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MODEL PAPER-30

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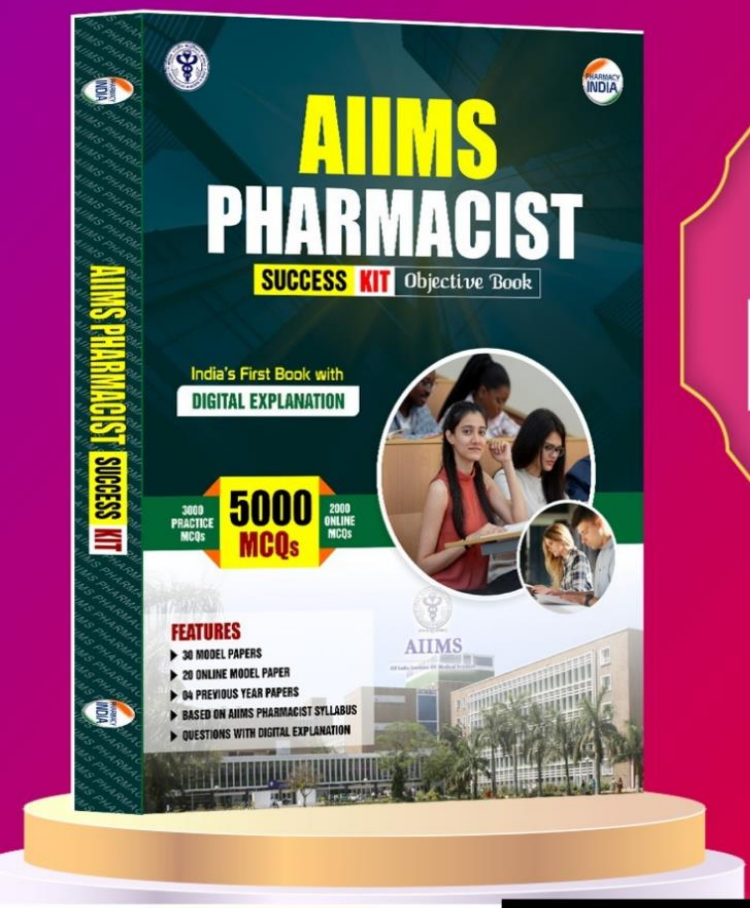

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Model Paper – 30 | Detailed Solutions

1. Chemical …… chloride

Correct Answer: (d) **Glucose**

- **Explanation:** Glucose in ORS facilitates the co-transport of sodium and water in the intestinal cells via the sodium-glucose co-transporter (SGLT1). This mechanism is critical during diarrheal diseases, where sodium and water loss is significant. By promoting sodium absorption, glucose effectively aids in the hydration process.
- **Reference:** Pharmacology and Pharmacotherapeutics by R.S. Satoskar, S.D. Bhandarkar, Nirmala N. Rege (Chapter on ORS).

2. Disinfectant …… Chloroxylenol

Correct Answer: (a) **Phenol and related compounds**

- **Explanation:** Chloroxylenol is a halogenated phenol derivative, widely used as an antiseptic and disinfectant. It works by disrupting microbial cell walls and inactivating essential enzymes, leading to cell death.
- **Reference:** Essentials of Medical Pharmacology by K.D. Tripathi (Chapter on Antiseptics and Disinfectants).

3. Drug …… outbreak

Correct Answer: (a) **Tetracycline**

- **Explanation:** Tetracycline is effective against *Vibrio cholerae*, the causative agent of cholera. It reduces bacterial shedding and severity of the disease, thereby limiting transmission. For outbreaks, chemoprophylaxis helps to control spread in high-risk populations.
- **Reference:** Goodman & Gilman's: The Pharmacological Basis of Therapeutics (Chapter on Antibacterial Agents).

4. Drug …… vomiting

Correct Answer: (b) **Aprepitant**

- **Explanation:** Aprepitant is a selective neurokinin-1 (NK1) receptor antagonist. By blocking the NK1 receptors in the brain, it prevents the action of substance P, which is implicated in the emetic response triggered by chemotherapy.
- **Reference:** Katzung's Basic & Clinical Pharmacology (Chapter on Antiemetic Drugs).

5. Role …… process

Correct Answer: (b) **Anion exchanger**

- **Explanation:** Amberlite IR 400 is a strong base anion exchange resin used in water de-ionization. It exchanges anions (e.g., chloride, sulfate) with hydroxide ions, contributing to the removal of ionic impurities and purification of water.
- **Reference:** Remington: The Science and Practice of Pharmacy (Chapter on Water and Solvent Systems).

