

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 955]

MAY 2019

Sub. Code: 2955

**M.PHARM. DEGREE EXAMINATION**  
**(PCI New regulations 2016)**  
**SEMESTER-II**  
**BRANCH-III – PHARMACEUTICAL ANALYSIS – MPA**  
**PAPER I – ADVANCED INSTRUMENTAL ANALYSIS**

*Q.P. Code :262955*

**Time : Three hours**

**Maximum : 75 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. a) Write the principle of Gas Chromatography.  
b) Explain about the detectors used in Gas Chromatography.
2. a) Discuss in detail about LC-MS Hyphenation technique.  
b) Explain in detail about Quadrupole and Ion trap type of Mass Analysers.

**II. Write notes on:**

**(7 x 5 = 35)**

1. Write the principle and quantization techniques of HPTLC.
2. Discuss NOESY techniques in NMR.
3. Explain different factors influencing chemical shift in NMR.
4. Write shortly about APPI mass fragmentation and its rules.
5. Discuss about the practical aspects of preparative HPLC.
6. Enumerate in detail about different types of injectors used in HPLC.
7. Write about head space sampling technique in Gas chromatography and its applications.

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