

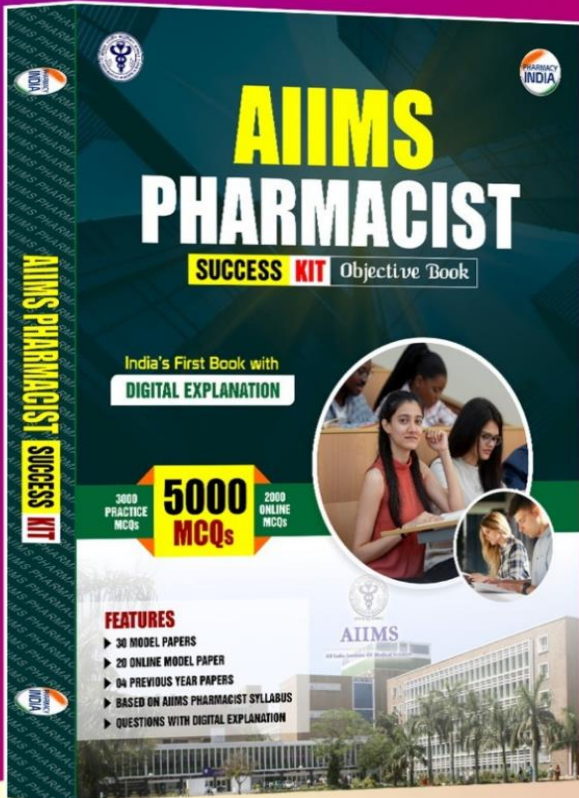


# AIIMS GRE

## MODEL PAPER-4

### DIGITAL EXPLANATION

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## Model Paper – 4 | Detailed Solutions

1. An example ----- agent is:

Correct Answer: (c) Atenolol

Explanation:

- **Atenolol** is a **beta-receptor blocking agent** (beta-blocker) used to manage hypertension, angina, and arrhythmias.
- It works by blocking the effects of epinephrine, lowering heart rate and blood pressure.

Reference: Pharmacology by Rang & Dale, 8th Edition, Page 235.

---

2. Aluminum ----- example of an:

Correct Answer: (b) Antacid

Explanation:

- **Aluminum hydroxide** is commonly used as an **antacid** to neutralize excess stomach acid, relieving heartburn and indigestion.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 635.

---

3. Which ----- cardiac glycoside:

Correct Answer: (d) Digoxin

Explanation:

- **Digoxin** is a cardiac glycoside used to treat heart failure and atrial fibrillation.
- It works by inhibiting **Na<sup>+</sup>/K<sup>+</sup>-ATPase**, increasing intracellular calcium and enhancing myocardial contractility.

Reference: Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 755.

---

4. Vasodilatory ----- coronary blood flow is:

Correct Answer: (a) Verapamil

Explanation:

## Model Paper – 4 | Detailed Solutions

- **Verapamil** is a **calcium channel blocker** that relaxes coronary and peripheral blood vessels, increasing blood flow and reducing heart workload.

**Reference:** Pharmacology by Rang & Dale, 8th Edition, Page 447.

---

5. Drug ----- **scabies:**

**Correct Answer:** (a) Benzyl benzoate

**Explanation:**

- **Benzyl benzoate** is a topical scabicial agent used to kill mites responsible for scabies.
- It should be applied to the entire body to ensure effective treatment.

**Reference:** Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 808.

---

6. Drug ----- **place in:**

**Correct Answer:** (a) Liver

**Explanation:**

- **Drug metabolism** primarily occurs in the liver, where enzymes like **cytochrome P450** convert drugs into more water-soluble forms for elimination.

**Reference:** Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 43.

---

7. The drug ----- **opium toxicity is:**

**Correct Answer:** (a) Naloxone

**Explanation:**

- **Naloxone** is an opioid antagonist that reverses the effects of opioid overdose, including respiratory depression.
- It is administered intravenously or intramuscularly for rapid action.

**Reference:** Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 534.

---

## Model Paper – 4 | Detailed Solutions

8. Methanol ----- acidosis with:

Correct Answer: (a)  $\text{NaHCO}_3$

Explanation:

- In **methanol poisoning**, **sodium bicarbonate ( $\text{NaHCO}_3$ )** corrects acidosis by neutralizing excess acid and maintaining blood pH.
- It is often combined with ethanol or fomepizole to inhibit methanol metabolism.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 897.

---

9. Caffeine ----- avoided in:

Correct Answer: (c) Peptic ulcer patients

Explanation:

- **Caffeine** stimulates gastric acid secretion, aggravating symptoms of **peptic ulcers**.
- It should be avoided to prevent worsening of ulcerative conditions.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 782.

---

10. One ----- cimetidine is:

Correct Answer: (c) Dizziness

Explanation:

- **Cimetidine**, a histamine H<sub>2</sub> receptor antagonist, may cause **dizziness**, headache, and confusion, especially in elderly patients.

Reference: Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 1120.

---

11. Fixed ----- is given to:

Correct Answer: (a) Equity shareholders

Explanation:

## Model Paper – 4 | Detailed Solutions

- **Equity shareholders** are entitled to **dividends**, which are paid after the company meets all its financial obligations.
- These dividends represent a share of the company's profits but are not fixed; they vary based on company performance.
- In contrast, fixed returns are typically associated with **debentures** or **preference shares**.