6. Mechanism …….. Tetracycline

Correct Answer: (c) **Inhibits protein synthesis by binding to the 30S ribosomal subunit**

- **Explanation:** Tetracycline binds to the 30S ribosomal subunit of bacteria, preventing the attachment of aminoacyl-tRNA to the ribosome and inhibiting bacterial protein synthesis. It is bacteriostatic, meaning it halts bacterial growth without directly killing them.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 43, Page 809.**

7. Chemical …….. equipment

Correct Answer: (a) **Ethylene oxide**

- **Explanation:** Ethylene oxide is a gaseous sterilizing agent effective against a wide range of microorganisms, including spores. It is used for sterilizing heat-sensitive medical devices such as endoscopes, surgical instruments, and catheters.
- **Reference: Remington: The Science and Practice of Pharmacy, 22nd Edition, Chapter 87, Page 1645.**

8. Vaccine …….. pregnancy

Correct Answer: (b) **Measles**

- **Explanation:** Measles vaccine is a live attenuated vaccine and is contraindicated during pregnancy due to the theoretical risk of transmission to the fetus, which can cause congenital infections. Vaccines like tetanus toxoid and inactivated influenza are safe during pregnancy.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 62, Page 866.**

9. Common …….. aminoglycosides

Correct Answer: (b) **Nephrotoxicity**

- **Explanation:** Aminoglycosides, such as gentamicin and amikacin, can accumulate in the renal cortex, leading to nephrotoxicity. This is one of their dose-limiting toxicities and requires close monitoring of renal function during treatment.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 45, Page 1097.**

10. Example …….. antihistamine

Correct Answer: (b) **Loratadine**

- **Explanation:** Loratadine is a second-generation H1 receptor antagonist. Unlike first-generation antihistamines (e.g., diphenhydramine), it does not cross the blood-brain barrier significantly and therefore has minimal sedative effects.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 32, Page 574.**

11. Antidote …….. poisoning

Correct Answer: (c) **Atropine**

- **Explanation:** Atropine, a muscarinic receptor antagonist, is the primary antidote for organophosphorus poisoning. Organophosphates inhibit acetylcholinesterase, leading to an accumulation of acetylcholine. Atropine blocks the effects of excessive acetylcholine, particularly at muscarinic receptors. Pralidoxime is another adjunctive treatment to regenerate acetylcholinesterase.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 11, Page 176.**

12. Glycoprotein …….. syndrome

Correct Answer: (b) **Abciximab**

- **Explanation:** Abciximab is a monoclonal antibody that inhibits glycoprotein IIb/IIIa receptors on platelets, preventing fibrinogen binding and platelet aggregation. It is used as an antiplatelet agent in acute coronary syndrome and during percutaneous coronary interventions.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 30, Page 558.**

13. Type …….. vaccines

Correct Answer: (b) **Active immunity**

- **Explanation:** Vaccines stimulate the body's immune system to produce specific antibodies and memory cells against a pathogen, providing active immunity. This type of immunity is long-lasting, unlike passive immunity, which is temporary and involves transferring antibodies directly.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 62, Page 866.**

14. Henderson-…….. use

Correct Answer: (a) **pH of a buffer solution**

- **Explanation:** The Henderson-Hasselbalch equation is used to calculate the pH of a buffer solution by relating the pKa of the acid and the ratio of the concentration of the salt to the acid. The equation is pH = pKa + log10 $(^{-}\frac{[A]^{-}}{[HA]})$
- **Reference: Remington: The Science and Practice of Pharmacy, 22nd Edition, Chapter 21, Page 451.**

15. Pharmacological …….. (MRSA)

Correct Answer: (a) **Vancomycin**

- **Explanation:** Vancomycin is a glycopeptide antibiotic used for treating MRSA infections. It inhibits bacterial cell wall synthesis by binding to the D-alanyl-D-alanine terminus of cell wall precursors. It is reserved for resistant strains due to its potency and specific action.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 43, Page 1051.**

16. Preferred …….. insulin

Correct Answer: (c) **Subcutaneous**

- **Explanation:** Insulin is primarily administered subcutaneously to allow for slow and sustained absorption. Intravenous administration is used only in emergencies like diabetic ketoacidosis. Oral administration is not feasible because insulin is degraded in the gastrointestinal tract.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 42, Page 679.**

17. Drug …….. tuberculosis (MDR-TB)

Correct Answer: (c) **Bedaquiline**

- **Explanation:** Bedaquiline is a diarylquinoline that targets the mycobacterial ATP synthase, which is essential for energy production in *Mycobacterium tuberculosis*. It is reserved for MDR-TB as part of combination therapy.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 55, Page 1348.**

18. Order …….. concentration

Correct Answer: (b) **First-order**

- **Explanation:** In a first-order reaction, the rate depends linearly on the concentration of a single reactant. The rate law can be expressed as Rate=k[A]\text{Rate} = k[A]Rate=k[A], where kkk is the rate constant and [A][A][A] is the reactant concentration.

