

(Affiliated to the Tamil Nadu Dr M.G.R Medical University, Chennai)

B. Sc. CARDIOPULMONARY PERFUSION CARE TECHNOLOGY

## 1411 – PHARMACOLOGY

## II YEAR

## UNIT I – ANTI ARRHYTHMIC DRUGS , IONOTROPES &amp; DRUGS FOR PAD , CHF

## I. ELABORATE ON

10 MARKS

## REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

| S.No. | Questions                                                                                                                                                                                                     | Reference Year (Month) | Blooms Taxonomy        |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| 1.    | Classify Antiarrhythmic drugs using the Vaughan Williams system. Discuss in detail the mechanism of action, uses, and adverse effects of <b>Class I Sodium Channel Blockers</b> (e.g., Quinidine, Lidocaine). | 2015 (Feb)             | Analysis/Application   |
| 2.    | Discuss the <b>pharmacological management of Congestive Heart Failure (CHF)</b> . Explain the role of <b>Positive Inotropes (Cardiac Glycosides)</b> , ACE Inhibitors, and Beta-blockers in CHF therapy.      | 2021 (Mar)             | Analysis/Evaluation    |
| 3.    | Describe the mechanism by which drugs cause <b>Torsades de Pointes (TdP)</b> . List the major drug classes and specific agents (e.g., Amiodarone, Sotalol) that carry a high risk of causing this arrhythmia. | 2018 (Feb)             | Analysis/Understanding |
| 4.    | Write in detail about <b>Cardiac Glycosides (Digitalis)</b> . Discuss their cellular mechanism of action, pharmacological effects, adverse effects, and drug interactions.                                    | 2023 (April)           | Analysis/Evaluation    |

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| S.No. | Questions                                                                                                                                                                                                   | Reference Year (Month) | Blooms Taxonomy        |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------|
| 5.    | <b>Classify drugs used for Peripheral Artery Disease (PAD).</b> Describe the mechanism of action and therapeutic uses of antiplatelet agents (e.g., Aspirin, Clopidogrel) and agents used for claudication. | 2024 (April)           | Analysis/Application   |
| 6.    | Discuss the clinical uses and complex toxicity profile of <b>Amiodarone (Class III)</b> . Explain why it is considered an atypical antiarrhythmic drug.                                                     | 2017 (Feb)             | Analysis               |
| 7.    | Explain the differences between <b>inotropic, chronotropic, and dromotropic</b> effects on the heart. Name three classes of drugs that exhibit positive inotropic effects.                                  | 2013 (August)          | Understanding/Analysis |
| 8.    | Discuss the role of <b>Beta-blockers (Class II)</b> and <b>Calcium Channel Blockers (Class IV)</b> in the treatment of supraventricular arrhythmias.                                                        | 2019 (Feb)             | Analysis/Application   |
| 9.    | Classify <b>Anticoagulants</b> . Discuss in detail about the various types, mechanism of action, indications and dosage of <b>Heparin</b> (often used in acute CHF/MI).                                     | 2024 (April)           | Analysis/Application   |
| 10.   | Describe the pharmacology of <b>Adenosine</b> . Explain its unique mechanism, uses, and its definitive role in managing Supraventricular                                                                    | 2016 (Aug)             | Analysis/Application   |

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| S.No. | Questions          | Reference Year (Month) | Blooms Taxonomy |
|-------|--------------------|------------------------|-----------------|
|       | Tachycardia (SVT). |                        |                 |