**Reference:** Principles of Corporate Finance by Brealey, 12th Edition, Page 465.

---

**12. Bank ----- deals in:**

**Correct Answer:** (d) All of the above

**Explanation:**

- A **bank** performs multiple functions, including:
  - Accepting **deposits** from customers.
  - Lending **loans** to individuals and businesses.
  - Facilitating financial transactions through **money management**.

**Reference:** Banking Theory and Practice by Shekhar, 21st Edition, Page 18.

---

**13. The primary ----- bank is not:**

**Correct Answer:** (c) To act as a trustee

**Explanation:**

- A bank's primary functions are:
  - Accepting **deposits**.
  - Providing **loans**.
  - Acting as a financial intermediary.
- Acting as a trustee is a secondary or fiduciary function, not a core banking activity.

**Reference:** Banking Principles and Operations by Maheshwari, 15th Edition, Page 28.

---

## Model Paper – 4 | Detailed Solutions

14. Trade ----- concern should be debited to:

**Correct Answer:** (d) Profit and Loss account

**Explanation:**

- **Trade discounts** are not recorded in accounts as they are deducted directly from the invoice.
- However, if recorded for accounting purposes, they are treated as a reduction in sales revenue and ultimately debited to the **Profit and Loss account**.

**Reference:** Financial Accounting by T.S. Grewal, 8th Edition, Page 134.

---

15. Left-hand ----- known as:

**Correct Answer:** (c) Debit side

**Explanation:**

- In accounting, the **left-hand side** of a ledger represents the **debit side**, recording all expenses, losses, and increases in assets.
- The **right-hand side** represents the **credit side**, recording incomes, gains, and liabilities.

**Reference:** Principles of Accounting by Horngren, 12th Edition, Page 35.

---

16. The breast ----- called the:

**Correct Answer:** (b) Sternum

**Explanation:**

- The **sternum**, or breastbone, is a flat bone located in the center of the chest.
- It connects to the ribs via costal cartilage, forming the rib cage and protecting vital organs like the heart and lungs.

**Reference:** Gray's Anatomy by Standring, 41st Edition, Page 235.

---

17. Elbow ----- is a:

**Correct Answer:** (b) Hinge joint

## Model Paper – 4 | Detailed Solutions

### Explanation:

- The **elbow joint** is a **hinge joint** formed by the humerus, radius, and ulna.
- It allows movements like flexion and extension, similar to a door hinge.

**Reference:** Clinical Anatomy by Richard Snell, 10th Edition, Page 76.

---

### 18. Total ----- vertebrae:

**Correct Answer: (d) 7**

### Explanation:

The human vertebral column consists of **7 cervical vertebrae** located in the neck region. These vertebrae provide support and mobility to the head and neck while protecting the spinal cord.

- **Cervical Vertebrae:** 7
- **Thoracic Vertebrae:** 12
- **Lumbar Vertebrae:** 5
- **Sacrum and Coccyx:** Fused bones.

### Reference:

Marieb, E. N. (2018). *Human Anatomy & Physiology*.

---

### 19. Patella ----- of the:

**Correct Answer: (d) Knee joint**

### Explanation:

- The **patella** is a sesamoid bone located in the **knee joint**.
- It protects the joint and improves leverage for the quadriceps muscle during extension of the leg.

**Reference:** Clinical Anatomy by Richard Snell, 10th Edition, Page 87.

---

## Model Paper – 4 | Detailed Solutions

20. Typhoid ----- known as:

Correct Answer: (a) Enteric fever

Explanation:

- **Typhoid fever**, caused by **Salmonella typhi**, is also referred to as **enteric fever** due to its impact on the intestinal tract.
- Symptoms include fever, abdominal pain, and diarrhea.

Reference: Medical Microbiology by Ananthanarayan and Paniker, 11th Edition, Page 257.

---

21. What ----- rabies?

Correct Answer: (a) Hydrophobia

Explanation:

- **Hydrophobia** (fear of water) is a classic symptom of **rabies** caused by the rabies virus.
- The virus affects the central nervous system, leading to spasms of the throat and pharyngeal muscles when the patient tries to drink water.
- Other symptoms include fever, confusion, paralysis, and hyperactivity, eventually leading to death if untreated.

Reference: Harrison's Principles of Internal Medicine, 20th Edition, Page 1361.

---

22. Poliomyelitis ----- infection:

Correct Answer: (d) Viral

Explanation:

- **Poliomyelitis** is caused by the **poliovirus**, a member of the enterovirus genus.
- The virus spreads through fecal-oral transmission and invades the nervous system, leading to paralysis in severe cases.
- Vaccines like OPV (Oral Polio Vaccine) and IPV (Inactivated Polio Vaccine) are used for prevention.

Reference: Medical Microbiology by Ananthanarayan and Paniker, 11th Edition, Page 434.

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23. National ----- in which year?

Correct Answer: (a) 1952

Explanation:

- The **National Family Planning Program** was introduced in **1952** in India as the first government-initiated program to control population growth.
- It focuses on providing contraceptive methods, maternal health care, and child health services to improve the overall quality of life.

Reference: Public Health and Preventive Medicine by Park, 26th Edition, Page 410.

