Question Paper

Exam Date & Time: 02-May-2019 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.
MPharm - Pharmaceutical Chemistry
MPharm Second Semester- End-Semester Examination- May 2019
Date: 02/05/2019

Advanced Spectral Analysis [PCH-MPC201T]

Marks: 75 **Duration: 180 mins.**

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

1) What are metastable ions? When do they appear and what is their importance in Mass spectra. (10)

2) Write a note on: (i) Rule of 13 (ii) Shielding and deshielding (iii) Isotopic peaks iv) Precessional Frequency (10)

3) Write the principle, instrumentation and application of LC-NMR (10)

4) Explain the different types of columns in Chromatography techniques (10)

5) What is Woodward Rule Fisher Rule for α, β-carbonyl compounds? (10)
Explain in brief ATR-IR

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

6) Explain NOE and NOESY techniques in NMR. (5)

7) Compare and contrast between Electron Impact (EI) and Chemical Ionisation (CI) techniques in Mass Spectroscopy. (5)

8) Write a note on Coupling constant and its importance. (5)

9) Discuss Ultra and Nano liquid chromatography (5)

10) Write a note on CE-MS interface (5)

-----End-----

Question Paper

Exam Date & Time: 04-May-2019 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.
MPharm - Pharmaceutical Chemistry
MPharm Semester II - End Semester Examination, May-2019
Date : 04/05/2019

Advanced Organic Chemistry II [PCH-MPC202T]

Marks: 75 **Duration: 180 mins.**

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

1) What are the different types of chirality transfer and discuss chelation enforced chirality transfer with a suitable example. (10)

2) Explain the asymmetric epoxidation reactions and retro Diels-alder reactions. (10)

3) Explain in detail, with an example, about the solid phase peptide synthesis. (10)

4) Write a note on N-protective groups used in peptide synthesis. Mention their merits and demerits. (10)

5) What is green synthesis? Give any four principles of green chemistry with examples. (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

6) Discuss metal catalysed reactions with an example. (5)

7) What is tanδ of solvents in microwave synthesis? How do you calculate it? (5)

8) Define and discuss with an example of the following: (5)
a) cyclo addition reactions b) sigmatropic rearrangement

9) Explain chiral separation by column chromatographic method. (5)

10) Enlist the important catalyst and building blocks used in asymmetric aldol reactions. (5)

-----End-----

Question Paper

Exam Date & Time: 06-May-2019 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.
MPharm - Pharmaceutical Chemistry Specialization
MPharm Semester II - End-Semester Examination May 2019
Date : 06/05/2019

Computer Aided Drug Design [PCH-MPC203T]

Marks: 75 **Duration: 180 mins.**

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

1) Explain Free Wilson analysis and its relationship with Hansch analysis (10)

2) Explain the various drug receptor interactions involved in a docking process and what is their significance? Explain in detail the various scoring functions used in docking. (10)

3) Explain the role of cluster analysis and principle component analysis in 2D QSAR studies with suitable examples (10)

4) What is Quantum mechanics and Molecular mechanics? Mention their applications (10)

5) Describe the different types of pharmacophore generation methods and how the mapping of pharmacophore is done? Explain with an example. (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

6) What is Hammet constant and Taft constant? Give their applications (5)

7) Explain the importance of predicting and analysing the ADMET properties of a new molecule in a drug design. (5)

8) What is CoMFA and CoMSIA? Explain, how they are used in QSAR model building? (5)

9) What is similarity based virtual screening? Explain the methodology involved in it. (5)

10) Write a note on Homology modelling. (5)

-----End-----

Question Paper

Exam Date & Time: 08-May-2019 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.
MPharm - Pharmaceutical Chemistry Specialization
MPharm Semester II - End Semester Examination, May 2019
Date : 08/05/2019

Pharmaceutical Process Chemistry [PCH-MPC204T]

Marks: 75 **Duration: 180 mins.**

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

1) Discuss on the principles of process green chemistry (10)

2) Explain the mechanism of crystallization and add a note on basic crystal properties such as solubility, supersaturation, metastable zone and induction time (10)

3) Explain the various process design reasons for selection of solvent (10)

4) What are nitrating agents? Discuss the kinetics and mechanism of aromatic nitration. (10)

5) What are the characteristics of cost- effective routes? Explain in detail. (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

6) What are the advantages and disadvantages of salt formation? Give a note on pharmaceutical and biological effects of salt form. (5)

7) What is MSDS? Explain in detail the contents and format of MSDS (5)

8) Classify fire with suitable examples. How will you prevent fire hazards? (5)

9) Explain catalytic hydrogenation reactions with examples. (5)

10) What are non-metallic oxidising agents? Explain. (5)

-----End-----