- **Reference: Remington: The Science and Practice of Pharmacy, 22nd Edition, Chapter 25, Page 585.**

19. Preservative …… drops

Correct Answer: (a) **Benzalkonium chloride**

- **Explanation:** Benzalkonium chloride is a commonly used preservative in eye drops due to its antimicrobial properties. It prevents microbial contamination during use but may cause irritation in some individuals.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 64, Page 888.**

20. Volume …… describes

Correct Answer: (b) **The apparent distribution of the drug in the body**

- **Explanation:** The volume of distribution (Vd) represents the hypothetical volume in which a drug would need to be distributed to achieve the observed plasma concentration. It reflects the extent of drug distribution in tissues relative to plasma.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 3, Page 28.**

21. Water…… vitamin

Correct Answer: (c) **Vitamin B12**

- **Explanation:** Vitamin B12 is a water-soluble vitamin, essential for DNA synthesis and red blood cell production. In contrast, vitamins A, D, and E are fat-soluble and stored in the liver.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 66, Page 916.**

22. Selective …… inhibitor (SSRI)

Correct Answer: (b) **Fluoxetine**

- **Explanation:** Fluoxetine is an SSRI that inhibits the reuptake of serotonin into presynaptic neurons, increasing serotonin levels in the synaptic cleft. SSRIs are used to treat depression, anxiety disorders, and other psychiatric conditions.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 19, Page 263.**

23. Mechanism …… inhibitors (PPIs)

Correct Answer: (b) **Inhibit H+/K+ ATPase in gastric parietal cells**

- **Explanation:** PPIs, such as omeprazole, irreversibly inhibit the H+/K+ ATPase enzyme in the gastric parietal cells, reducing gastric acid secretion. This mechanism is effective in treating acid-peptic diseases.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 62, Page 1108.**

24. Long-……insulin

Correct Answer: (c) **Insulin glargine**

- **Explanation:** Insulin glargine is a long-acting insulin analog with a consistent release over 24 hours. It provides basal insulin coverage, unlike rapid-acting insulins such as lispro and aspart or short-acting insulin like regular insulin.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 42, Page 681.**

25. Osmolarity …… solution (ORS)

Correct Answer: (b) **245 mOsm/L**

- **Explanation:** The World Health Organization (WHO) recommends an ORS with an osmolarity of 245 mOsm/L. This optimal osmolarity balances sodium and glucose concentrations to enhance water and electrolyte absorption without exacerbating diarrhea.
- **Reference: Pharmacology and Pharmacotherapeutics by R.S. Satoskar, 25th Edition, Chapter 16, Page 221.**

26. Prodrug ……

Correct Answer: (b) **Omeprazole**

- **Explanation:** Omeprazole is a prodrug activated in the acidic environment of parietal cells. It is converted into its active sulfenamide form, which irreversibly inhibits the H+/K+ ATPase (proton pump).
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 62, Page 1108.**

27. Shelf …… 2–8°C

Correct Answer: (d) **As per the vaccine-specific guidelines**

- **Explanation:** The shelf life of vaccines varies depending on the type and manufacturer. For example, the shelf life of live attenuated vaccines (like measles) and inactivated vaccines (like hepatitis B) is specified in their product inserts and guidelines. Proper storage is critical to maintain efficacy.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 62, Page 866.**

28. Most …… inhibitors

Correct Answer: (c) **Dry cough**

- **Explanation:** ACE inhibitors, such as enalapril, inhibit the breakdown of bradykinin, which can accumulate and cause a persistent dry cough. Other side effects include hyperkalemia and angioedema.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 24, Page 589.**

29. Chelating ……

Correct Answer: (a) **EDTA**

- **Explanation:** EDTA (ethylenediaminetetraacetic acid) is a chelating agent used to bind divalent and trivalent metal ions (e.g., calcium, lead). It is used in lead poisoning treatment and as an anticoagulant in blood collection tubes.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 68, Page 940.**

30. Pharmacokinetic …… absorption

Correct Answer: (c) **Area under the plasma concentration-time curve (AUC)**

- **Explanation:** The AUC represents the total drug exposure over time and is directly proportional to the extent of drug absorption. Higher AUC indicates better systemic availability.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 3, Page 26.**

31. Enzyme …… metabolite

Correct Answer: (c) **CYP2C19**

- **Explanation:** Clopidogrel is a prodrug that requires bioactivation primarily by the CYP2C19 enzyme. The active metabolite inhibits platelet aggregation by blocking the P2Y12 receptor on platelets. Polymorphisms in CYP2C19 can affect drug efficacy.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 34, Page 586.**

32. Diagnostic …… gravis

Correct Answer: (a) **Edrophonium**

- **Explanation:** Edrophonium is a short-acting acetylcholinesterase inhibitor used in the Tensilon test. It temporarily improves muscle strength in patients with myasthenia gravis, confirming the diagnosis.

- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 9, Page 138.**

33. Mechanism …….. B

Correct Answer: (b) **Binding to ergosterol and disrupting fungal membrane integrity**

- **Explanation:** Amphotericin B binds to ergosterol, a component of fungal cell membranes, forming pores that increase membrane permeability and cause cell death. It is a polyene antifungal.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 57, Page 1415.**

34. Drug …….. warfarin

Correct Answer: (b) **Vitamin K**

- **Explanation:** Warfarin inhibits vitamin K-dependent clotting factors. Administering vitamin K (phytonadione) reverses the anticoagulant effect by promoting the synthesis of these factors. Fresh frozen plasma can also be used in emergencies.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 44, Page 710.**

35. Monoclonal …….. therapy

Correct Answer: (b) **Bevacizumab**

- **Explanation:** Bevacizumab is a monoclonal antibody targeting vascular endothelial growth factor (VEGF), inhibiting angiogenesis in tumors. It is used to treat cancers such as colorectal and lung cancer.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 68, Page 1564.**

36. What …….. inhibitor?

Correct Answer: (c) **Inactivate beta-lactamase enzymes**

- **Explanation:** Beta-lactamase inhibitors, such as clavulanic acid, sulbactam, and tazobactam, protect beta-lactam antibiotics from enzymatic degradation by beta-lactamase-producing bacteria. These inhibitors do not have significant antibacterial activity alone but enhance the efficacy of beta-lactam antibiotics.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 49, Page 787.**

37. Which …….. syndrome?

Correct Answer: (a) **Vitamin B1**

- **Explanation:** Wernicke-Korsakoff syndrome is caused by a deficiency of vitamin B1 (thiamine). It primarily affects the central nervous system, leading to symptoms like confusion, ataxia, and ophthalmoplegia (Wernicke's encephalopathy), followed by memory impairment (Korsakoff syndrome).
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 67, Page 1523.**

38. Which …… hyperprolactinemia?

Correct Answer: (c) **Both (a) and (b)**

- **Explanation:** Both bromocriptine and cabergoline are dopamine agonists that inhibit prolactin secretion from the anterior pituitary. Cabergoline is preferred due to its longer half-life and fewer side effects compared to bromocriptine.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 38, Page 721.**

39. Which …… mechanism?

Correct Answer: (b) **Ciprofloxacin**

- **Explanation:** Ciprofloxacin, a fluoroquinolone, exhibits concentration-dependent killing, where higher drug concentrations result in more effective bacterial killing. This is in contrast to time-dependent antibiotics like beta-lactams.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 53, Page 1297.**

40. Which …… subtype?

Correct Answer: (d) **Sigma (σ)**

- **Explanation:** Sigma (σ) receptors are not true opioid receptors. They were initially thought to be opioid-related but are now recognized as separate receptors involved in modulating psychotropic effects. The primary opioid receptor subtypes are Mu (μ), Kappa (κ), and Delta (δ).
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 34, Page 561.**

41. Which …… pregnancy?

Correct Answer: (b) **Heparin**

- **Explanation:** Heparin, particularly low molecular weight heparins (e.g., enoxaparin), is the anticoagulant of choice during pregnancy because it does not cross the placenta and is safe

for the fetus. Warfarin is contraindicated due to teratogenic effects, and newer anticoagulants like rivaroxaban and dabigatran lack sufficient safety data in pregnancy.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 44, Page 713.**

42. What …… management?

Correct Answer: (b) **Inhibits sodium-glucose co-transporter-2 (SGLT2)**

- **Explanation:** Dapagliflozin inhibits SGLT2 in the proximal tubule of the nephron, reducing glucose reabsorption and increasing glucose excretion in urine. This lowers blood glucose levels and provides additional benefits like weight loss and reduced blood pressure.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 41, Page 674.**

43. Which …… deficiency?

Correct Answer: (b) **Primaquine**

- **Explanation:** Primaquine can cause hemolysis in patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency due to oxidative stress. This deficiency impairs the ability of red blood cells to handle oxidative damage, leading to hemolytic anemia.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 55, Page 1351.**

44. Which …… tubule?

Correct Answer: (c) **Hydrochlorothiazide**

- **Explanation:** Hydrochlorothiazide is a thiazide diuretic that inhibits the sodium-chloride symporter in the distal convoluted tubule, reducing sodium and water reabsorption. Other diuretics, like furosemide, act on the loop of Henle, while spironolactone acts on the collecting ducts.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 41, Page 654.**

45. Which …… acromegaly?

Correct Answer: (a) **Octreotide**

- **Explanation:** Octreotide is a somatostatin analog that inhibits growth hormone (GH) secretion, effectively managing acromegaly caused by GH hypersecretion. Cabergoline may also be used but is less effective than octreotide.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 38, Page 724.**

46. What …….. Clopidogrel?

Correct Answer: (b) **Inhibition of ADP-induced platelet aggregation**

- **Explanation:** Clopidogrel is an antiplatelet agent that irreversibly inhibits the P2Y12 receptor on platelets. This action blocks ADP-induced platelet aggregation, reducing the risk of thrombotic events in conditions like acute coronary syndrome and after stent placement.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 30, Page 558.**

47. Which …….. antibody?

Correct Answer: (b) **Infliximab**

- **Explanation:** Infliximab is a monoclonal antibody that binds to tumor necrosis factor-alpha (TNF-alpha), preventing its pro-inflammatory effects. It is used in autoimmune diseases such as rheumatoid arthritis, Crohn's disease, and ulcerative colitis.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 56, Page 814.**

