

## GPAT 2023 Shift 1 Question Paper With Answers and Solutions (Memory-based)

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**Question 1. What is the Schedule for Ophthalmic preparation?**

**Answer:** Schedule FF.

**Solution:** Schedule FF contains regulations and standards for ophthalmic ointments and solutions.

**Question 2. In which resin cinnamic and benzoic acid is present?**

**Answer:** Balsams resin.

**Solution:** Peru balsam resin is obtained from the Myroxylon balsamum tree. It contains a complex mixture of compounds, including cinnamic acid and benzoic acid. Peru balsam resin has been utilized in perfumes, as a fragrance ingredient in soaps and cosmetics, and in pharmaceutical preparations.

**Question 3. What type of glass is not used for parenteral preparation?**

**Answer:** IV NP General Sodalime glass.

**Solution:** Regular soda-lime glass is not typically used for parenteral preparation. Soda-lime glass has a higher expansion rate and is more prone to thermal stress and breakage when exposed to rapid temperature changes, such as those encountered during sterilization. Therefore, it is not considered suitable for the stringent requirements of parenteral (injectable) preparations, where stability and integrity of the container are crucial.

#### **Question 4. What is the family of Isabgol?**

**Answer:** Plantaginaceae.

**Solution:** Isabgol, also known as Psyllium husk or Plantago ovata, belongs to the family Plantaginaceae. The Plantaginaceae family includes various flowering plants commonly found in temperate regions. Isabgol is specifically derived from the seed husks of the Plantago ovata plant and is well-known for its high fiber content and medicinal properties. It is often used as a dietary supplement and in the production of laxatives and fiber-rich products.

#### **Question 5. Name the schedule for disinfectants?**

**Answer:** Schedule O.

**Solution:** Schedule O describes the standards for Disinfectant Fluids.

#### **Question 6. What is the Lucas test?**

**Answer:** To differentiate between primary, secondary and tertiary alcohols.

**Solution:** The Lucas test is a chemical test used to differentiate between primary, secondary, and tertiary alcohols based on their reactivity with Lucas reagent. The test is named after its developer, Howard Lucas.

The Lucas reagent is a mixture of concentrated hydrochloric acid (HCl) and anhydrous zinc chloride (ZnCl<sub>2</sub>). The reaction occurs by the displacement of a chloride ion from the Lucas reagent by the alcohol. The rate at which the reaction takes place is dependent on the type of alcohol being tested.

**Question 7. What is the weight of 00 capsules in mg?**

**Answer:** 120-160 mg.

**Solution:** The weight of 00 capsules can vary slightly depending on the manufacturer and the specific formulation of the capsule. However, as a general guideline, empty 00 capsules typically weigh around 120 to 160 milligrams (mg). It's important to note that the weight of a capsule may change if it is filled with a substance, such as medication or supplements.

**Question 8. Alkaloid Strychnine is present in which of the following?**

**Answer:** Nux Vomica.

**Solution:** Strychnine is an alkaloid that is naturally present in the seeds of *Strychnos nux-vomica* and *Strychnos ignatii* plants. These plants belong to the Loganiaceae family. Strychnine is most commonly associated with *Strychnos nux-vomica*, which is native to Southeast Asia. The seeds of *Strychnos nux-vomica* contain strychnine and other related alkaloids and have been historically used in traditional medicine. It's worth noting that strychnine is a highly toxic compound and should be handled with extreme caution.

**Question 9. Why is Thermogravimetric analysis used for?**

**Answer:** Determining purity and composition of materials, drying and ignition temperatures of materials and knowing the stability temperatures of compounds.

**Solution:** Thermogravimetric analysis (TGA) is a technique used to study the thermal decomposition and stability of materials by measuring their weight changes as a function of temperature. It involves subjecting a sample to a controlled temperature program while monitoring its weight loss or gain.

TGA is used for several purposes, including:

**Determination of Thermal Stability:** TGA is commonly employed to assess the thermal stability of materials. It can identify the temperatures at which weight loss or decomposition occurs, providing insights into the material's stability and potential degradation mechanisms.

**Quantitative Analysis:** TGA can be used for quantitative analysis, especially in cases where a material's composition can be correlated with its weight loss or gain under specific temperature conditions. By calibrating the instrument with known substances, it is possible to determine the composition of an unknown sample.