---

24. Drug ----- syndrome is:

Correct Answer: (d) Omeprazole

Explanation:

- **Omeprazole**, a proton pump inhibitor (PPI), is used in **Zollinger-Ellison syndrome**, a condition characterized by excessive gastric acid secretion due to gastrin-secreting tumors.
- Omeprazole inhibits the  $H^+/K^+$ -ATPase pump in gastric parietal cells, reducing acid secretion.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 602.

---

25. Cinchonism ----- caused by:

Correct Answer: (a) Quinidine

Explanation:

- **Cinchonism** is a condition caused by **quinidine** or **quinine** overdose.
- Symptoms include tinnitus, dizziness, nausea, visual disturbances, and in severe cases, cardiac arrhythmias.
- It is most commonly seen in the treatment of malaria or arrhythmias.

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**Reference:** Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 1071.

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26. The main ----- heparin is:

**Correct Answer:** (c) Hemorrhage

**Explanation:**

- **Heparin**, an anticoagulant, inhibits clot formation by enhancing the activity of antithrombin III.
- The primary side effect is **hemorrhage** (bleeding), which may occur in the gastrointestinal tract, skin, or brain.

**Reference:** Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 542.

---

27. The content ----- water is:

**Correct Answer:** (c) 0.25%

**Explanation:**

- **Chloroform water** is a solution containing **0.25% chloroform**, used as a preservative or flavoring agent in pharmaceutical formulations.
- It has mild antimicrobial properties and is used in small quantities due to its potential toxicity.

**Reference:** Indian Pharmacopoeia, 8th Edition, Volume 2, Page 233.

---

28. 60 minims ----- to:

**Correct Answer:** (b) 4 ml

**Explanation:**

- According to the conversion:
  - **1 mL = 16.23 minims.**

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- Therefore, 60 minims =  $\frac{60}{16.23} \approx 3.7$  mL.
- Rounded off, it is considered as approximately **4 mL**, which is the correct equivalent in most practical cases.

**Reference:** Pharmaceutical Calculations by Howard Ansel, 15th Edition, Page 17.

---

**29. Preservative ----- injections present in:**

**Correct Answer: (a) Vials**

**Explanation:**

**Preservatives** are typically added to **vials** to prevent microbial growth after the vial is opened, as they are multi-dose containers.

- **Vials:** Require preservatives due to their nature as multi-dose containers.
- **Ampoules:** Are single-dose containers, so preservatives are usually not required.
- **Transfusion Bottles:** Typically contain solutions for single use and may not require preservatives unless indicated.

**Reference:**

Pharmacopoeia guidelines on injectable preparations.

---

**30. Container ----- injectable are made of:**

**Correct Answer: (c) Type-I and II glass**

**Explanation:**

- **Type-I glass** (borosilicate) is highly resistant to chemical reactions and thermal shock, making it suitable for parenteral products.
- **Type-II glass** (treated soda-lime glass) is used for products that do not require extended shelf-life or high chemical resistance.

**Reference:** Handbook of Pharmaceutical Excipients, 7th Edition, Page 112.

---

## Model Paper – 4 | Detailed Solutions

31. The concentration ----- preservative is:

Correct Answer: (b) 0.002%

Explanation:

- **Phenyl mercuric nitrate** is used as a preservative in pharmaceutical solutions due to its antimicrobial properties.
- A concentration of **0.002%** is considered effective and safe for preventing microbial contamination in eye drops and injections.
- It acts by disrupting microbial cell membranes and inactivating enzymes critical for microbial survival.

Reference: Handbook of Pharmaceutical Excipients, 7th Edition, Page 378.

---

32. Surgical ----- also called as:

Correct Answer: (a) Dakin's solution

Explanation:

- **Dakin's solution** is a dilute sodium hypochlorite solution used as an antiseptic for wound irrigation.
- It is prepared by diluting concentrated bleach and is effective in reducing bacterial load in wounds without causing significant tissue irritation.

Reference: Principles of Surgery by Schwartz, 11th Edition, Page 1345.

---

33. Phentolamine ----- derivative of:

Correct Answer: (b) Imidazoline

Explanation:

- **Phentolamine** is a non-selective alpha-adrenergic blocker derived from the **imidazoline group**.
- It is used to treat hypertensive emergencies, pheochromocytoma, and as an antidote for extravasation of vasopressors like norepinephrine.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 556.

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34. Antidopaminergic ----- as:

Correct Answer: (d) All of these

Explanation:

- **Chlorpromazine, metoclopramide, and domperidone** are all antidopaminergic drugs that block dopamine receptors.
- **Chlorpromazine** is used as an antipsychotic.
- **Metoclopramide and domperidone** are used as antiemetics and to enhance gastric motility.

Reference: Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 658.

---

35. Major ----- was made in:

Correct Answer: (b) 1982

Explanation:

- In **1982**, significant amendments were made to the **Drugs and Cosmetics Act** to ensure stricter control over drug manufacturing, sales, and distribution.
- It also aimed to enhance consumer safety by introducing regulations for licensing and quality control.

Reference: Drugs and Cosmetics Act, Government of India, 1982.

---

36. All finished ----- containing not less than:

Correct Answer: (c) 2.25 litres

Explanation:

- According to pharmacopoeial standards, **finished alcoholic preparations**, such as tinctures and spirits, should be stored in containers of at least **2.25 liters** to minimize evaporation and ensure product stability.

