODEL PAPER
- ▶ 04 PREVIOUS YEAR PAPERS
- ▶ 20 ONLINE MODEL PAPER
- ▶ QUESTIONS WITH DIGITAL EXPLANATION



# AIIMS Patna 2023 | Detailed Solutions

1. Which \_\_\_\_\_ bonding?

- **Answer:** (b) The formation of sodium chloride (NaCl) from one atom of sodium (Na) and atoms of chlorine (Cl) is an example
- **Explanation:** The formation of NaCl involves ionic bonding, not covalent bonding. Covalent bonds are formed by sharing electrons, while ionic bonds are formed by the transfer of electrons.
- **Reference:** "General Chemistry: Principles and Modern Applications" by Petrucci et al., 11th Edition, page 95.

2. Match \_\_\_\_\_ answer.

1. Alcohols → **B. Ethanol**
2. Colorants → **D. Ethacridine lactate**
3. Peroxides → **A. Peracetic acid**
4. Biguanides → **C. Chlorhexidine**

- **Answer:** (c) 1-B, 2-D, 3-A, 4-C
- **Explanation:** Ethanol is an alcohol, ethacridine lactate is a colorant with antiseptic properties, peracetic acid is a peroxide used as a disinfectant, and chlorhexidine is a biguanide with antimicrobial properties.
- **Reference:** "Pharmaceutical Microbiology" by Hugo and Russell, 8th Edition, page 215.

3. In \_\_\_\_\_ nature?

- **Answer:** (c) Cephalosporins
- **Explanation:** Cephalosporins are bactericidal antibiotics that disrupt bacterial cell wall synthesis. Other options like chloramphenicol and erythromycin are bacteriostatic.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 1325.

4. The \_\_\_\_\_ weight?

- **Answer:** (a) One fifth
- **Explanation:** The human skeleton constitutes approximately 20% (one-fifth) of a healthy body's weight, providing structural support and protection for organs.
- **Reference:** "Gray's Anatomy for Students," 4th Edition, page 520.

5. Which \_\_\_\_\_ survey?

- **Answer:** (b) All 1, 2, 3, and 4
- **Explanation:** Damage assessment surveys involve listening, understanding the situation, observing the damage, and taking appropriate action to address the issues.
- **Reference:** "Disaster Management Handbook" by Jack Pinkowski, page 180.

# AIIMS Patna 2023 | Detailed Solutions

6. Which \_\_\_\_\_ pharmacognosy?

- **Answer:** (a) Branch of pharmacy which plays a key role in new drug discovery and development by using natural products
- **Explanation:** Pharmacognosy is the study of medicinal drugs derived from natural sources, including plants, animals, and microorganisms, and their role in drug discovery and development.
- **Reference:** "Pharmacognosy" by Trease and Evans, 16th Edition, page 1.

7. Which \_\_\_\_\_ Bioethics?

- **Answer:** (c) The ethical principles or codes designed for a medical profession
- **Explanation:** Bioethics deals with the ethical issues arising from medical and biological practices, guiding professionals on right and wrong conduct in healthcare.
- **Reference:** "Principles of Biomedical Ethics" by Beauchamp and Childress, 8th Edition, page 3.

8. Which \_\_\_\_\_ India?

- **Answer:** (d) Only 2
- **Explanation:** One member elected by the State Pharmacy Council, who must be a registered pharmacist, is among the members of the Pharmacy Council of India. The other options are not accurate.
- **Reference:** "Drugs and Cosmetics Act, 1940," Government of India.

9. Which \_\_\_\_\_ management?

- **Answer:** (d) It is concerned with the formulation of broad objectives, plans, and policies
- **Explanation:** Management involves setting goals, developing plans, and formulating policies to guide organizational direction and operations.
- **Reference:** "Management: A Global Perspective" by Heinz Wehrich and Harold Koontz, 13th Edition, page 10.

10. Which \_\_\_\_\_ India?

- **Answer:** (c) 1 and 3 only
- **Explanation:** Scheduled banks are included in the second schedule of the RBI Act, 1934, and can borrow from the RBI against approved securities or discount bills. They must also meet certain regulatory requirements.
- **Reference:** "Banking and Financial Institutions in India" by H.R. Machiraju, 3rd Edition, page 47.

11. Which \_\_\_\_\_ diuretics?



## AIIMS Patna 2023 | Detailed Solutions

- **Answer:** (c) Only 1
- **Explanation:** Diuretics are drugs that increase the rate of urine flow; clinically useful diuretics also increase the rate of excretion of  $\text{Na}^+$  (natriuresis) and an accompanying anion, usually  $\text{Cl}^-$ . Most clinical applications of diuretics aim to reduce extracellular fluid volume by decreasing total-body  $\text{NaCl}$  content,
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 725.

12. What \_\_\_\_\_ enzymes?

- **Answer:** (b) 37 degrees Celsius
- **Explanation:** Most human enzymes function optimally at body temperature ( $37^\circ\text{C}$ ), facilitating biochemical reactions under normal physiological conditions.
- **Reference:** "Lehninger Principles of Biochemistry" by Nelson and Cox, 7th Edition, page 114.