**II.WRITE SHORT NOTES ON****5 MARKS****REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER**

| S.No. | Questions                                                                                                                       | Reference Year (Month) | Blooms Taxonomy           |
|-------|---------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------|
| 1.    | Write a note on <b>Sodium Channel Blockers</b> (general mechanism and two examples).                                            | 2015 (August)          | Understanding             |
| 2.    | Name and briefly describe the mechanism of action of <b>two Positive Inotropes</b> (non-glycoside) used in acute heart failure. | 2013 (August)          | Understanding             |
| 3.    | Write notes on the <b>mechanism of action of Digoxin (Cardiac Glycoside)</b> .                                                  | 2022 (Feb)             | Understanding             |
| 4.    | Discuss the <b>toxicity and treatment of Digoxin overdose</b> .                                                                 | 2017 (August)          | Understanding/Application |
| 5.    | Describe the mechanism of action and uses of <b>Lidocaine</b> (a Class antiarrhythmic).                                         | 2019 (Aug)             | Understanding/Application |
| 6.    | Discuss the mechanism by which                                                                                                  | 2014 (Aug)             | Understanding             |

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| S.No. | Questions                                                                                          | Reference Year (Month) | Blooms Taxonomy           |
|-------|----------------------------------------------------------------------------------------------------|------------------------|---------------------------|
|       | <b>Potassium Channel Blockers (Class III)</b> exert their antiarrhythmic effect.                   |                        |                           |
| 7.    | Explain the role of <b>Diuretics</b> in the management of Congestive Heart Failure.                | 2012 (August)          | Application               |
| 8.    | Write notes on <b>drugs used for intermittent claudication</b> in Peripheral Artery Disease (PAD). | 2018 (Aug)             | Understanding/Application |
| 9.    | Discuss the major <b>extracardiac adverse effects of Amiodarone</b> .                              | 2020 (Feb)             | Understanding             |
| 10.   | Write notes on <b>Sodium Channel Blockade</b> (specific effect and clinical consequence).          | 2015 (August)          | Understanding             |

**III.WRITE SHORT NOTES ON****3 MARKS****REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER**

| S.No. | Questions                                                   | Reference     | Blooms Taxonomy     |
|-------|-------------------------------------------------------------|---------------|---------------------|
| 1.    | Give two examples of <b>Class Sodium Channel Blockers</b> . | 2014 (August) | Remember            |
| 2.    | Write shortly on <b>Positive Inotropes</b> .                | 2013 (August) | Remember/Understand |
| 3.    | Name a drug from <b>Class antiarrhythmic drugs</b> .        | 2017 (August) | Remember            |

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| S.No. | Questions                                                                                  | Reference     | Blooms Taxonomy     |
|-------|--------------------------------------------------------------------------------------------|---------------|---------------------|
| 4.    | Name two classes of drugs used to treat <b>CHF</b> that are <b>not</b> positive inotropes. | 2016 (Feb)    | Remember            |
| 5.    | Name a drug specifically used to treat <b>intermittent claudication</b> in PAD.            | 2024 (April)  | Remember            |
| 6.    | Name the drug that reverses <b>Digoxin toxicity</b> .                                      | 2017 (Feb)    | Remember            |
| 7.    | Give two examples of <b>Class III Potassium Channel Blockers</b> .                         | 2019 (Feb)    | Remember            |
| 8.    | Write a note on <b>Inotropes</b> .                                                         | 2012 (August) | Remember/Understand |
| 9.    | Define <b>Torsades de Pointes (TdP)</b> .                                                  | 2018 (Aug)    | Remember/Understand |
| 10.   | What is the main action of <b>Milrinone</b> ?                                              | 2020 (Feb)    | Remember            |
| 11.   | Define the term <b>Sodium Channel Blockade</b> in antiarrhythmic therapy.                  | 2015 (August) | Understand          |
| 12.   | Give two drugs that prolong the <b>QT interval</b> (risk of TdP).                          | 2023 (April)  | Remember            |
| 13.   | Name a <b>Beta-blocker</b> that is also used as an antiarrhythmic drug.                    | 2016 (Aug)    | Remember            |
| 14.   | What are the clinical manifestations of <b>Pulmonary Embolism</b> ?                        | 2016 (Aug)    | Remember/Understand |
| 15.   | What is the mechanism of action of <b>Verapamil (Class IV)</b> in arrhythmias?             | 2018 (Feb)    | Understand          |

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