48. Which …….. cascade?

Correct Answer: (b) **Factor Xa**

- **Explanation:** Factor Xa is a key enzyme in the coagulation cascade that converts prothrombin into thrombin in the presence of Factor Va, calcium, and phospholipids. Thrombin subsequently converts fibrinogen into fibrin, leading to clot formation.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 34, Page 611.**

49. Which …….. tests?

Correct Answer: (a) **Inulin**

- **Explanation:** Inulin is used as a diagnostic agent to measure glomerular filtration rate (GFR) because it is freely filtered by the glomeruli and not reabsorbed, secreted, or metabolized by the kidneys. This makes it an ideal marker for GFR.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 64, Page 905.**

50. What …….. Sulfonamides?

Correct Answer: (b) **Inhibits folic acid synthesis by competing with PABA**

- **Explanation:** Sulfonamides are structural analogs of para-aminobenzoic acid (PABA). They inhibit dihydropteroate synthase, a key enzyme in bacterial folic acid synthesis, which is essential for DNA and RNA synthesis.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 53, Page 1283.**

51. Which …… inhibitor?

Correct Answer: (c) **Celecoxib**

- **Explanation:** Celecoxib selectively inhibits the COX-2 enzyme, which is involved in the synthesis of inflammatory prostaglandins. This selectivity minimizes gastrointestinal side effects associated with non-selective COX inhibitors like aspirin and ibuprofen.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 27, Page 427.**

52. Which …… disease?

Correct Answer: (a) **Donepezil**

- **Explanation:** Donepezil is a reversible acetylcholinesterase inhibitor that increases acetylcholine levels in the brain, improving cognitive function in Alzheimer's disease. Galantamine is another drug in this class, but Donepezil is the most commonly used.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 19, Page 276.**

53. What …… B?

Correct Answer: (b) **Nephrotoxicity**

- **Explanation:** Amphotericin B binds to ergosterol in fungal membranes but also affects human cell membranes, particularly in the kidneys. Nephrotoxicity is the most significant adverse effect and requires monitoring of renal function during treatment.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 58, Page 839.**

54. Which …… rate?

Correct Answer: (a) **Beta-1 adrenergic receptor**

- **Explanation:** Adrenaline activates beta-1 adrenergic receptors in the heart, leading to increased heart rate (positive chronotropy) and increased force of contraction (positive inotropy). This effect is critical during the fight-or-flight response.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 9, Page 126.**

55. Which ……dependence?

Correct Answer: (d) **Both (a) and (c)**

- **Explanation:** Methadone and buprenorphine are both used in opioid dependence management. Methadone is a full opioid agonist, while buprenorphine is a partial agonist. Both help in reducing withdrawal symptoms and preventing relapse.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 24, Page 624.**

56. Which ……(NAPQI)?

Correct Answer: (a) **CYP2E1**

- **Explanation:** Paracetamol is metabolized to its toxic metabolite N-acetyl-p-benzoquinone imine (NAPQI) primarily by the enzyme CYP2E1. NAPQI can cause hepatotoxicity if not detoxified by glutathione. This pathway is particularly important in cases of overdose.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 13, Page 258.**

57. Which …… disease?

Correct Answer: (b) **Ropinirole**

- **Explanation:** Ropinirole is a dopamine agonist that directly stimulates dopamine receptors, mimicking dopamine's effects in the brain. It is used to manage motor symptoms in Parkinson's disease, either as monotherapy or adjunct to levodopa.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 31, Page 487.**

58. Which …… diuretic?

Correct Answer: (b) **Spironolactone**

- **Explanation:** Spironolactone is a potassium-sparing diuretic that works as an aldosterone antagonist in the distal tubules and collecting ducts of the nephron. It reduces sodium reabsorption and potassium excretion.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 41, Page 654.**

59. Which …… tuberculosis?

Correct Answer: (b) **Isoniazid**

- **Explanation:** Isoniazid is the first-line treatment for latent tuberculosis due to its effectiveness against *Mycobacterium tuberculosis*. It is typically administered daily for 6–9 months.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 55, Page 1347.**

60. Which …… gout?

Correct Answer: (b) **Allopurinol**

- **Explanation:** Allopurinol inhibits xanthine oxidase, the enzyme responsible for converting hypoxanthine and xanthine into uric acid. By reducing uric acid production, it prevents gout attacks. Febuxostat, another xanthine oxidase inhibitor, is an alternative.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 57, Page 834.**

61. Which …… fibrillation?

Correct Answer: (a) **Dabigatran**

- **Explanation:** Dabigatran is an oral direct thrombin inhibitor that prevents clot formation by specifically inhibiting thrombin (Factor IIa). It is used for stroke prevention in non-valvular atrial fibrillation as an alternative to warfarin.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 44, Page 718.**

62. Which …… …… treatment?

Correct Answer: (a) **Salbutamol**

- **Explanation:** Salbutamol is a selective beta-2 adrenergic agonist that relaxes bronchial smooth muscle, leading to bronchodilation. It is used as a short-acting reliever in asthma and chronic obstructive pulmonary disease (COPD).
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 20, Page 350.**