13. Which \_\_\_\_\_ pus?

- **Answer:** (c) Suppurative inflammation
- **Explanation:** Suppurative inflammation is characterized by the accumulation of pus, primarily composed of neutrophils, necrotic tissue, and infectious agents.
- **Reference:** "Robbins and Cotran Pathologic Basis of Disease," 9th Edition, page 55.

14. Which \_\_\_\_\_ fungi?

- **Answer:** (d) Filariasis
- **Explanation:** Filariasis is caused by parasitic worms, primarily *Wuchereria bancrofti*, not fungi. The other options, such as ringworm and athlete's foot, are fungal infections.
- **Reference:** "Medical Microbiology" by Patrick R. Murray, 9th Edition, page 812.

15. Which \_\_\_\_\_ use?

- **Answer:** (c) Cachets
- **Explanation:** Cachets are a type of solid dosage form used for oral administration, not for external use. Bulk powders like douche powders and insufflations are intended for external application.
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 360.

16. Which \_\_\_\_\_ interactions?

- **Answer:** (a) Only 1
- **Explanation:**

# AIIMS Patna 2023 | Detailed Solutions

- Pharmaceutical drug-drug interactions involve physical or chemical incompatibilities (e.g., precipitation or inactivation in IV infusions).

**Drug incompatibility** is a physicochemical interaction that occurs when drugs are mixed with IV infusions, leading to:

- **Precipitation:** The formation of insoluble particles that can clog IV lines or cause harm if injected into the patient.
- **Inactivation:** The loss of drug activity due to chemical reactions.

## Examples:

- Mixing certain antibiotics with other medications can cause them to lose their effectiveness.
- Combining some drugs can lead to the formation of a precipitate, which can be dangerous if administered to the patient.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 66.

17. Which \_\_\_\_\_ humans?

- **Answer:** (a) Pyrogen testing
- **Explanation:** Pyrogen testing detects the presence of bacterial endotoxins, which can cause fever when injected into humans. The Limulus Amebocyte Lysate (LAL) test is commonly used for this purpose.
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 440.

18. Substances \_\_\_\_\_ called:

- **Answer:** (b) Emollients
- **Explanation:** Emollients are substances that hydrate and soften the skin by forming a protective barrier, reducing dryness, itching, and flaking.
- **Reference:** "Remington: The Science and Practice of Pharmacy," 22nd Edition, page 1255.

19. Which \_\_\_\_\_ council?

- **Answer:** (c) 1 and 3 only
- **Explanation:** Separate state pharmacy councils include members nominated by the state government and a member elected by the state medical council. Four members elected by registered pharmacists are part of the central council, not the provincial council.
- **Reference:** "Pharmacy Act, 1948," Government of India.

## AIIMS Patna 2023 | Detailed Solutions

20. A \_\_\_\_\_ is:

- **Answer:** (a) Refsum's disease
- **Explanation:** Refsum's disease is caused by a defect in the peroxisomal enzyme phytanoyl-CoA hydroxylase, leading to the accumulation of phytanic acid and neurological symptoms.
- **Reference:** "Harrison's Principles of Internal Medicine," 20th Edition, page 3375.

21. As \_\_\_\_\_ market?

- **Answer:** (d) Three
- **Explanation:**
  - The FDA requires that all serious and unexpected adverse events be reported as soon as possible.
  - The FDA also requires that unexpected fatal or life-threatening SADR be reported within 7 calendar days.
  - The FDA requires that periodic adverse drug experience reports be submitted quarterly for the first three years after the drug's approval date.
  - After the first three years, the FDA requires that periodic reports be submitted annually.
- **Reference:** "Pharmacovigilance: Principles and Practice" by Ronald D. Mann, 2nd Edition, page 52.

22. Which \_\_\_\_\_ experimentation?

- **Answer:** (c) Descriptive toxicology
- **Explanation:** Descriptive toxicology involves studying the effects of substances on animals to gather data on potential toxic effects, which are then extrapolated to humans.
- **Reference:** "Casarett & Doull's Toxicology: The Basic Science of Poisons," 9th Edition, page 35.

23. Which \_\_\_\_\_ Infections?

- **Answer:** (b) 1 and 3 only
- **Explanation:** Reproductive tract infections (RTIs) can affect any organ in the reproductive system and may lead to symptoms like chronic abdominal pain, backache, and dysmenorrhea. Incidences typically decrease with age, contradicting statement 2.
- **Reference:** "Comprehensive Gynecology" by Katz and Lentz, 6th Edition, page 456.

24. What \_\_\_\_\_ wounds?

- **Answer:** (d) Proliferation stage

# AIIMS Patna 2023 | Detailed Solutions

- **Explanation:** The proliferation stage is the third phase of wound healing, where new tissue forms, and collagen is deposited to close the wound. It follows the haemostasis and inflammatory phases.
- **Reference:** "Wound Care Essentials: Practice Principles" by Sharon Baranoski and Elizabeth A. Ayello, 4th Edition, page 87.

25. Which \_\_\_\_\_ Rickettsiae?

- **Answer:** (d) Kala azar
- **Explanation:** Kala azar (visceral leishmaniasis) is caused by *Leishmania* parasites, not Rickettsiae. Diseases like Q-fever, trench fever, and typhus are caused by Rickettsial species.
- **Reference:** "Medical Microbiology" by Patrick R. Murray, 9th Edition, page 659.

