

SUBJECT : RESEARCH METHODOLOGY & BIOSCREENING

Day : Wednesday
Date : 07-01-2015

Time : 10:00AM TO 1:00 PM.
Max. Marks : 60

N.B.

- 1) Attempt any **THREE** questions from Section - I and Section - II each.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1 Explain meaning, purpose of research and types of research. (10)
- Q.2 Explain the important considerations for selecting a research problem for M.Pharm. (10)
- Q.3 What do you understand by quality by design (QBD)? And explain the principles. (10)
- Q.4 Write elaborate notes on any **TWO** of the following: (10)
- a) Descriptive research
 - b) References
 - c) Objectives of research

SECTION - II

- Q.5 Explain the bio-screening of antihypertensive drugs. (10)
- Q.6 Explain the three 'R' principles of animal usage for experimentation. (10)
- Q.7 In primary health centre 30% of women were found to be malnourished. If from the batch of 100 women 30 women are selected at random. What is the probability of atleast 20 women being malnourished? (10)
- Q.8 Write elaborate notes on any **TWO** of the following: (10)
- a) Chi-square test
 - b) Scatter diagram
 - c) Randomization

* * *

Day : Wednesday
Date : 07-01-2015

Time : 10:00AM TO 1:00 P.M.
Max. Marks : 60

N.B.

- 1) Attempt any **THREE** questions from Section – I and Section – II each.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1 Explain meaning, purpose of research and types of research. (10)
- Q.2 Explain the important considerations for selecting a research problem for M.Pharm. (10)
- Q.3 What do you understand by quality by design (QBD)? And explain the principles. (10)
- Q.4 Write elaborate notes on any **TWO** of the following: (10)
- a) Descriptive research
 - b) References
 - c) Objectives of research

SECTION – II

- Q.5 Explain the bio-screening of antihypertensive drugs. (10)
- Q.6 Explain the three 'R' principles of animal usage for experimentation. (10)
- Q.7 In primary health centre 30% of women were found to be malnourished. If from the batch of 100 women 30 women are selected at random. What is the probability of atleast 20 women being malnourished? (10)
- Q.8 Write elaborate notes on any **TWO** of the following: (10)
- a) Chi-square test
 - b) Scatter diagram
 - c) Randomization

* * *

M- Pharm - Semi - I / 2015

AMAZON/KARNAFULI/PARANA/SURAMA/SINHAGAD

SIYANA - I (CBCS) : SUMMER - 2015

SUBJECT : ELECTIVE - I : PHARMACEUTICAL ADMINISTRATION

Day : Wednesday
Date : 08-07-2015

Time : 10:00AM TO 1:00PM.
Max. Marks : 60

N.B.

- 1) Attempt any **THREE** questions from Section - I and Section - II each.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1** Discuss various types of plans and planning process. (10)
- Q.2** Discuss departmentalization in detail. (10)
- Q.3** Enumerate various steps involved in staffing. Discuss performance appraisal and career strategy in detail. (10)
- Q.4** Write elaborate notes on any **TWO** of the following: (10)
- a) Formal and informal organizations
 - b) Manager development process and training
 - c) Management by objective (MBO)

SECTION - II

- Q.5** Discuss McClelland's needs theory in detail. (10)
- Q.6** Discuss productivity problems and their measurement in detail. (10)
- Q.7** Discuss feed back and feed forward controls in detail. (10)
- Q.8** Write elaborate notes on any **TWO** of the following: (10)
- a) Human factors in managing
 - b) Preventive control
 - c) Basic control process

* * *

Day : Friday
Date : 09-01-2015

Time : 10:00 AM TO 1:00 P.M.
Max. Marks : 60

N.B.:

