M. PHARMACY FIRST YEAR SECOND SEMESTER – 2018

PHARMACEUTICAL CHEMISTRY – III

Time : 3 hours **Full Marks 100**

Answer any five questions taking at least TWO from each group. Answers to all parts of a question should be written in the same place.

Group A

1. In regard to quality and validation of regression based QSAR models, discuss the definition and significance of the followings: [2 x 10

   (i) Q^2_{LOO}
   (ii) $Q^2_{ext\_F1}$
   (iii) $Q^2_{ext\_F2}$
   (iv) $Q^2_{ext\_F3}$
   (v) MAE
   (vi) RMSE
   (vii) Variance ratio
   (viii) Standard error of estimate
   (ix) Adjusted R^2
   (x) PRESS

2. Discuss the algebraic methods of matrix multiplication and inversion. How do you use these theories in deriving the beta-coefficients of an MLR equation? [10+10

3. How can you reduce the number of unknowns in a classical Free-Wilson type problem? Explain with examples. What are the advantages and disadvantages of such mathematical models? [12+8

4. Write notes on: [4 x 5
   (i) PLS regression
   (ii) Normal sigma
   (iii) Swain and Lupton theory of electronic substituent constants
   (iv) Effective Charton parameter

Ref.No.: Ex/ PG/ PHAR/T/128E/2018

Name of the Examinations: M.PHARMACY FIRST YEAR SECOND SEMESTER- 2018

Subject : PHARMACEUTICAL CHEMISTRY- III Time: THREE HOURS Full Marks : 100

GROUP - B

Answer any five questions taking at least two from each group

Q.5.a) What is reductive amination step in a synthetic process? Outline one newer drug synthesis involving this step. 2+6

b) What is de-benzylation process? How it is carried out? Outline one newer drug synthesis involving this step. 1+2+5

c) Outline the synthesis of a newer drug used in the treatment of Alzheimer disease. 4

Q.6.a) Derive S.A.R. points of Prostaglandines. Classify Prostaglandine derivatives based on S.A.R. 4+4

b)Show biosynthetic pathways for converting prostaglandin precursors to different therapeutic categories of derivatives. 4

c) Outline the synthesis of PGE-I using Wittig's reagent 8

Q.7.a) What are fused ring system and bridged ring system in stereochemistry? Give examples and draw structures accordingly. 2+2

b) Outline the synthesis of Cholanic and allo-Cholanic acid.What stereochemical information we can derive from these products. 6+2

c) Explain Auwer's- Skita rule and the generalized observations related to conformational analysis of steroids. 3+5

Q.8.a) Outline the synthesis of one newer drug each from the categories mentioned below

I) General Anesthetics ii) Sedative-Hypnotic iii)Anti- epileptic iv) Anti-psychotic 5x4