26. Which \_\_\_\_\_ system?

- **Answer:** (d) 2, 3, and 4 only
- **Explanation:** The liver, pancreas, and gallbladder are accessory organs of the digestive system that assist in digestion by producing enzymes, bile, and other substances. The small intestine is a primary organ, not an accessory organ.
- **Reference:** "Guyton and Hall Textbook of Medical Physiology," 13th Edition, page 805.

27. Which \_\_\_\_\_ form?

- **Answer:** (b) Rough texture
- **Explanation:** Semi-solid dosage forms, such as creams, ointments, and gels, should have a smooth texture for easy application and patient comfort. A rough texture is undesirable.
- **Reference:** "Remington: The Science and Practice of Pharmacy," 22nd Edition, page 1350.

28. Types \_\_\_\_\_ hormones:

- **Answer:** (d) Anabolic steroids
- **Explanation:** Anabolic steroids are synthetic derivatives of testosterone that interact with androgen receptors, promoting muscle growth and enhancing male secondary sexual characteristics.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 1245.

29. Which \_\_\_\_\_ administration?

- **Answer:** (c) Inhalation



## AIIMS Patna 2023 | Detailed Solutions

- **Explanation:** Inhalation is considered a systemic route of administration as it allows drugs to enter the bloodstream via the lungs. Local routes include insertion, instillation, and lotions.
- **Reference:** "Clinical Pharmacy and Therapeutics" by Roger Walker and Cate Whittlesea, 5th Edition, page 30.

30. What \_\_\_\_\_ pancreas?

- **Answer:** (b) Decreases blood glucose, alters protein and lipid metabolism
- **Explanation:** Insulin lowers blood glucose by facilitating glucose uptake into cells and promotes lipid and protein metabolism, essential for energy storage and utilization.
- **Reference:** "Guyton and Hall Textbook of Medical Physiology," 13th Edition, page 963.

31. Which \_\_\_\_\_ Dryer?

- **Answer:** (b) Loading and unloading can be done without losses
- **Explanation:** Drum dryers are used for rapid drying of materials, but loading and unloading can lead to material loss. This is not a key feature of drum dryers.
- **Reference:** "Pharmaceutical Engineering" by K. Sambamurthy, 1st Edition, page 284.

32. Thyroid \_\_\_\_\_ cartilage.

- **Answer:** (a) Larynx
- **Explanation:** The larynx, also known as the voice box, is located in the neck and plays a role in sound production, breathing, and protecting the trachea during swallowing.
- **Reference:** "Gray's Anatomy for Students," 4th Edition, page 967.

33. Which \_\_\_\_\_ Monosaccharides?

- **Answer:** (a) 1 and 2 only
- **Explanation:** Monosaccharides contain 3–6 carbon atoms with an aldehyde or ketone group and are highly soluble in water due to their polar hydroxyl groups. They are not soluble in nonpolar solvents.
- **Reference:** "Lehninger Principles of Biochemistry" by Nelson and Cox, 7th Edition, page 123.

34. In \_\_\_\_\_ economical?

- **Answer:** (d) All 1, 2, and 3
- **Explanation:** Personal selling is effective for products that require demonstrations, have poor brand loyalty, or are in the maturity stage and require demand creation through personal interaction.
- **Reference:** "Principles of Marketing" by Philip Kotler, 17th Edition, page 432.



# AIIMS Patna 2023 | Detailed Solutions

35. Which \_\_\_\_\_ Control?

- **Answer:** (a) Scheduling
- **Explanation:** Scheduling involves planning the sequence and timing of production tasks to ensure efficiency and optimal resource utilization, making it a key part of production planning and control.
- **Reference:** "Production and Operations Management" by K. Aswathappa and G. Sudarsana Reddy, 2nd Edition, page 122.

36. According \_\_\_\_\_ drugs?

- **Answer:** (d) If it is an imitation of, or is a substitute for another drug or resembles another drug in a manner likely to deceive or bears upon its label or container the name of another drug
- **Explanation:** Imitation or substitution of a drug is considered "spurious," not "misbranded," under the Drugs and Cosmetics Act, 1940. Misbranding pertains to labeling and presentation issues.
- **Reference:** "Drugs and Cosmetics Act, 1940," Government of India.

37. Which \_\_\_\_\_ hormone?

- **Answer:** (d) 1 and 2 only
- **Explanation:** Progesterone is involved in maintaining the uterine endometrium for implantation and stimulating mammary duct formation. The development of female characteristics is primarily influenced by estrogen.
- **Reference:** "Guyton and Hall Textbook of Medical Physiology," 13th Edition, page 1030.

38. Which \_\_\_\_\_ hydrocarbons?

- **Answer:** (b) High solubility in water
- **Explanation:** Hydrocarbons are nonpolar molecules with weak intermolecular forces, making them immiscible and insoluble in water, which is polar.
- **Reference:** "Organic Chemistry" by Paula Yurkanis Bruice, 8th Edition, page 242.

39. What \_\_\_\_\_ store?

- **Answer:** (b) 10 sq. Meter
- **Explanation:** According to the Drugs and Cosmetics Rules, 1945, a minimum area of 10 sq. meters is required to operate a retail drug store. For wholesale drug store, the minimum area is 15 sq. meters.
- **Reference:** "Drugs and Cosmetics Rules, 1945," Government of India.