**Study of Decomposition Kinetics:** TGA allows for the study of decomposition kinetics by analyzing the rate and extent of weight loss as a function of temperature. By applying appropriate mathematical models, such as the Kissinger or Flynn-Wall-Ozawa methods, it is possible to estimate activation energies and reaction mechanisms.

**Evaluation of Moisture Content and Volatile Content:** TGA can be utilized to determine the moisture content and volatile content of a sample. By subjecting the sample to increasing temperature, the loss of moisture and volatiles can be monitored, aiding in the characterization of materials with respect to their water or volatile content.

**Assessment of Purity and Decomposition Pathways:** TGA can help evaluate the purity of a substance by monitoring weight loss or gain associated with impurities or decomposition products. It can provide insights into the decomposition pathways of complex materials and identify the formation of by-products or residues.

**Quality Control and Material Characterization:** TGA is employed in quality control processes and material characterization in various industries. It can aid in assessing the thermal stability of polymers, pharmaceuticals, catalysts, fuels, food products, and other materials.

Overall, TGA is a versatile technique that provides valuable information about the thermal properties, stability, decomposition behavior, and composition of materials, making it a valuable tool in research, development, and quality control applications.

**Question 10. What does Schedule M2 deal with?**

**Answer:** It deals with cosmetics.

**Solution:** Schedule M- 2 is titled “Requirements Of Factory Premises For Manufacture Of Cosmetics”.

The GMP requirements in schedule M2 are for Cosmetic Products. It specifies GMP requirements for premises such as buildings, equipment, basic sanitation etc for cosmetic products.

Schedule M2 prescribes basic equipment and facilities for different sections such as creams, nail polishes, lipstick, hair dyes and powders etc.

**Question 11. Trastuzumab is a/an**

- A. EGFR/HER 2 inhibitor**
- B. Angiogenesis inhibitor**
- C. EGF Receptor HER inhibitor**
- D. BCR-ABL tyrosine kinase inhibitors**

**Answer:** EGFR/HER 2 inhibitor.

**Solution:** Trastuzumab, sold under the brand name Herceptin among others, is a monoclonal antibody used to treat breast cancer and stomach cancer.

**Question 12. When is a NDA made?**

- A. Once the animal studies are done and drug is declared safe in animals.**
- B. Once the animal studies are done and drug declared safe and effective in animals study.**
- C. After the phase III clinical trial.**
- D. After the phase IV clinical trial.**

**Answer:** After the phase III clinical trial.

**Solution:** After Phase III Clinical trials A 'new drug application' (NDA) is submitted to the licensing authority (like FDA), who if convinced give marketing permission.

Note: 'Restricted marketing permission for use only in hospitals with specific monitoring facilities.

**Question 13. Which metabolite is used to inactivate the vasico-toxic metabolite leading to hemorrhagic cystitis by alkylating agent used in the treatment of cancer**

- A. Acrolein**
- B. Aldophosphamide**
- C. Cyclophosphamide**
- D. Mesna**

**Answer:** Mesna

**Question 14. Which of the following is a 4th Generation Cephalosporin?**

- A. Ceftriaxone**
- B. Cefaclor**
- C. Cefuroxime**

**D. Cefepime**

**Answer:** Cefepime.

**Question 15. All are true for Metoclopramide EXCEPT**

- A. 5HT<sub>1</sub> receptor antagonist**
- B. D<sub>2</sub> receptor antagonist**
- C. 5HT<sub>3</sub> receptor antagonist**
- D. 5HT<sub>4</sub> receptor agonist**

**Answer:** 5HT<sub>1</sub> receptor antagonist

**Question 16. Identify the drug that is not among the drug recommended as the 1st time drug in the treatment of Partial seizure with or without generalized seizure**

- A. Carbamazepine**
- B. Valproate**
- C. Diazepam**
- D. Lamotrigine**

**Answer:** Diazepam

**Question 17. All of the following are TNF<sub>α</sub> inhibitor EXCEPT**

- A. Etanercept**
- B. Infliximab**
- C. Adalimumab**
- D. Basiliximab**

**Answer:** Basiliximab