Reference: Indian Pharmacopoeia, 8th Edition, Volume 1, Page 202.

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37. Chloramphenicol ----- schedule-:

Correct Answer: (b) H

Explanation:

- **Chloramphenicol**, an antibiotic used to treat serious bacterial infections, is listed under **Schedule H** of the Drugs and Cosmetics Act.
- It requires a doctor's prescription due to potential side effects, including **bone marrow suppression**.

Reference: Drugs and Cosmetics Act, Government of India, 1940.

---

38. For manufacturing ----- issued in the form no-:

Correct Answer: (d) 28C

Explanation:

- **Form 28C** is issued for operating a **blood bank license** or manufacturing blood products in India.
- It ensures compliance with stringent quality and safety regulations for the collection, storage, and processing of blood and its components.

Reference: Drugs and Cosmetics Rules, Government of India, 1945.

---

39. The form ----- Schedule C and C1 drugs by retail is:

Correct Answer: (a) 20

Explanation:

- **Form 20** is required for selling Schedule C and C1 drugs, which include biologicals like vaccines, sera, and insulin.
- These drugs require strict regulatory control due to their sensitive nature and critical therapeutic use.

Reference: Drugs and Cosmetics Rules, Government of India, 1945.

## Model Paper – 4 | Detailed Solutions

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40. One pint ----- requires:

Correct Answer: (c) 87.5 grains

Explanation:

- One pint (473 mL) of 1% w/v solution contains 4.73 grams of solute.
  - Converting this to grains:  $4.73 \times 15.432 = 87.5$  grains
- This is a standard calculation used in preparing pharmaceutical solutions.

Reference: Pharmaceutical Calculations by Howard Ansel, 15th Edition, Page 92.

---

41. Example ----- substance:

Correct Answer: (c) Sodium hydroxide

Explanation:

- Sodium hydroxide is a hygroscopic substance, meaning it absorbs moisture from the air.
- It is used in chemical industries and laboratories to maintain dry conditions and is commonly used as a strong alkali in various reactions.

Reference: Essentials of Physical Chemistry by Bahl and Tuli, 25th Edition, Page 256.

---

42. Eye ----- should be:

Correct Answer: (b) Sterile

Explanation:

- Eye ointments must be sterile to prevent infection in the eye, as it is highly susceptible to microbial contamination.
- Sterility is maintained during manufacturing using aseptic techniques.

Reference: Remington: The Science and Practice of Pharmacy, 22nd Edition, Page 1347.

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## Model Paper – 4 | Detailed Solutions

43. Emulsions ----- usually:

Correct Answer: (c) o/w

Explanation:

- **Oil-in-water (o/w)** emulsions are commonly used for pharmaceutical and cosmetic purposes due to their ease of application and absorption.
- They are stable, non-greasy, and wash off easily with water.

Reference: Pharmaceutical Dosage Forms by Aulton, 5th Edition, Page 302.

---

44. Iodine ----- in the presence of:

Correct Answer: (c) Potassium iodide

Explanation:

- **Iodine** is sparingly soluble in water, but in the presence of **potassium iodide**, it forms soluble triiodide (I<sub>3</sub><sup>-</sup>) ions.
- This property is utilized in preparing **Lugol's solution**, used as an antiseptic and in iodine deficiency treatment.

Reference: Handbook of Pharmaceutical Excipients, 7th Edition, Page 514.

---

45. Diuretics ----- urine:

Correct Answer: (c) Increase the outflow of urine

Explanation:

- **Diuretics** are drugs that promote **increased urine production**, helping to eliminate excess water and salts from the body.
- They are used to manage hypertension, heart failure, and edema. Examples include **furosemide** and **spironolactone**.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 572.

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## Model Paper – 4 | Detailed Solutions

46. Example ----- drug is:

Correct Answer: (a) Adrenaline

Explanation:

- **Adrenaline** is a **sympathomimetic drug** that mimics the effects of the sympathetic nervous system, increasing heart rate, and bronchodilation.
- It is used in the treatment of anaphylaxis, cardiac arrest, and asthma attacks.

Reference: Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 729.

---

47. Stilboestrol ----- belongs to:

Correct Answer: (a) Synthetic estrogen

Explanation:

**Stilboestrol** (also known as diethylstilbestrol or DES) is a **synthetic estrogen**. It was used for hormone replacement therapy but is now largely discontinued due to its association with various side effects, including cancer risk.

Reference:

- Katzung, B. G. (2021). *Basic and Clinical Pharmacology* (15th ed.).
  - Goodman & Gilman's *The Pharmacological Basis of Therapeutics* (13th ed.).
- 

48. One ----- depressant is:

Correct Answer: (a) Lignocaine

Explanation:

**Lignocaine** (also known as **lidocaine**) is a **cardiac depressant** that is commonly used as a local anesthetic and an antiarrhythmic agent to manage abnormal heart rhythms. It works by stabilizing the heart's electrical activity.

Reference:

- Katzung, B. G. (2021). *Basic and Clinical Pharmacology* (15th ed.).
  - Goodman & Gilman's *The Pharmacological Basis of Therapeutics* (13th ed.).
-

## Model Paper – 4 | Detailed Solutions

49. The drug ----- is:

**Correct Answer:** (d) Arjuna bark

**Explanation:**

- **Arjuna bark (Terminalia arjuna)** is used as a **cardiotonic** to support heart health by improving cardiac muscle function and coronary circulation.
- It is a traditional herb widely used in Ayurveda for treating cardiovascular diseases.