40. When \_\_\_\_\_ called:

# AIIMS Patna 2023 | Detailed Solutions

- **Answer:** (a) Tachyphylaxis
- **Explanation:** Tachyphylaxis refers to the rapid decrease in the response to a drug after repeated administration in a short period, often due to receptor desensitization.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 66.

41. Which \_\_\_\_\_ constipation.

- **Answer:** (c) Loperamide
- **Explanation:** Loperamide is an antidiarrheal drug used to slow down bowel movements, not a laxative. Senna, lactulose, and docusate are laxatives.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 1086.

42. Which \_\_\_\_\_ coughing?

- **Answer:** (d) Expectorant
- **Explanation:** Expectorants, such as guaifenesin, stimulate bronchial secretions and reduce their viscosity, making it easier to expel them through coughing.
- **Reference:** "Katzung & Trevor's Pharmacology Examination and Board Review," 12th Edition, page 330.

43. Which \_\_\_\_\_ administration.

- **Answer:** (d) Dry powders
- **Explanation:** Small-volume parenterals include products like dry powders that require reconstitution or solutions like injections under 100 ml. Fructose and invert sugar are typically large-volume parenterals.
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 424.

44. Which \_\_\_\_\_ butanol?

- **Answer:** (d) C<sub>4</sub>H<sub>10</sub>O
- **Explanation:** β-butanol (2-butanol) has the molecular formula C<sub>4</sub>H<sub>10</sub>O. It is a secondary alcohol with the hydroxyl group attached to the second carbon of the butane chain.
- **Reference:** "Organic Chemistry" by Paula Yurkanis Bruice, 8th Edition, page 271.

45. Which \_\_\_\_\_ humans?

- **Answer:** (c) Heavy metals

## AIIMS Patna 2023 | Detailed Solutions

- **Explanation:** Heavy metals like lead, mercury, and arsenic are naturally occurring and cannot be created or destroyed. They persist in the environment and accumulate in organisms.
- **Reference:** "Casarett & Doull's Toxicology: The Basic Science of Poisons," 9th Edition, page 120

46. As \_\_\_\_\_ 'opium'?

- **Answer:** (c) Only 1
- **Explanation:**
- "opium" means,-

(1)the capsules of the poppy (*Papaver somniferum* L), whether in their original form or cut, crushed or powdered and whether or not juice has been extracted therefrom;

(2)the spontaneously coagulated juice of such capsules which has not been submitted to any manipulation other than those necessary for packing and transport; and

(3)any mixture, with or without neutral materials, of any of the above forms of opium, and includes any derivative of opium.

- **Reference:** "Medicinal and Toilet Preparations Act, 1955," Government of India.

47. Energy \_\_\_\_\_ function?

- **Answer:** (c) Physiological function
- **Explanation:** Physiological functions of food encompass providing energy, building tissues, and regulating bodily processes essential for survival.
- **Reference:** "Nutrition and Dietetics" by Shubhangini A. Joshi, 4th Edition, page 50.

48. According \_\_\_\_\_ Antimetabolites?

- **Answer:** (a) Aziridines
- **Explanation:** Aziridines are alkylating agents, not antimetabolites. Antimetabolites include pyrimidine, purine analogues, and folic acid analogues, which interfere with nucleotide synthesis.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 1334.

49. Which \_\_\_\_\_ store.

- **Answer:** (c) Floor stock system
- **Explanation:** In the floor stock system, medications are stored at the nursing station and distributed to patients as needed, while the pharmacy supplies the nursing station.

# AIIMS Patna 2023 | Detailed Solutions

- **Reference:** "Hospital Pharmacy" by William E. Hassan, 5th Edition, page 75.

50. Which \_\_\_\_\_ 1948?

- **Answer:** (b) 1 and 2 only
- **Explanation:** The Pharmacy Act, 1948, aims to regulate the practice of pharmacy in India and elevate the profession's status. Regulation of drug import, manufacture, and sale falls under the Drugs and Cosmetics Act, 1940.
- **Reference:** "Pharmacy Act, 1948," Government of India.

51. Which \_\_\_\_\_ preparations?

- **Answer:** (b) all 1, 2, and 3
- **Explanation:** Dispensed preparations include a variety of pharmaceutical formulations such as elixirs (oral liquids), nasal drops (solutions for nasal use), and granules (solid dosage forms).
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 344.

52. The \_\_\_\_\_ years?

- **Answer:** (a) 5 years
- **Explanation:** According to the Pharmacy Act, 1948, the term of office for elected and nominated members of the Pharmacy Council of India is five years.
- **Reference:** "Pharmacy Act, 1948," Government of India.

53. Which \_\_\_\_\_ processes?

- **Answer:** (c) Hallucinogens
- **Explanation:** Hallucinogens, such as LSD and psilocybin, significantly alter perception, emotions, and mental processes, often causing hallucinations.
- **Reference:** "Goodman & Gilman's: The Pharmacological Basis of Therapeutics," 12th Edition, page 586.

54. Which \_\_\_\_\_ dispensing?

- **Answer:** (c) Only 1
- **Explanation:** Dispensing medications must be in the best interest of the client and should not be done for individuals not under the prescriber's care, ensuring patient safety and compliance with legal standards.
- **Reference:** "Clinical Pharmacy and Therapeutics" by Roger Walker and Cate Whittlesea, 5th Edition, page 220.

