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

[LM 945] MAY 2018 **Sub. Code: 2945**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-II
BRANCH–II – PHARMACEUTICAL CHEMISTRY – MPC
PAPER I – ADVANCED SPECTRAL ANALYSIS

Q.P. Code : 262945

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Explain the general Fragmentation patterns for the interpretation of organic Compounds in Mass Spectrometry.
   b) Give the Mass interpretation patterns for the following organic compounds.
      a) Benzyl alcohol b) 2-Hexanone c) Benzaldehyde d) Benzamide

2. a) Explain the principle and methodology of Differential Scanning Colorimetry (DSC).
   b) Write the principle, Instrumentation and Application of GC – MS.

II. Write notes on: **(7 x 5 = 35)**

1. Radio Immuno-assay of digitalis.
2. Explain the following and discus the merits of:
   a) Super critical fluid chromatography.
   b) Flash Chromotography.
3. Cosy and Nosy.
4. FT- IR and ATR – IR.
5. How do you calculate the absorption maximum wavelength for Dienes with Woodward Fieser Rule?
6. Predict and explain the signal positions (8 value) and spin-spin Splitting in the NMR spectra of : a) Butanol b) 2- Chloropropane
7. Explain the MC Lafferty Rearrangements.

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

[LN 945] NOVEMBER 2018 **Sub. Code: 2945**

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(PCI New regulations 2016)
SEMESTER-II
BRANCH–II – PHARMACEUTICAL CHEMISTRY – MPC
PAPER I – ADVANCED SPECTRAL ANALYSIS

Q.P. Code : 262945

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Explain the different elution techniques used in high performance thin layer chromatography (HPTLC).
   b) Discuss the application of Woodward-Fieser Rules taking α, β – Unsaturated ketones as example.

2. a) Explain the instrumentation of 1D and 2D NMR and discus the Hector and Inadequate techniques.
   b) Explain the principle with neat diagram of LC- NMR and its application.

II. Write notes on: **(7 x 5 = 35)**

1. Liquid Chromotography – Mass Spectroscopy (LC-MS).
2. Write the principle and applications of DSC.
3. Woodwards rule and its application.
4. Explain the theory behind the important aspects of molecular fragmentation in mass spectroscopy.
5. Explain the principle and application of TGA.
6. Write the Application of DTA.
7. Explain the principle and Application of LC-FTIR.

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

[LO 945] MAY 2019 **Sub. Code: 2945**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-II
BRANCH–II – PHARMACEUTICAL CHEMISTRY – MPC
PAPER I – ADVANCED SPECTRAL ANALYSIS

Q.P. Code : 262945

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain the Interpretation of NMR spectroscopy.
2. Explain the woodward - Fieser rule in Cyclic dienes and discuss the ATR - IR.

II. Write notes on: **(7 x 5 = 35)**

1. 2-D NMR.
2. Meta Stable ions.
3. Flash Chromatography.
4. GC – MS.
5. ELISA.
6. Write the Principle, Instrumentation & applications of Raman Spectroscopy.
7. Short note on TGA.

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

[LP 945] NOVEMBER 2019 **Sub. Code: 2945**

M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-II
BRANCH–II – PHARMACEUTICAL CHEMISTRY – MPC
PAPER I – ADVANCED SPECTRAL ANALYSIS

Q.P. Code : 262945

Time : Three hours **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain the interpretation of organic compounds in Mass Spectroscopy.
2. Explain the principle, instrumentation and application of LC-MS.

II. Write notes on: **(7 x 5 = 35)**

1. Nosy – Cosy.
2. Write note on Biological standardization RIA.
3. Woodward-Fieser Rules for 1, 3-Butadienes.
4. Isotopic peaks in mass spectroscopy.
5. Write note on 1 - D NMR.
6. HPTLC.
7. Write note on Fragmentation of Carbonyl compounds.

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

[LQ 0121] JANUARY 2021 Sub. Code: 2945

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

SEMESTER-II (PCI New regulations 2016)

PHARMACEUTICAL CHEMISTRY – MPC

PAPER I – ADVANCED SPECTRAL ANALYSIS

Q.P. Code : 262945

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Cosy and Nosy.
   b) Principle and applications of DSC.

2. a) Principle with neat diagram of GC- AAS and its application.
   b) Principle, Instrumentation of Raman Spectroscopy

II. Write notes on: **(7 x 5 = 35)**

1. ELISA.
2. Principle, Instrumentation and Application of Ion Chromatography.
3. FT- IR and ATR – IR.
4. M_C Lafferty Rearrangements.
5. Mass fragmentation and its rules.
6. Principle and methodology of DTA.
7. Radio immuno assay of Digitalis.

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

[MPHARM 0921] SEPTEMBER 2021 Sub. Code: 2945
(OCTOBER 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER-II (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER I – ADVANCED SPECTRAL ANALYSIS
Q.P. Code : 262945

Time : Three hours **Answer ALL Questions** **Maximum : 75 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain ATR-IR. Discuss Woodward Fieser rule for α-β unsaturated carbonyl compounds.

2. a) Explain the principle, instrumentation and applications of CE-MS.
   b) Explain the principle with neat diagram and applications of TGA.

II. Write notes on: **(7 x 5 = 35)**

1. IR Interpretation of Amines.
2. Predict and explain the signal positions (δ value) and spin – spin splitting in the ^{1}H NMR spectra of a) Ethyl benzene b) Benzyl alcohol.
3. Mc Lafferty rearrangement of fragmented ions in Mass Spectrometry.
4. Bio Assay.
5. Meta stable ions.
6. HPTLC.
7. Radioimmuno assay of digitalis.

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

[M.PHARM 0922] SEPTEMBER 2022 Sub. Code: 2945
(APRIL 2022 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION
SEMESTER - II (PCI New regulations 2016)
PHARMACEUTICAL CHEMISTRY - MPC
PAPER I – ADVANCED SPECTRAL ANALYSIS

Q.P. Code : 262945

Time : Three hours Answer ALL Questions Maximum : 75 Marks

I. Elaborate on: (2 x 20 = 40)

1. A) Give the Mass Interpretation patterns for the following organic compounds:
   a) Cyclohexene b) Naphthalene c) 2-butanol d) Benzamide.
   B) Write the Principle with neat diagram of High performance Thin Layer Chromatography and its Application.

2. A) Write the Instrumentation of Ion exclusion chromatography and its application.
   B) Write the Principle, Instrumentation and Application of ELISA.

II. Write notes on: (7 x 5 = 35)

1. Woodward's Fieser Rule and its applications.
2. Write a note on Enzyme Linked Immuno Sorbent Assay.
3. Explain the Principle and Application of Differential Scanning Calorimetry.
4. Super critical fluid chromatography.
5. Mass Fragmentation and its rules.
6. Explain HECTOR and INADEQUATE Techniques.
7. Explain Ion Exchange chromatography.

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