**Reference:** Textbook of Pharmacognosy by C.K. Kokate, 7th Edition, Page 320.

---

50. Guanethidine ----- as an:

**Correct Answer:** (c) Antihypertensive

**Explanation:**

- **Guanethidine** is an adrenergic neuron blocker used as an **antihypertensive** to reduce blood pressure by depleting norepinephrine from nerve endings.
- It is primarily reserved for cases of severe hypertension.

**Reference:** Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 543.

---

51. The drug ----- **Antirheumatic** is:

**Correct Answer:** (d) All of these

**Explanation:**

- Drugs like **aspirin**, **indomethacin**, and **ibuprofen** are nonsteroidal anti-inflammatory drugs (NSAIDs) commonly used as **antirheumatic agents**.
- They work by inhibiting cyclooxygenase (COX) enzymes, reducing prostaglandin synthesis, which alleviates pain and inflammation in conditions like rheumatoid arthritis and osteoarthritis.

**Reference:** Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 193.

---

## Model Paper – 4 | Detailed Solutions

52. Both ----- body are:

Correct Answer: (c) Liver

Explanation:

- The **liver** is both an **exocrine gland**, as it secretes bile into the bile ducts, and an **endocrine gland**, as it releases substances like angiotensinogen and insulin-like growth factor (IGF) directly into the blood.
- It plays a vital role in digestion, metabolism, and detoxification.

Reference: Gray's Anatomy by Standring, 41st Edition, Page 1163.

---

53. An antibiotic ----- group is:

Correct Answer: (d) Chloramphenicol

Explanation:

- **Chloramphenicol** contains a **nitro group** (-NO<sub>2</sub>) and is a broad-spectrum antibiotic used to treat serious infections like typhoid fever and meningitis.
- Its mechanism of action involves inhibiting bacterial protein synthesis by binding to the 50S ribosomal subunit.

Reference: Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 1415.

---

54. Which ----- blockers are:

Correct Answer: (d) All the above

Explanation:

- Drugs like **verapamil**, **diltiazem**, and **nifedipine** are **calcium channel blockers** that inhibit calcium ion entry into vascular smooth muscle and cardiac cells.
- They are used to treat hypertension, angina, and arrhythmias by reducing vascular resistance and myocardial oxygen demand.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 495.

---

## Model Paper – 4 | Detailed Solutions

55. One ----- infections is:

Correct Answer: (b) Sulfacetamide sodium

Explanation:

- **Sulfacetamide sodium** is a sulfonamide antibiotic used in eye infections like conjunctivitis.
- It works by inhibiting folic acid synthesis in bacteria, preventing their growth and multiplication.

Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 747.

---

56. Propylthiouracil ----- of:

Correct Answer: (c) Antithyroid drug

Explanation:

- **Propylthiouracil (PTU)** is an **antithyroid drug** used to manage hyperthyroidism, including Graves' disease.
- It inhibits thyroid peroxidase, reducing the synthesis of thyroid hormones T3 and T4.

Reference: Harrison's Principles of Internal Medicine, 20th Edition, Page 2294.

---

57. Carbimazole ----- is:

Correct Answer: (d) Anti-thyroid drug

Explanation:

- **Carbimazole**, like propylthiouracil, is used to treat **hyperthyroidism** by preventing iodine from combining with tyrosine, thereby reducing thyroid hormone production.
- It is preferred in conditions where surgery or radioactive iodine therapy is not suitable.

Reference: Harrison's Principles of Internal Medicine, 20th Edition, Page 2295.

---

58. Spironolactone ----- is:

Correct Answer: (b) Steroidal diuretic

## Model Paper – 4 | Detailed Solutions

### Explanation:

- **Spironolactone** is a **potassium-sparing diuretic** that works as an **aldosterone antagonist**, blocking aldosterone receptors in the distal renal tubules.
- It is used to treat conditions like heart failure, hypertension, and edema associated with cirrhosis.

**Reference:** Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Page 574.

---

### 59. Which ----- inhibitors?:

**Correct Answer:** (a) Captopril

### Explanation:

- **Captopril** is an **angiotensin-converting enzyme (ACE) inhibitor** that prevents the conversion of angiotensin I to angiotensin II, a potent vasoconstrictor.
- It is used in the treatment of hypertension, heart failure, and diabetic nephropathy.

**Reference:** Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 802.

---

### 60. Catgut ----- sterilized:

**Correct Answer:** (d) All of the above

### Explanation:

- **Catgut sutures**, made from purified collagen, are sterilized using:
  - **Moist heat** to kill microbial contaminants.
  - **Dry heat** for prolonged sterilization.
  - **Ionizing radiation** for single-use sterilization.
- These methods ensure safety and sterility during surgical procedures.

**Reference:** Principles of Surgery by Schwartz, 11th Edition, Page 297.

---

## Model Paper – 4 | Detailed Solutions

61. Trial ----- prepared:

**Correct Answer:** (d) All the end of accounting period

**Explanation:**

- A **trial balance** is a statement of all ledger balances prepared at the **end of the accounting period** to check the arithmetic accuracy of recorded transactions.
- It ensures that the total debits equal the total credits, which is essential for preparing final financial statements.