55. Which \_\_\_\_\_ vitamin K?



## AIIMS Patna 2023 | Detailed Solutions

- **Answer:** (a) It is required for the synthesis of various proteins needed for the process of blood clotting
- **Explanation:** Vitamin K is essential for the synthesis of clotting factors such as prothrombin, aiding in the blood coagulation process. It also plays a role in calcium metabolism, but the primary function is related to blood clotting.
- **Reference:** "Harper's Illustrated Biochemistry," 31st Edition, page 285.

56. Which \_\_\_\_\_ administration?

- **Answer:** (d) Sublingual Administration
- **Explanation:** Sublingual administration involves placing a drug under the tongue, where it dissolves and is absorbed directly into the bloodstream. It is considered part of the oral route. Intramuscular, intramedullary, and subcutaneous are parenteral routes.
- **Reference:** "Clinical Pharmacy and Therapeutics" by Roger Walker and Cate Whittlesea, 5th Edition, page 25.

57. The \_\_\_\_\_ compensation:

- **Answer:** (d) Deterministic
- **Explanation:** Deterministic metrology involves process-based measurements, enabling real-time corrections and ensuring precision in manufacturing, often using advanced techniques like 3D error compensation.
- **Reference:** "Principles of Engineering Metrology" by Rega Rajendra, 1st Edition, page 178.

58. Which \_\_\_\_\_ enzymes?

- **Answer:** (d) Only 2
- **Explanation:** Conjugated enzymes consist of a protein part and a non-protein part (not entirely amino acids). The complete biologically active enzyme is called a holoenzyme.
- **Reference:** "Lehninger Principles of Biochemistry" by Nelson and Cox, 7th Edition, page 100.

59. Match \_\_\_\_\_ answer.

- **Answer:** (a) 1-D, 2-A, 3-B, 4-C
- **Explanation:**
  - **Pineal gland:** Controls timing of reproduction and sets day-night rhythms.
  - **Thyroid gland:** Controls tissue metabolic rate and regulates calcium levels.
  - **Thymus:** Controls the maturation of lymphocytes.
  - **Adrenal glands:** Adjust water balance, tissue metabolism, cardiovascular, and respiratory activity.
- **Reference:** "Guyton and Hall Textbook of Medical Physiology," 13th Edition, page 850.

# AIIMS Patna 2023 | Detailed Solutions

60. Which \_\_\_\_\_ ectoparasites?

- **Answer:** (b) Only 2
- **Explanation:** Ectoparasites live on the exterior (not interior) of animals and humans. Common examples include lice and scabies mites.
- **Reference:** "Medical Microbiology" by Patrick R. Murray, 9th Edition, page 720.

61. Which \_\_\_\_\_ job?

- **Answer:** (c) Aptitude tests
- **Explanation:** Aptitude tests evaluate a candidate's ability to learn new skills and adapt to job requirements, making them ideal for measuring potential for specific roles.
- **Reference:** "Human Resource Management" by Gary Dessler, 15th Edition, page 238.

62. As \_\_\_\_\_ etc.?

- **Answer:** (a) 2 to 8 degrees Celsius
- **Explanation:** Refrigeration at 2–8°C is required for temperature-sensitive drugs like vaccines, antibiotics, and sera to maintain their stability and efficacy.
- **Reference:** "Drugs and Cosmetics Rules, 1945," Schedule P.

63. Which \_\_\_\_\_ heat?

- **Answer:** (a) Sterilization cycle time is shorter
- **Explanation:** Sterilization by dry heat typically requires longer exposure times compared to moist heat sterilization. It effectively eliminates wet pack issues and leaves no chemical residues.
- **Reference:** "Pharmaceutical Microbiology" by Hugo and Russell, 8th Edition, page 247.

64. Which \_\_\_\_\_ field?

- **Answer:** (a) A workspace that is managed as a key part and utilized when key parts are large or numerous
- **Explanation:** A critical aseptic field involves a managed workspace to ensure sterility when large or numerous key parts are involved, requiring stringent aseptic techniques.
- **Reference:** "Aseptic Processing and Sterilization" by Tim Sandle, 1st Edition, page 150.

65. Which \_\_\_\_\_ Toxin?

- **Answer:** (b) Both 1 and 2
- **Explanation:** Toxins are naturally occurring toxic substances. For example, dioxin, a by-product of chlorinated chemical processes, is classified as a toxin due to its harmful effects.

# AIIMS Patna 2023 | Detailed Solutions

- **Reference:** "Casarett & Doull's Toxicology: The Basic Science of Poisons," 9th Edition, page 110.

66. Match \_\_\_\_\_ effects:

- **Answer:** (a) 1-B, 2-D, 3-C, 4-A
- **Explanation:**
  - **UV exposure** → **Melanoma:** UV rays are a major cause of skin cancer, particularly melanoma.
  - **Asbestos** → **Mesothelioma:** Asbestos exposure is linked to mesothelioma, a rare cancer affecting the lining of the lungs.
  - **Noise** → **Insomnia:** Prolonged exposure to noise can disrupt sleep patterns, leading to insomnia.
  - **Second-hand smoke** → **Ischemic heart diseases:** Second-hand smoke increases the risk of heart diseases.
- **Reference:** "Environmental Health: From Global to Local" by Howard Frumkin, 3rd Edition, page 540.