63. What …… overdose?

Correct Answer: (b) **Flumazenil**

- **Explanation:** Flumazenil is a competitive antagonist at the GABA-A receptor benzodiazepine binding site. It reverses the sedative and respiratory-depressant effects of benzodiazepines. It is used cautiously due to the risk of precipitating withdrawal symptoms or seizures.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 35, Page 574.**

64. Which …… effects?

Correct Answer: (b) **Valproic acid**

- **Explanation:** Valproic acid is contraindicated during pregnancy as it is associated with teratogenic effects, including neural tube defects like spina bifida. Its use requires strict risk-benefit assessment in pregnant women.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 24, Page 385.**

65. What …… (ESAs)?

Correct Answer: (b) **Stimulate red blood cell production**

- **Explanation:** Erythropoietin-stimulating agents, such as epoetin alfa, stimulate the bone marrow to increase the production of red blood cells by mimicking endogenous erythropoietin. They are used to treat anemia, particularly in chronic kidney disease and chemotherapy-induced anemia.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 33, Page 608.**

66. Which …… arthritis?

Correct Answer: (a) **Adalimumab**

- **Explanation:** Adalimumab is a fully human monoclonal antibody that binds to tumor necrosis factor-alpha (TNF-alpha), inhibiting its pro-inflammatory effects. It is used in the treatment of rheumatoid arthritis and other autoimmune diseases.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 56, Page 814.**

67. Which ……-blocker?

Correct Answer: (b) **Phentolamine**

- **Explanation:** Phentolamine is a reversible non-selective alpha-adrenergic blocker that inhibits both alpha-1 and alpha-2 receptors. It is used in the management of pheochromocytoma and to reverse soft tissue anesthesia. Phenoxybenzamine, in contrast, is an irreversible blocker.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 10, Page 145.**

68. Which …… hyperthermia?

Correct Answer: (a) **Dantrolene**

- **Explanation:** Dantrolene is a skeletal muscle relaxant that inhibits calcium release from the sarcoplasmic reticulum by antagonizing the ryanodine receptor. It is the drug of choice for malignant hyperthermia, a rare but life-threatening reaction to certain anesthetics.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 23, Page 363.**

69. Which …… gyrase)?

Correct Answer: (a) **Ciprofloxacin**

- **Explanation:** Ciprofloxacin is a fluoroquinolone antibiotic that inhibits bacterial DNA gyrase (topoisomerase II) and topoisomerase IV. This action prevents DNA replication and transcription, leading to bacterial death.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 53, Page 1289.**

70. Which …… management?

Correct Answer: (a) **Morphine**

- **Explanation:** Morphine is a potent mu-opioid receptor agonist that provides effective pain relief by modulating pain perception in the central nervous system. It is commonly used for moderate to severe pain, especially in cancer and postoperative pain management.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 34, Page 563.**

71. Which …… receptors?

Correct Answer: (b) **Aprepitant**

- **Explanation:** Aprepitant is a neurokinin-1 (NK1) receptor antagonist that blocks the action of substance P, which is involved in inducing nausea and vomiting. It is commonly used in combination with other antiemetics like ondansetron and dexamethasone for chemotherapy-induced nausea and vomiting.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 63, Page 1121.**

72. Which …… syndrome?

Correct Answer: (b) **Abciximab**

- **Explanation:** Abciximab is a monoclonal antibody that blocks glycoprotein IIb/IIIa receptors on platelets, preventing fibrinogen binding and platelet aggregation. It is used as an adjunct in percutaneous coronary intervention (PCI) and acute coronary syndrome.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 44, Page 712.**

73. Which ……nephrotoxicity?

Correct Answer: (b) **Amifostine**

- **Explanation:** Amifostine is a cytoprotective agent that reduces cisplatin-induced nephrotoxicity by scavenging free radicals and detoxifying reactive metabolites. It is administered before cisplatin therapy to protect renal tissues.
- **Reference: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th Edition, Chapter 69, Page 1593.**

74. Which …… receptors?

Correct Answer: (a) **Baclofen**

- **Explanation:** Baclofen is a GABA-B receptor agonist that reduces spasticity by inhibiting excitatory neurotransmitter release in the spinal cord. It is used in conditions like multiple sclerosis and spinal cord injuries.
- **Reference: Essentials of Medical Pharmacology by K.D. Tripathi, 8th Edition, Chapter 31, Page 490.**

75. Which …… inhibitor?

Correct Answer: (b) **Phenelzine**

- **Explanation:** Phenelzine is an irreversible non-selective monoamine oxidase (MAO) inhibitor that inhibits both MAO-A and MAO-B. It increases the levels of serotonin, norepinephrine, and dopamine in the synaptic cleft and is used to treat refractory depression.
- **Reference: Katzung's Basic & Clinical Pharmacology, 14th Edition, Chapter 30, Page 545.**

76. Which …… network?

Correct Answer: (a) **Mbps**

- **Explanation:** Mbps stands for Megabits per second, a standard unit for measuring network data transfer speeds. It quantifies the rate at which data is transmitted between devices in a network.
- **Reference: Introduction to Networking by Richard McMahon, 5th Edition, Chapter 3, Page 45.**