**Reference:** Principles of Accounting by Horngren, 12th Edition, Page 74.

---

62. Cash ----- as a:

**Correct Answer:** (c) Principal book

**Explanation:**

- The **cash book** is referred to as a **principal book** as it serves as both a journal and a ledger for cash transactions.
- It records all cash receipts and payments, providing a detailed view of cash flow during an accounting period.

**Reference:** Financial Accounting by T.S. Grewal, 8th Edition, Page 82.

---

63. Machinery ----- recorded in:

**Correct Answer:** (c) Journal purchase

**Explanation:**

- When machinery is purchased on credit, the transaction is recorded in the **journal purchase book**, as it is treated as a purchase of fixed assets rather than inventory.

**Reference:** Financial Accounting by T.S. Grewal, 8th Edition, Page 95.

---

64. Comparative ----- require data for:

**Correct Answer:** (c) Three years

## Model Paper – 4 | Detailed Solutions

**Explanation:**

- **Comparative financial statements** often cover a period of at least **three years** to provide insights into trends and changes in a company's financial position and performance.
- It allows for effective year-on-year comparison.

**Reference:** Corporate Finance by Brealey, 12th Edition, Page 582.

---

**65. The maximum ----- business is:**

**Correct Answer:** (b) Twenty

**Explanation:**

- According to the **Indian Partnership Act, 1932**, the maximum number of partners allowed in a general business partnership is **20**.
- For banking businesses, the limit is reduced to **10** partners.

**Reference:** Indian Partnership Act, 1932, Section 11.

---

**66. The main ----- blood is:**

**Correct Answer:** (d) Bicarbonate

**Explanation:**

- The **bicarbonate buffer system** is the primary physiological buffer in the blood.
- It maintains pH by neutralizing acids and bases using bicarbonate ( $\text{HCO}_3^-$ ) and carbonic acid ( $\text{H}_2\text{CO}_3$ ).
- This system is vital for homeostasis and prevents acidosis or alkalosis.

**Reference:** Essentials of Medical Physiology by Sembulingam, 8th Edition, Page 159.

---

**67. In obstruction ----- bilirubin is:**

**Correct Answer:** (c) Absent

**Explanation:**

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- In **obstructive jaundice**, bilirubin is prevented from being excreted in bile due to blockages (e.g., gallstones or tumors).
- This results in a lack of **urinary bilirubin**, as conjugated bilirubin cannot reach the intestine and is excreted through urine.

**Reference:** Harrison's Principles of Internal Medicine, 20th Edition, Page 301.

---

**68. The pH ----- infants is:**

**Correct Answer:** (d) 5.1

**Explanation:**

- The **pH of gastric juice in infants** is typically around **5.1**, which is less acidic than in adults.
- This lower acidity helps prevent damage to the delicate lining of the infant's stomach.

**Reference:** Nelson Textbook of Pediatrics, 21st Edition, Page 1208.

---

**69. All ----- TCA cycle except:**

**Correct Answer:** (b) Pyruvate

**Explanation:**

**Pyruvate** is the end product of **glycolysis**, not an intermediate in the **TCA cycle**. Before entering the citric acid cycle, pyruvate is converted into **acetyl-CoA**. The TCA cycle involves intermediates like **Maleate**, **Oxaloacetate**, and **Fumarate**, which participate directly in the cycle.

- **Pyruvate** is a key metabolite in multiple pathways, including the conversion to acetyl-CoA for the TCA cycle, but it is not an intermediate within the cycle itself.

**Reference:**

- Nelson, D. L., Cox, M. M. (2017). *Lehninger Principles of Biochemistry* (7th ed.).
  - Berg, J. M., Tymoczko, J. L., Gatto, G. J. (2015). *Stryer's Biochemistry* (8th ed.).
-



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70. Which ----- Parkinsonism?

Correct Answer: (b) Phenothiazines

Explanation:

- **Phenothiazines**, like chlorpromazine, are dopamine receptor blockers that may cause **drug-induced Parkinsonism** by reducing dopamine activity in the basal ganglia.
- Symptoms include rigidity, tremors, and bradykinesia.

Reference: Goodman & Gilman's Pharmacological Basis of Therapeutics, 13th Edition, Page 758.

---

71. Pinocytosis ----- known as:

Correct Answer: (a) Vesicular transport

Explanation:

Pinocytosis is a type of **vesicular transport**, where the cell engulfs small particles, liquids, or dissolved solutes from the extracellular fluid. This process involves the formation of vesicles in the cell membrane that carry the engulfed material into the cell.

- **Vesicular transport** is a general term that includes both pinocytosis and phagocytosis, both of which involve the movement of substances into the cell via vesicles.

Reference:

- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., & Walter, P. (2015). *Molecular Biology of the Cell* (6th ed.).
  - Guyton, A. C., & Hall, J. E. (2020). *Textbook of Medical Physiology*.
- 

72. List ----- labelled accordingly is/are:

Correct Answer: (b) G

Explanation:

- Substances labeled with **G** require medical supervision and are used under prescription due to their potential risks or misuse.
- Examples include specific therapeutic drugs in pharmacological practice.

Reference: Drugs and Cosmetics Act, 1940, Section 97.