67. Which \_\_\_\_\_ organizations?

- **Answer:** (a) It involves the breeding of ideas
- **Explanation:** A demerit of internal recruitment is the lack of fresh ideas and perspectives, leading to stagnation. While it ensures stability and saves time, it limits innovation.
- **Reference:** "Human Resource Management" by Gary Dessler, 15th Edition, page 330.

68. Which \_\_\_\_\_ particles?

- **Answer:** (d) Glidants
- **Explanation:** Glidants, such as talc and colloidal silica, reduce interparticle friction, improving the flow of granules or powders during tablet manufacturing.
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 453.

69. which \_\_\_\_\_ constituents:

- **Answer:** (d) Maceration
- **Explanation:** Maceration is a simple extraction process where the drug is soaked in a solvent (menstruum) to dissolve its soluble constituents.
- **Reference:** "Trease and Evans' Pharmacognosy," 16th Edition, page 219.

70. Which \_\_\_\_\_ incorrect?

- **Answer:** (a) 3 and 4 only

# AIIMS Patna 2023 | Detailed Solutions

- **Explanation:**
  - Statement 3 is incorrect as the date for nationalizing 14 major banks was **July 19, 1969**, not 1978.
  - Statement 4 is incorrect as another **six** banks were nationalized on **April 15, 1980**, not seven.
- **Reference:** "Indian Economy" by Ramesh Singh, 12th Edition, page 201.

71. Which \_\_\_\_\_ group?

- **Answer:** (c) Only 2
- **Explanation:** Prosthetic groups are tightly or covalently bonded to the enzyme protein, and this binding is **permanent**, not temporary.
- **Reference:** "Lehninger Principles of Biochemistry" by Nelson and Cox, 7th Edition, page 180.

72. Which \_\_\_\_\_ distillation?

- **Answer:** (a) Both 1 and 2
- **Explanation:** Fractional distillation separates liquids with similar boiling points by repeated vaporization and condensation. It is also used to obtain essential oils and herbal distillates from aromatic herbs.
- **Reference:** "Organic Chemistry" by Paula Yurkanis Bruice, 8th Edition, page 75.

73. In \_\_\_\_\_ value?

- **Answer:** (b) Adjusted
- **Explanation:** Adjusted incompatibility occurs when an ingredient causing a chemical reaction is substituted or modified to prevent the reaction while maintaining therapeutic efficacy.
- **Reference:** "Remington: The Science and Practice of Pharmacy," 22nd Edition, page 2204.

74. Which \_\_\_\_\_ mixtures?

- **Answer:** (c) 1 and 2 Only
- **Explanation:** Positive mixtures, such as gases or miscible liquids, do not require energy for mixing if sufficient time is given. Emulsions, creams, and viscous suspensions are examples of **negative mixtures** that require energy for uniformity.
- **Reference:** "Pharmaceutical Engineering" by Subrahmanyam, 5th Edition, page 110.

75. Which \_\_\_\_\_ here?

- **Answer:** (b) Double Decomposition



## AIIMS Patna 2023 | Detailed Solutions

- **Explanation:** A double decomposition reaction occurs when two compounds exchange ions or elements to form two new compounds. For example, precipitation or neutralization reactions.
- **Reference:** "General Chemistry" by Raymond Chang, 12th Edition, page 345.

76. According \_\_\_\_\_ Act?

- **Answer:** (d) Only 1
- **Explanation:** Under the Drug and Magic Remedies Act, 1954:

S.No.	Offences	Penalties
1.	<b>First conviction:</b> Whoever contravenes any provision of this act or rules	<ul style="list-style-type: none"><li>• Imprisonment up to 6 month or with fine or both.</li></ul>
2.	<b>Second conviction:</b> Subsequent of the first conviction	<ul style="list-style-type: none"><li>• Imprisonment up to one year or fine or both any subsequent</li></ul>
3.	By company	<ul style="list-style-type: none"><li>• Every person who at the time of commission of the offences was in charge and responsible for the conduct of company business liable for the punishment.</li><li>• However such person is not liable for the punishment if he proves that offences was committed without his knowledge or that he has taken all the precaution to prevent the commission of such offence</li></ul>

- **Reference:** "The Drug and Magic Remedies (Objectionable Advertisements) Act, 1954," Section 7.

77. Which \_\_\_\_\_ System?

- **Answer:** (b) They produce depression of CNS in dose dependent manner
- **Explanation:**
- **Zopiclone**
  - This is the first of the non-BZD hypnotics, which acts as an agonist at a subtype of BZD receptor involved in the hypnotic action.
  - The effect on sleep resemble those of BZDs, but it does not alter REM sleep and tends to prolong stages 3 and 4.
  - It is reported not to disturb sleep architecture, but some degree of next morning impairment can occur.

## AIIMS Patna 2023 | Detailed Solutions

- Zopiclone has been used to wean off insomniacs taking regular BZD medication. Its  $t_{1/2}$  is 5–6 hours.
- Zopiclone is indicated for short term (< 2 weeks) treatment of insomnia. Side effects are
- metallic or bitter after-taste, impaired judgement and alertness, psychological disturbances, dry mouth and milder dependence. Safety in overdose is similar to BZDs.
- **Reference:** "Katzung & Trevor's Basic and Clinical Pharmacology," 14th Edition, page 380.