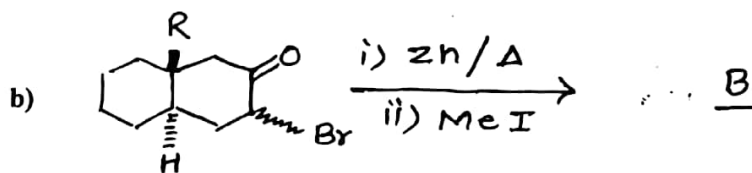
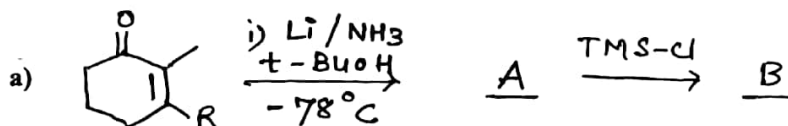
- 1) Attempt any **THREE** questions from Section-I and any **THREE** questions from Section-II.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Answers to both sections should be written in **SEPARATE** answer books.

SECTION-I

- Q.1 Describe protection and deprotection strategies for -OH and carbonyl groups. (10)
- Q.2 Explain the principle, various methods and advantages of catalysis by enzymes. (10)
- Q.3 a) Discuss the mechanism of homogeneous reduction. (05)
b) Give applications of metal-ammonia reductions in synthetic chemistry. (05)
- Q.4 Write short notes on any **TWO** of the following: (10)
a) Bayer - Villiger reaction
b) Clemmenson's reaction
c) Curtius rearrangement.

SECTION-II

- Q.5 Describe Fischer indole and Modelung indole synthesis. (10)
- Q.6 Discuss stereo-selective and stereo-specific formation of enolate anions citing examples (10)
- Q.7 Complete the following reactions giving reaction mechanism and major products. (10)



- Q.8 Write short notes on any **TWO** of the following: (10)
a) HOMO conservation of orbital symmetry.
b) Preparation of α -methylene lactone.
c) Role of Li in regioselective formation of enolate anions.

* * *

SIYANA - I (CBCS) : WINTER - 2014 (2012 Course)
SUBJECT : ADVANCED QUALITY ASSURANCE TECHNIQUES - I

Day : **Friday**
Date : **09-01-2015**

Time : **10:00AM-TO 1:00PM.**
Max. Marks : 60

N.B.

- 1) Attempt any **THREE** questions from Section – I and Section – II each.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1** Discuss personnel hygiene and clothing requirements with reference to cGMP. (10)
- Q.2** Discuss various requirements of pharmaceutical equipment. (10)
- Q.3** Discuss principles involved in purchasing material for pharmaceutical manufacturing. (10)
- Q.4** Write elaborate notes on any **TWO** of the following: (10)
- a) Reference and working standards
 - b) Outsourcing of analytical services
 - c) Washing and toilet facilities

SECTION – II

- Q.5** What are the basic concepts of QA and QC? (10)
- Q.6** Discuss control of mix-ups and cross contamination. (10)
- Q.7** Discuss WHO requirements of documentation in detail. (10)
- Q.8** Write elaborate notes on any **TWO** of the following: (10)
- a) Pharmaceutical product distribution
 - b) Recalled, returned and rejected goods
 - c) Expiration dating

* * *

KARNAFULI - I (CBCS): WINTER - 2014
SUBJECT: ADVANCED PHARMACOLOGY - I

(2012 Course)

Day: Friday
Date: 09-01-2015

Time: 10:00 AM TO 1:00 P.M.
Max. Marks: 60

N.B.:

- 1) Attempt ANY THREE questions from Section – I and Section – II each.
- 2) Each section should be written in SEPARATE answer books.
- 3) Figures to the right indicate FULL marks.

