

# 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 Analysis

MPharm Second Semester- End-Semester Examination- May 2019

Date : 02/05/2019

### Advanced Instrumental Analysis [PCH-MPA201T]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

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

- 1) Explain immobilised polysaccharides used in Enantiomeric separation (10)
- 2) Write the principle, instrumentation and specific applications of LC-MS. (10)
- 3) Explain the different steps involved in HPTLC (10)
- 4) What is chemical shift? Explain the parameters the chemical shift depends on and also the factors that influence the chemical shift values. (10)
- 5) Expand HETCOR. Give its general feature. List out and explain about the various techniques included in it along with spectra. (10)

#### SECTION - B

Answer all the questions.

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

- 6) Assign the PMR chemical shift values for the following compounds:  
a) Anisole b) Ethyl benzene c) Ethyl alcohol d) Diethyl ether (5)
- 7) Explain the various steps involved in the 2D NMR spectroscopy with a diagram. (5)
- 8) Discuss the various types of fragmentation ions produced in Mass spectroscopy and their importance (5)
- 9) Discuss the methods for the separation of Chiral compounds (5)
- 10) Discuss the methods involved in GC derivatisation (5)

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# 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 Analysis Specialization

MPharm Semester II - End Semester Examination, May 2019

Date :04/05/2019

### Modern Bioanalytical Techniques [PCH-MPA202T]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

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

- 1) Explain solid phase extraction and protein precipitation as sample preparation methods in biopharmaceutical analysis (10)
- 2) Discuss the various alternative methods in dissolution testing and their applications (10)
- 3) Write a note on different types and levels of bioanalytical method validation and explain how stability is established during bioanalytical method validation as per FDA (10)
- 4) What are the factors that can be determined with the help of toxicokinetic principles? (10)
- 5) Write in detail about safe laboratory practices to be followed in a cell culture lab. (10)

#### SECTION - B

Answer all the questions.

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

- 6) What are biosimilars? Write a note on FDA recommendation on factors that must be considered in assessing biosimilarity (5)
- 7) Explain the pH-solubility curve for a weak acid and a weak base. Add a note on BCS classification of drugs (5)
- 8) What are the implications of Pharmacokinetic interactions? Explain with suitable examples. (5)
- 9) Explain the different Biosafety levels. (5)
- 10) Write about different types of Cell Culture Hoods (5)

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# 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 Analysis

MPharm Second Semester- End-Semester Examination- May-2019  
Date : 06/05/2019

### Quality Control and Quality Assurance [PCH-MPA203T]

Marks: 75

#### SECTION - A

Duration: 180 mins.

Answer all the questions.

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

- 1) Explain in detail about packaging of sterile products. How will you calculate percentage yield? Explain. (10)
- 2) What is SOP? What are its benefits? Explain the method of preparation and maintenance of SOP. (10)
- 3) Explain specifications, verification of specifications and shelf life of finished products as per WHO guidelines. (10)
- 4) What is pharmaceutical quality system? Mention the objectives of GMP. How do you prepare Master plan? (10)
- 5) Mention the contents and specifications for the purchase of raw material. (10)

#### SECTION - B

Answer all the questions.

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

- i) How will you calculate expiry date? Discuss accelerated stability testing (5)
- ) Explain the In process quality control tests for suppositories (5)
- ) Discuss packaging operations. (5)
- ) What is the difference between routine and periodic test for finished products? Explain. (5)
- ) What are the secondary packaging materials used? Enlist various transport packaging tests (5)

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# 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 Analysis

MPharm Semester I - End Semester Examination, May, 2019

Date : 08/05/2019

### Herbal and Cosmetic Analysis [PCH-MPA204T]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

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

- 1) How do you evaluate cosmetic products for moisture, ash and volatile matter? (10)
- 2) Explain WHO guidelines in quality assessment of herbal drugs. (10)
- 3) Discuss the Indian and international patent law with its protocol. (10)
- 4) What are the different methods used for screening of adulterant. (10)
- 5) What are the general methods of analysis of raw materials used in cosmetic products as per BIS? (10)

#### SECTION - B

Answer all the questions.

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

- 6) Discuss about various pharmacopoeias. (5)
- 7) Briefly discuss about toxicity studies of herbal drugs. (5)
- 8) What are AYUSH guidelines? Give the principle involved in homeopathy medicine. (5)
- 9) Define saponification value and acid value. Mention their significance. (5)
- 10) Give the specifications for sampling and testing of baby care products. (5)

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