78. Which \_\_\_\_\_ body?

- **Answer:** (a) It initiates and transmits action potential that helps coordinate body activities
- **Explanation:** Initiating and transmitting action potentials is a function of **nervous tissue**, not connective tissue. Connective tissue provides structural support, immunity, and energy storage.
- **Reference:** "Guyton and Hall Textbook of Medical Physiology," 13th Edition, page 120.

79. Which \_\_\_\_\_ tableting?

- **Answer:** (a) Filtration
- **Explanation:** Filtration is not part of the tableting process. Stages of tableting include **dry blending, granulation, compression, and coating**.
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 544.

80. The \_\_\_\_\_ factors?

- **Answer:** (a) Both 1 and 2
- **Explanation:** The structure of a sales organization is influenced by:
  1. **Methods of distribution:** The strategy for distributing products affects sales team structure.
  2. **Personality of the sales manager:** Leadership style impacts team dynamics and organization.
- **Reference:** "Sales Management" by Charles Futrell, 13th Edition, page 215.

81. Match \_\_\_\_\_ functions:

- **Answer:** (b) 1-C, 2-A, 3-D, 4-B
- **Explanation:**
  - **Sclera (C):** Protects the eyeball against mechanical damage.
  - **Cornea (A):** Refracts light more than any other part of the eyeball.
  - **Iris (D):** Changes the size of the pupil, controlling the amount of light passing to the inside of the eyeball.

# AIIMS Patna 2023 | Detailed Solutions

- **Retina (B):** Contains sensory neurons and relay neurons that pass impulses along the optic nerve to the brain.
- **Reference:** "Essentials of Anatomy and Physiology" by Elaine N. Marieb, 12th Edition, page 298.

82. Which \_\_\_\_\_ environment?

- **Answer:** (a) Ecological Concept
- **Explanation:** The ecological concept emphasizes health as a balance between the individual and their environment. Diseases occur when this balance is disturbed.
- **Reference:** "Textbook of Preventive and Social Medicine" by K. Park, 26th Edition, page 15.

83. According \_\_\_\_\_ be:

- **Answer:** (a) One year and two thousand rupees
- **Explanation:**

## OFFENCES AND PENALTIES

Offences	Penalties
<b>1. By licenses</b>	
a. Failure to follow license condition/ pay duty	Fine 2,000/ 6M
b. Disorderly keeping of stocks/ account	Fine 2,000
c. Illegal sale of dutiable goods	Fine 1,000
d. Failure to furnish export proof	Fine 20,000
e. Obstruction to officer/ false information	Fine 5,000
f. Failure to provide/ maintain weighing	Fine 1,000
g. Failure to provide/ maintain facility for locking	Fine 200
<b>2. By excise officer</b>	
a. Failure to do duty	Imprisonment upto 3M
b. Vexatious searches/ seizures	Fine 2,000
c. Disclosure of information	Fine 1,000
<b>3. By Public</b>	
a. Melicious information	Imprisonment upto 2Yr/ Fine 2000
b. Connivance by owner/ occupiers of hand	Imprisonment upto 6M/ Fine upto 500

# AIIMS Patna 2023 | Detailed Solutions

- **Reference:** "Medicinal and Toilet Preparations Act, 1955," Section 11.

84. Which \_\_\_\_\_ formula?

- **Answer:** (b)  $BSA (m^2) = BW(Kg)0.425 \times \text{Height (cm)}0.725 \times 0.007184$
- **Explanation:** The most widely used formula for calculating BSA is the Du Bois formula, which uses body weight (BW) and height to estimate BSA.
- **Reference:** "Applied Clinical Pharmacokinetics and Pharmacodynamics" by Michael E. Burton, 2nd Edition, page 87.

85. Which \_\_\_\_\_ activity?

- **Answer:** (d) Azelastine Hydrochloride
- **Explanation:** Azelastine hydrochloride exhibits antihistaminic effects as well as antagonistic activity against leukotrienes and platelet aggregating factors, making it effective in allergic conditions.
- **Reference:** "Pharmacology" by Rang and Dale, 9th Edition, page 510.

86. Which \_\_\_\_\_ filtration?

- **Answer:** (c)  $dV/dT = AP/[u(aW/A+R)]$
- **Explanation:** The filtration equation incorporates variables like pressure drop (PPP), filtrate viscosity (uuu), specific cake resistance (aaa), and filter resistance (RRR) to calculate the rate of filtrate collection.
- **Reference:** "Pharmaceutical Engineering" by Subrahmanyam, 5th Edition, page 235.

87. Arrange \_\_\_\_\_ answer.

- **Answer:** (b) Solution > Suspension > Capsules > Compressed tablets
- **Explanation:** Bioavailability decreases in the following order: solutions (most bioavailable as they are already in a dissolved form), suspensions, capsules, and compressed tablets (require disintegration and dissolution).
- **Reference:** "Biopharmaceutics and Pharmacokinetics" by Brahmankar and Jaiswal, 2nd Edition, page 120.