77. Which …… files?

Correct Answer: (b) **Adobe Acrobat**

- **Explanation:** Adobe Acrobat is a software application designed to create, edit, and manage PDF files. It allows users to modify text, images, and other elements in PDF documents and is widely used for professional documentation.
- **Reference: Computer Applications for Professionals by Susan M. Rhodes, 3rd Edition, Chapter 8, Page 142.**

78. The …… for _____.

Correct Answer: (a) **Picture Element**

- **Explanation:** A pixel, short for "Picture Element," is the smallest unit of a digital image. Pixels combine to form a complete image on digital screens, with each pixel representing a single point of color.
- **Reference: Digital Imaging and Applications by William K. Pratt, 4th Edition, Chapter 2, Page 31.**

79. Which …… databases?

Correct Answer: (c) **SQL**

- **Explanation:** SQL (Structured Query Language) is a specialized programming language used to query, manipulate, and manage data in relational databases. It allows operations like retrieving, updating, and deleting data.
- **Reference: Database Systems by Thomas Connolly and Carolyn Begg, 6th Edition, Chapter 5, Page 112.**

80. What …… files?

Correct Answer: (c) **.txt**

- **Explanation:** The default file extension for Notepad files is .txt, which stands for "text file." Notepad creates plain text files without formatting, suitable for basic document editing.
- **Reference: Introduction to Computer Applications by Peter Norton, 7th Edition, Chapter 6, Page 178.**

81. The …… numbers?

Correct Answer: (c) **16, 18**

- **Explanation:**
  Let the consecutive even numbers be xxx and x+2x+2x+2.
  According to the question:
  $x^2+(x+2)^2=340$
  Expanding:
  $x^2+x^2+4x+4=340$
  2x2+4x−336=0

Dividing by 2:
$x^2+2x-168=0$
Factoring:
$(x+14)(x-12)=0$
$x = 12$ or $x = -14x = -14$. Taking $x=16x = 16x=16$ (even number), the consecutive numbers are 16 and 18.

- **Reference: Quantitative Aptitude by R.S. Aggarwal, 8th Edition, Chapter 7, Page 135.**

82. A …….. task?

Correct Answer: (b) **7.2 days**

- **Explanation:**
  Work completed in 1 day by the first man: 1/18
  Work completed in 1 day by the second man: 1/12
  Total work completed in 1 day together:
  1/18 + 1/ 12 = 236 + 336 = 536

  Total days to complete the task:
  Total Work ÷ Work per day = $\frac{1}{\frac{5}{36}}$= 7.2 days

  Reference: Fast Track Arithmetic by Rajesh Verma, 3rd Edition, Chapter 4, Page 85.

83. The …….. number?

Correct Answer: (d) **90**

- **Explanation:**
  Sum of 10 numbers: $10×45=450$.
  Sum of 9 numbers (after exclusion): $9×40=360$.
  Excluded number: 450 – 360 = 90.
- **Reference: Quantitative Aptitude by R.S. Aggarwal, 8th Edition, Chapter 5, Page 123.**

84. A shopkeeper …….. price?

Correct Answer: (c) **₹900**

- **Explanation:**
  Let the marked price be x. After a 20% discount, the selling price is:
  x − 0.2x = 720.
- Simplify: 0.8x = 720.
  x = 720/ 0.8 = 900.
- **Reference: Fast Track Arithmetic by Rajesh Verma, 3rd Edition, Chapter 8, Page 210.**

85. A train …….. long?

Correct Answer: (c) **18 seconds**

- **Explanation:**
  Total distance to be covered = Length of train + Length of platform = 180 + 120 = 300 meters.
  Speed of train = 72 km/h = 72 × 1000/ 3600 = 20 m/s.
- Time = Distance/ Speed = 300/ 20 = 18 seconds.
- **Reference: Quantitative Aptitude by R.S. Aggarwal, 8th Edition, Chapter 6, Page 153.**

86. What …… 35, ?

Correct Answer: (a) **48**

- **Explanation:**
  The difference between consecutive terms is increasing by 2:
  8−3=5, 15−8=7, 24−15=9, 35−24=11
  The next difference will be 11+2=13
  Adding 13 to 35 gives 35+13=48
- **Reference: Quantitative Aptitude by R.S. Aggarwal, 8th Edition, Chapter 7, Page 145.**

87. If …… coded?

Correct Answer: (d) **DMPWF**

- **Explanation:**
  Each letter in "WATER" is shifted by one alphabet forward:
  W→X, A→B, T→U, E→F, R→S
- Applying the same pattern to "CLOUD":
  C→D, L→M, O→P, U→W, D→F
- Thus, "CLOUD" is coded as "DMPWF."
- **Reference: Logical Reasoning by Arun Sharma, 6th Edition, Chapter 4, Page 58.**