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73. Establishment(s) ----- compounding of drugs is/are:

Correct Answer: (c) Pharmacy

Explanation:

- **Pharmacies** are establishments where qualified personnel compound, dispense, and prepare drugs according to prescriptions.
- This ensures quality and safety in medication management.

Reference: Pharmacy Practice Regulations, 2015, Chapter III.

---

74. License ----- issued in Form:

Correct Answer: (a) 20-A

Explanation:

- Form **20-A** is issued for the wholesale of drugs specified under Schedule C and C<sub>1</sub>.
- These schedules cover biological and special categories of medicines requiring careful handling and storage.

Reference: Drugs and Cosmetics Rules, 1945, Rule 61.

---

75. The left ----- contains symbol:

Correct Answer: (d) XRx

Explanation:

- Bulk drug labels of **Schedule X** drugs display the **XRx** symbol to indicate restricted use due to the high risk of misuse or abuse.
- This category includes narcotics and psychotropic substances.

Reference: Drugs and Cosmetics Rules, 1945, Schedule X.

---

76. Which ----- same calendar as 2005?:

Correct Answer: (c) 2011

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### Explanation:

- The **calendar of 2011** matches that of 2005 because the pattern of days, including leap years, repeats every 6 or 11 years.
- This is due to the Gregorian calendar's cyclical nature.

**Reference:** Time and Date Almanac, 2023.

---

**77. A man ----- whole journey?:**

**Correct Answer:** (c) 48 km/hr

### Explanation:

- The average speed is calculated as  $\frac{2xy}{x+y}$ , where  $x = 40$  km/hr and  $y = 60$  km/hr.
- Substituting the values:  $\frac{2(40)(60)}{40+60} = \frac{4800}{100} = 48$  km/hr.

**Reference:** Fundamental Physics by Halliday and Resnick, 11th Edition, Page 92.

---

**78. Which ----- are co-primes?:**

**Correct Answer:** (a) 59, 97

### Explanation:

- **Co-primes** are numbers with no common factors other than 1.
- Here, **59 and 97** are co-primes as they are prime numbers with no shared factors.

**Reference:** Elementary Number Theory by David Burton, 8th Edition, Page 37.

---

**79. Supriya ----- related to Supriya?:**

**Correct Answer:** (b) Paternal grandmother

### Explanation:

- Akhil's father's mother is **Supriya's paternal grandmother** because Supriya and Akhil are siblings.

**Reference:** Logical Reasoning by R.S. Aggarwal, Revised Edition, Page 154.

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80. Find ----- the following series:

Correct Answer: (b) 19

Explanation:

- The series progresses by adding consecutive odd numbers:  $7 + 3 = 10$ ,  $10 + 4 = 14$ ,  $14 + 5 = 19$ .

Reference: Quantitative Aptitude by R.S. Aggarwal, 2021 Edition, Page 234.

---

81. Which ----- performed in Telangana state?

Correct Answer: (b) Perini thandavam

Explanation:

- **Perini Thandavam** is a traditional warrior dance performed in **Telangana**, known for its vigorous movements and drum beats.
- It was historically performed to motivate soldiers before battle and is now a celebrated cultural dance.

Reference: Indian Classical Dance by Sunil Kothari, 5th Edition, Page 178.

---

82. Who ----- 'Circular Economy' award at Davos?

Correct Answer: (c) Mani Vajipey

Explanation:

- **Mani Vajipey**, co-founder of Banyan Nation, received the **Circular Economy Award** at Davos for pioneering sustainable practices like recycling and reusing plastic waste in India.
- His work promotes environmental conservation and sustainable development.

Reference: World Economic Forum Reports, 2021.

---

83. Where ----- Desert located?

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**Correct Answer:** (a) Afghanistan

**Explanation:**

- The **Registan Desert** is located in **Afghanistan** and is characterized by vast sandy plains and harsh climatic conditions.
- It is a region of extreme temperatures and limited vegetation, playing a significant role in Afghanistan's geography.

**Reference:** Geography of Afghanistan by Thomas Barfield, 3rd Edition, Page 52.

---

**84. If ----- the loss percent is:**

**Correct Answer:** (a) 25%

**Explanation:**

- The loss percentage is calculated as:  
$$\text{Loss \%} = \frac{\text{Cost Price of 15 oranges} - \text{Selling Price of 15 oranges}}{\text{Cost Price of 15 oranges}} \times 100$$
$$= \frac{20 - 15}{20} \times 100 = 25\%$$

**Reference:** Quantitative Aptitude by R.S. Aggarwal, Revised Edition, Page 124.

---

**85. Qamar ----- sell it for?:**

**Correct Answer:** (d) ₹ 1,815

**Explanation:**

- If the resale price includes a 21% profit:  
Selling Price = Cost Price + (Cost Price × Profit %)  
= ₹1,500 + (₹1,500 × 0.21) = ₹1,815

**Reference:** Quantitative Aptitude by R.S. Aggarwal, Revised Edition, Page 153.

---

**86. In ----- will TEAR be written as?**

**Correct Answer:** (c) 194017

**Explanation:**

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- In the given code, each letter is represented by its positional value in the English alphabet.
  - $K = 11, I = 9, T = 20, E = 5$ , hence **KIT = 110920**.
  - Similarly,  $TEAR = 20, 5, 1, 18 \rightarrow$  **194017**.