SECTION – I

- Q.1** Discuss the regulations for laboratory animal care. Explain the role of IAEC in the animal experiments. (10)
- Q.2** Describe in detail the pre-clinical evaluation methods for anti-convulsants. (10)
- Q.3** Describe in detail the pre-clinical evaluation methods for anti – hypertensive agents. (10)
- Q.4** Write short notes on ANY TWO of the following: (10)
- a) High throughput screening
 - b) Organization of safety assessment tests
 - c) Screening of analgesics

SECTION - II

- Q.5** Explain in detail the preclinical evaluation methods for bronchodilators. (10)
- Q.6** Explain in detail the preclinical evaluation methods for anti-diabetic agents. (10)
- Q.7** Explain in detail the preclinical evaluation methods for diuretics. (10)
- Q.8** Write short notes on ANY TWO of the following: (10)
- a) *In vitro* testing of drugs
 - b) Applications and Limitations of transgenic animals
 - c) Preclinical screening of androgens

* * * * *

AMAZON-I (2012 COURSE – CBCS) | WINTER - 2014
SUBJECT ADVANCE CORE SUBJECT-I – ADVANCED PHARMACEUTICS-I

Day : **Friday**
Date : **09-01-2015**

Time : **10:00 AM TO 1:00 P.M.**
Max. Marks : 60.

N.B.:

- 1) Answer any **THREE** questions from Section-I and any **THREE** questions from Section-II.
- 2) Both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.

SECTION-I

- Q.1** Explain the principle and instrumentation of DSC. Add a note on its application to determine T_g of polymer. (10)
- Q.2** Explain the Box Behenken approach for optimization of pharmaceutical formulation. (10)
- Q.3** Give an account of different mathematical models to describe dissolution kinetics. (10)
- Q.4** Write notes on: (10)
- a) Stability testing of biotechnological formulations as per ICH guidelines
 - b) Polymorphism and its significance.

SECTION-II

- Q.5** Describe the mathematical models for compact evaluation. (10)
- Q.6** What are dendrimers? Elaborate on their pharmaceutical applications. (10)
- Q.7** Explain the thermodynamic aspects of polymer solutions. (10)
- Q.8** Write notes on: (10)
- a) Mechanism of biodegradation
 - b) Liquid crystalline phase and methods to identify the same.

* * *

SINHAGAD-I : (CBCS): WINTER - 2014 (2012 Course)
SUBJECT: ADVANCED PHARMACEUTICAL BIOTECHNOLOGY-I

Day: Friday
Date: 09-01-2015

Time: 10:00AM TO 1:00 P.M.
Max Marks: 60

N.B:

- 1) Attempt any **THREE** questions from Section-I and Section-II each.
- 2) Both the sections should be written in **SEPARATE** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Discuss central Dogma of molecular biology and describe how DNA controls the cellular metabolism. (10)
- Q.2** Describe how DNA is packaged into chromosome; elaborate the role of Histone proteins in process of gene expression. (10)
- Q.3** Explain in details semi-conservative model of DNA replication. (10)
- Q.4** Write short notes on: (ANY TWO) (10)
- a) Promoter
 - b) Alternate splicing
 - c) Transposable elements

SECTION-II

- Q.5** What is a PCR? Explain how DNA is amplified during PCR. (10)
- Q.6** Define a cDNA library. Write its significance in studying gene expression pattern. (10)
- Q.7** Write an essay on a recombinant DNA technology. Outline a protocol to produce recombinant insulin. (10)
- Q.8** Write short notes on: (ANY TWO) (10)
- a) Hot-start PCR
 - b) Phage display
 - c) Reverse transcriptase enzyme

* * * * *

Day : Monday
Date : 12-01-2015

Time : 10:00AM TO 1:00PM.
Max. Marks : 60

N.B.

- 1) Attempt any **THREE** questions from Section - I and Section - II each.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1** Discuss various function of management in detail. (10)
- Q.2** Discuss structure and process of organizing. (10)
- Q.3** Discuss process of decision making in detail. (10)
- Q.4** Write elaborate notes on any **TWO** of the following: (10)
- a) Performance appraisal of staff
 - b) Management social responsibilities
 - c) Human resource management

SECTION - II

- Q.5** Discuss human factors in managing in detail. (10)
- Q.6** How will you control and improve productivity? (10)
- Q.7** Discuss Abraham Maslow's theory of motivation. (10)
- Q.8** Write elaborate notes on any **TWO** of the following: (10)
- a) Control of overall performance
 - b) Communication process
 - c) Basic control process

* * *

PARANA / SINHAGAD/AMAZON/KARNAFUL/SURAMA/SIYANA - I
(2012 COURSE) (CBCS) : WINTER - 2014
SUBJECT : ADVANCED PHARMACEUTICAL ANALYSIS

Day : Wednesday
Date : 14-01-2015

Time : 10:00AM TO 1:00 P.M.
Max. Marks : 60

N. B. :

- 1) Attempt ANY THREE questions from Section - I and Section - II each.