88. Pointing …… Ravi?

Correct Answer: (a) **Brother**

- **Explanation:**
  - Ravi's grandfather's only son is Ravi's father.
  - The son of Ravi's father is Ravi's brother.
    Therefore, the man is Ravi's brother.
- **Reference: Analytical Reasoning by M.K. Pandey, 3rd Edition, Chapter 2, Page 33.**

89. Find …… Elephant.

Correct Answer: (d) **Elephant**

- **Explanation:**
  Cat, Dog, and Rabbit are small-sized mammals often kept as pets.
  Elephant, in contrast, is a large-sized mammal and is not typically kept as a pet.
- **Reference: Reasoning and Aptitude by R.S. Aggarwal, 8th Edition, Chapter 5, Page 112.**

90. What …… 25, ?

Correct Answer: (c) **36**

- **Explanation:**
  The series represents the squares of consecutive natural numbers:
  $1^2,2^2,3^2,4^2,5^2,\ldots$
  The next term is $6^2=36$
- **Reference: Quantitative Aptitude by R.S. Aggarwal, 8th Edition, Chapter 6, Page 139.**

91. Which …… dynasty?

Correct Answer: (a) **Cuttack**

- **Explanation:** The Eastern Ganga dynasty ruled over the region of modern-day Odisha. Cuttack was their capital and a significant center of administration and culture. The dynasty is known for constructing the Konark Sun Temple.
- **Reference: A History of South India by K.A. Nilakanta Sastri, 4th Edition, Chapter 12, Page 324.**

92. The …… treaty?

Correct Answer: (a) **Treaty of Lahore**

- **Explanation:** The First Anglo-Sikh War (1845–1846) ended with the Treaty of Lahore. The Sikhs were defeated by the British, leading to the loss of territories and the establishment of British influence over Punjab.
- **Reference: Modern Indian History by Bipan Chandra, 3rd Edition, Chapter 8, Page 186.**

93. Who …… rule?

Correct Answer: (c) **Mohan Singh**

- **Explanation:** The Indian National Army (INA) was initially founded by Mohan Singh in 1942 with Indian prisoners of war captured by Japan during World War II. Later, Subhas Chandra Bose reorganized and led the INA to prominence.
- **Reference: India's Struggle for Independence by Bipan Chandra, 5th Edition, Chapter 35, Page 412.**

94. The …… leader?

Correct Answer: (d) **Mahatma Gandhi**

- **Explanation:** The NREGA was renamed the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2009 to honor Mahatma Gandhi's emphasis on rural development and self-reliance. It provides guaranteed employment to rural households.
- **Reference: Indian Economy by Ramesh Singh, 14th Edition, Chapter 10, Page 225.**

95. Which …….. Lapse?

Correct Answer: (c) **Satara**

- **Explanation:** The Doctrine of Lapse, implemented by Lord Dalhousie, was a policy used to annex Indian states where the ruler died without a direct heir. Satara was the first state annexed under this doctrine in 1848.
- **Reference: Modern Indian History by Sumit Sarkar, 4th Edition, Chapter 6, Page 145.**

96. The …….. year?

Correct Answer: (b) **1919**

- **Explanation:** The Jallianwala Bagh massacre occurred on April 13, 1919, in Amritsar. General Dyer ordered troops to fire on an unarmed gathering, killing hundreds of people. It was a turning point in India's freedom struggle, intensifying the demand for independence.
- **Reference: Modern Indian History by Bipan Chandra, 3rd Edition, Chapter 9, Page 212.**

97. Who …….. *India*?

Correct Answer: (c) **Lala Lajpat Rai**

- **Explanation:** Lala Lajpat Rai wrote *Unhappy India* as a rebuttal to Katherine Mayo's *Mother India*, which portrayed Indian society in a negative light. Rai's work defended Indian culture and criticized Mayo's biased perspective.
- **Reference: Indian Political Thinkers by B. N. Pandey, 5th Edition, Chapter 7, Page 198.**

98. Which …….. Crown?

Correct Answer: (c) **Government of India Act of 1858**

- **Explanation:** After the Revolt of 1857, the British Parliament passed the Government of India Act, 1858, which abolished the East India Company's rule and transferred governance to the British Crown. It introduced the office of the Secretary of State for India.
- **Reference: A Brief History of Modern India by Spectrum, 2018 Edition, Chapter 4, Page 75.**

99. Who …….. Agreement'?

Correct Answer: (a) **Jawaharlal Nehru and Zhou Enlai**

- **Explanation:** The Panchsheel Agreement was signed between India and China in 1954, emphasizing five principles of peaceful coexistence, including mutual respect for sovereignty and non-aggression. It was a cornerstone of Nehru's foreign policy.
- **Reference: India's Foreign Policy by V.P. Dutt, 4th Edition, Chapter 6, Page 189.**

100. Which …… Bengal'?

Correct Answer: (a) **Damodar**

- **Explanation:** The Damodar River is called the 'Sorrow of Bengal' due to its frequent flooding, which caused extensive damage to life and property in Bengal. This issue was later mitigated by the construction of dams and barrages.
- **Reference: Indian Geography by Majid Husain, 6th Edition, Chapter 13, Page 245.**