**Reference:** Logical Reasoning by R.S. Aggarwal, Revised Edition, Page 89.

---

**87. What ----- the following series?:**

**Correct Answer:** (b) 6U

**Explanation:**

- The given series alternates between numbers and letters with an arithmetic progression for numbers (+2, +2): 22, 24, 26.
- Similarly, the letters progress alphabetically: B, D, F, hence the next is **6U**.

**Reference:** Logical Reasoning by R.S. Aggarwal, Revised Edition, Page 67.

---

**88. In ----- written in the same code?**

**Correct Answer:** (a) EGNARO

**Explanation:**

In the given code, the word "APPLE" is written as "ELPPA", which suggests the pattern is reversing the order of the letters in the word. So, to encode "ORANGE" in the same way, we reverse the letters:

- "ORANGE"  $\rightarrow$  "EGNARO"

Thus, the correct answer is **EGNARO**.

**Reference:**

General pattern recognition and code-breaking techniques.

---

**89. A ----- the minute hand?**

**Correct Answer:** (b)  $180^\circ$

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### Explanation:

- The angle between the hour and minute hand at **6:00** is  $180^\circ$ , as the hands are diametrically opposite.

**Reference:** Quantitative Aptitude by R.S. Aggarwal, Revised Edition, Page 64.

---

### 90. Who ----- Gupta Empire?

**Correct Answer:** (c) Chandragupta I

### Explanation:

- **Chandragupta I** is regarded as the founder of the Gupta Empire (320–550 CE).
- He laid the foundation of a powerful dynasty known for advancements in science, art, and literature.

**Reference:** A History of Ancient India by R.S. Sharma, 7th Edition, Page 248.

---

### 91. Which ----- cotton cultivation?

**Correct Answer:** (a) Maharashtra

### Explanation:

- **Maharashtra** is known for its **black soil**, also called **regur soil**, which retains moisture and is highly suitable for cotton cultivation.
- This region contributes significantly to India's cotton production.

**Reference:** Geography of India by Majid Husain, 8th Edition, Page 184.

---

### 92. Operation ----- assist which country?

**Correct Answer:** (c) Maldives

### Explanation:

- **Operation Cactus** was conducted by India in 1988 to prevent a coup in the **Maldives**.
- The Indian Armed Forces swiftly intervened to restore the legitimate government.

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**Reference:** India's External Relations by Rajiv Sikri, 2nd Edition, Page 192.

---

**93. Which ----- rule in India?**

**Correct Answer:** (a) Battle of Panipat (1526)

**Explanation:**

- The **Battle of Panipat (1526)** marked the beginning of Mughal rule in India.
- Babur defeated Ibrahim Lodi, establishing the Mughal dynasty, which ruled India for centuries.

**Reference:** A History of Medieval India by Satish Chandra, 9th Edition, Page 142.

---

**94. The ----- Five-Year Plan?**

**Correct Answer:** (b) Third

**Explanation:**

- The **Green Revolution** in India, which focused on increasing agricultural productivity through modern techniques, was introduced during the **Third Five-Year Plan (1961–1966)**.
- It significantly improved food grain production.

**Reference:** Indian Economy by Ramesh Singh, 13th Edition, Page 303.

---

**95. What ----- Indian history?**

**Correct Answer:** (c) Constitution Day

**Explanation:**

- **November 26** is celebrated as **Constitution Day** in India, as the Constitution was adopted by the Constituent Assembly on this date in 1949.
- It came into effect on January 26, 1950.

**Reference:** Indian Polity by M. Laxmikanth, 7th Edition, Page 52.

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96. Which ----- Poverty and Famines?

Correct Answer: (b) Amartya Sen

Explanation:

- **Amartya Sen**, an Indian economist and Nobel laureate, is known for his book "**Poverty and Famines**," where he analyzed the causes of famines and the role of entitlements in food security.

Reference: Poverty and Famines by Amartya Sen, 1981 Edition, Page 5.

---

97. Which ----- India by area?

Correct Answer: (a) Goa

Explanation:

- **Goa** is the smallest state in India by area, covering approximately 3,702 square kilometers.
- Despite its size, it is a significant tourist destination due to its beaches and cultural heritage.

Reference: India: A Comprehensive Geography by Khullar, 5th Edition, Page 273.

---

98. Which ----- 'Do or Die'?

Correct Answer: (b) Quit India Movement

Explanation:

- The slogan "**Do or Die**" was given by Mahatma Gandhi during the **Quit India Movement** in 1942 to inspire Indians to fight for independence from British rule.

Reference: India's Struggle for Independence by Bipan Chandra, 11th Edition, Page 442.

---

99. Who ----- Indian state?

Correct Answer: (a) Sarojini Naidu

Explanation:

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- **Sarojini Naidu** was the first woman Governor of an Indian state, serving as the Governor of Uttar Pradesh from 1947 to 1949.
- She was a poet, freedom fighter, and an advocate for women's rights.

**Reference:** Women in Indian History by Arunima Ray, 6th Edition, Page 182.

---

100. Which ----- rift valley?

**Correct Answer:** (a) Narmada

**Explanation:**

- The **Narmada River** flows through a rift valley, which is a linear-shaped lowland between several highlands.
- It is a significant geographical feature in central India.

**Reference:** Physical Geography by Savindra Singh, 5th Edition, Page 314.

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