SECTION - I

- Q. 1 Discuss the principle of NMR and explain chemical shift and spin - spin splitting in detail with suitable examples. (10)
- Q. 2 Discuss the fragmentation pattern involved in the mass spectrometry in detail. (10)
- Q. 3 Discuss the instrumentation involved in HPLC in detail with special attention to HPLC columns. (10)
- Q. 4 Write an elaborate note on: (10)
- a) Applications of HPTLC
 - b) Detectors in GLC

SECTION - II

- Q. 5 Write a detailed note on applications of super critical fluid chromatography. (10)
- Q. 6 Write a brief note on immunoassays and explain radio immunoassay in detail. (10)
- Q. 7 Write a note on : (10)
- a) Applications of DTA
 - b) Types of sources of X-rays
- Q. 8 Discuss the instrumentation and applications of TGA. (10)

* * * * *

SINHA GAD / AMAZON / PARANA / KARNAFULI / SURAMA / SIYANA - I

(CBCS): SUMMER - 2015

SUBJECT: ADVANCED PHARMACEUTICAL ANALYSIS

Day: Wednesday
Date: 01-07-2015

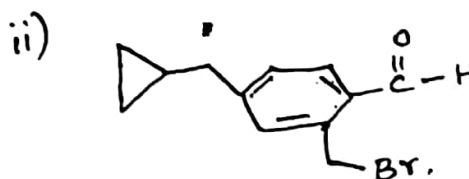
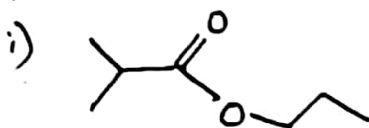
Time: 10:00AM TO 1:00PM.
Max. Marks: 60

N.B.:

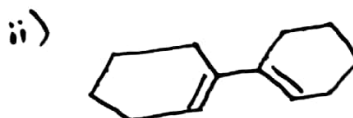
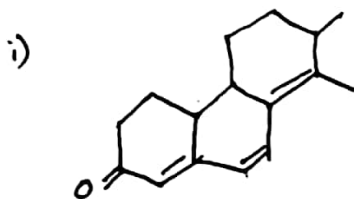
- 1) Attempt any **THREE** questions from Section -I and section -II each.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Answer to both the section should be written in **SEPARATE** answer books.
- 4) Draw neat diagrams **WHEREVER** necessary.

SECTION-I

Q.1 a) Assign the chemical shifts and multiplicities for the following compounds. (10)



b) Calculate the λ_{max} for the following compounds.



Q.2 Deduce the structure of a compound having following spectral data: (10)

Molecular Weight: 98

IR (cm^{-1}): 3429, 3385, 2900, 2210, 1660, 1620

$^1\text{H NMR}$ (δ ppm): δ 2.14 (t, 9.8 squares)

3.40 (t, 9.6 squares)

4.03 (s, 10 squares)

Q.3 Discuss the sources of Band Broadening in view of van deemter equation. (10)

P. T. O.

- Q.4** Write elaborate notes on: (10)
- a) HPLC columns
 - b) GC- MS

SECTION-II

- Q.5** Write a detailed note on Radioimmuno assay. (10)
- Q.6** Write a detailed note on : (10)
- i) Chiral chromatography
 - ii) Ion pair chromatography
- Q.7** Discuss the instrumentation and applications of TGA. (10)
- Q.8** Write a note on: (10)
- a) Detectors used in XRD instruments
 - b) Applications of DSC

* * * *