88. Which \_\_\_\_\_ Phase?

- **Answer:** (a) Only 1 and 3
- **Explanation:**
  1. Incorrect: The pre-pathogenesis phase **does not begin** with the entry of the disease agent; it refers to the time before the agent enters the host.
  2. Correct: Clinical signs and symptoms are indeed absent during this phase.
- **Reference:** "Textbook of Preventive and Social Medicine" by K. Park, 26th Edition, page 29.



# AIIMS Patna 2023 | Detailed Solutions

89. Which \_\_\_\_\_ Bases?

- **Answer:** (b) 1 and 3 only
- **Explanation:**
  1. Correct: Acids are proton donors, and bases are proton acceptors.
  2. Incorrect: This concept is not limited to aqueous solutions.
  3. Correct: It classifies compounds like ammonia as bases since they can bond to protons.
- **Reference:** "General Chemistry" by Raymond Chang, 12th Edition, page 520.

90. Which \_\_\_\_\_ Laxatives?

- **Answer:** (c) Neither 1 nor 2
- **Explanation:**
  1. Correct: Bulking agents increase stool size, stimulating bowel movement.
  2. Correct: Osmotic laxatives draw water into the stool, softening it and making it easier to pass.
- **Reference:** "Essentials of Pharmacology" by K.D. Tripathi, 8th Edition, page 602.

91. Which \_\_\_\_\_ capillaries?

- **Answer:** (b) Carotids
- **Explanation:** Capillaries are classified as **fenestrated, continuous, and sinusoids**, based on their structure and permeability. Carotids are **arteries**, not capillaries.
- **Reference:** "Guyton and Hall Textbook of Medical Physiology," 13th Edition, page 164.

92. Which \_\_\_\_\_ muscle?

- **Answer:** (b) Myofibrils
- **Explanation:** Myofibrils are the cylindrical structures found within skeletal muscle fibers, responsible for contraction.
- **Reference:** "Human Anatomy & Physiology" by Elaine N. Marieb, 10th Edition, page 299.

93. Which \_\_\_\_\_ RNA?

- **Answer:** (b) Arcturus Therapeutics
- **Explanation:** Arcturus Therapeutics is known for its focus on RNA-based therapies, particularly for rare diseases and vaccines.
- **Reference:** Arcturus Therapeutics website and public filings.

94. Meninges \_\_\_\_\_ them?

- **Answer:** (c) Median sulcus

## AIIMS Patna 2023 | Detailed Solutions

- **Explanation:** The meninges include the **dura mater**, **arachnoid membrane**, and **pia mater**, which protect the CNS. The median sulcus is a groove on the spinal cord, not a meningeal layer.
- **Reference:** "Clinically Oriented Anatomy" by Keith L. Moore, 7th Edition, page 460.

95. anatomy \_\_\_\_\_ purpose.

- **Answer:** (a) Systemic
- **Explanation:** Systemic anatomy studies the body's organ systems, such as the respiratory or cardiovascular system, which work together to perform a specific function.
- **Reference:** "Gray's Anatomy for Students," 4th Edition, page 10.

96. Cephalosporins \_\_\_\_\_ hospitals.

- **Answer:** (a) Cefepime
- **Explanation:** Cefepime is a fourth-generation cephalosporin with broad-spectrum activity, particularly effective in treating hospital-acquired infections, sepsis, and resistant pathogens.
- **Reference:** "Katzung & Trevor's Basic and Clinical Pharmacology," 14th Edition, page 799.

97. Which \_\_\_\_\_ Mould?

- **Answer:** (c) All 1, 2, and 3
- **Explanation:**
  1. White moulds produce a white mycelium, often seen in specific cheeses.
  2. They grow within the cheese, contributing to its flavor and texture.
  3. **Penicillium candidum** and **Penicillium caseiocolum** are common examples used in cheese production.
- **Reference:** "Cheese and Fermented Milk Foods" by Frank V. Kosikowski, 3rd Edition, page 245.

98. Which \_\_\_\_\_ diseases?

- **Answer:** (d) 1, 2, and 3 Only
- **Explanation:**
  - **Non-communicable diseases** (NCDs) include chronic conditions like diabetes, cancer, and heart diseases.
  - Rheumatic fever is also considered under NCDs as it results from chronic conditions. However, **leprosy** is a communicable disease.
- **Reference:** "Textbook of Preventive and Social Medicine" by K. Park, 26th Edition, page 540.

99. According \_\_\_\_\_ members.

## AIIMS Patna 2023 | Detailed Solutions

- **Answer:** (a) 20
- **Explanation:** The **Narcotic Drugs and Psychotropic Substances Act, 1985** specifies that the consultative committee should not have more than 20 members to oversee and advise on drug-related policies.
- **Reference:** NDPS Act, 1985, Section 5.

100. Which \_\_\_\_\_ Forms?

- **Answer:** (c) 1 and 2 Only
- **Explanation:**
  1. Biphasic liquid dosage forms consist of two phases: an undissolved drug phase and a solvent system.
  2. These dosage forms are used when medicaments are poorly soluble in the solvent medium.
  3. **Elixirs and syrups** are not biphasic; they are monophasic solutions.
- **Reference:** "Pharmaceutics: The Science of Dosage Form Design" by Aulton and Taylor, 2nd Edition, page 312.

PHARMACY  
INDIA