Reg. No.										

MANIPAL UNIVERSITY

M. PHARM. PART–I DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: INDUSTRIAL PHARMACY (PCE 601)

(SPECIALIZATION: PHARMACEUTICS)

Thursday, May 26, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

✍ **Answer all the Questions.**

1A. Define TQM and explain its principles in Pharmaceutical Industry.

1B. Discuss the pilot plant scale up technique for Liquid orals.

(10+10 = 20 marks)

2A. Explain preformulation studies for parenterals.

2B. Define effervescent tablet and mention the types of raw materials used and explain the formulation of effervescent tablet.

(10+10 = 20 marks)

3A. Define Vendors. Explain the evaluation of Vendors in Pharmaceutical Industry.

3B. Explain the causes and prevention of Chemical hazards in Pharmaceutical Industry.

(10+10 = 20 marks)

4A. Mention different types of Plant sites with their advantages and disadvantages.

4B. Explain effluent testing.

(10+10 = 20 marks)

5A. Define Optimization. Mention different optimization technique used in Pharmaceutical Industry and explain Optimization parameters.

5B. Write short note on:

i) ISO 9000

ii) ICH guidelines for stability studies

(10+(5+5) = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

M. PHARM. PART–I DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: BIOPHARMACEUTICS AND PHARMACOKINETICS (PCE 602)

(SPECIALIZATION: PHARMACEUTICS/ PHARM. QUALITY ASSURANCE)

Saturday, May 28, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

Answer ALL questions.

1A. What manufacturing process variables may affect drug absorption and bioavailability from dosage forms? State the influence of compression force on dissolution rate.

1B. Describe the drug characteristics influencing their renal excretion. How pH of the urine can be modified to alter tubular reabsorption?

(10+10 = 20 marks)

2A. Describe the two methods for calculating Ke from urinary excretion data.

2B. Why are phase I reactions called functionalisation reactions? Explain phase I oxidation of carbon-hetero atom systems.

2C. What is the similarity between glucuronidation, sulfation and methylation reactions? How does conjugation with amino acids differ from them? What aspect of conjugation with amino acids can be put to diagnostic use?

(10+5+5 = 20 marks)

3A. Discuss with advantages and disadvantages the various methods of bioequivalence experimental study design.

3B. Describe the non compartment model. How would you calculate the mean residence time, AUC and AUMC?

3C. The equation that best fits the plasma level time curve of an antibiotic drug after a iv bolus dose of 2000mg is $C = 143e^{-0.87t}$. Calculate volume of distribution and $t_{1/2}$.

(10+5+5 = 20 marks)

4A. What process of drug ADME are known to show non linearlty? Give examples.

4B. Write a note on factors influencing biliary excretion of drugs.

4C. How would protein binding affect volume of distribution and pharmacokinetics of drug? Explain.

(10+5+5 = 20 marks)

5A. What factors determine rate of absorption from a) intra muscular sites b) nasal route c) buccal route d) transdermal site

5B. How is find renal function determined? How dose adjustment is done in renal failure?

5C. A 50 mg i.v bolus dose of a drug which, upon administration showed first order elimination gave the following data: C_0 = 1mcg/ml $t_{1/2}$ 6 hrs. Calculate renal clearance of the drug.

5D. What are the various levels of *in vitro-in vivo* correlations?

(10+3+2+5 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

M. PHARM. PART–I DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: ADVANCES IN DRUG DELIVERY SYSTEMS (PCE 603)

(SPECIALIZATION: PHARMACEUTICS)

Tuesday, May 31, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

✍ **Answer all the questions.**

1A. What is the principle involved in coacervation/phase separation method of microencapsulation? Explain any ONE approach for coacervation/ phase separation method.

1B. Discuss the various system parameters to be considered in the design of controlled release drug delivery.

(10+10 = 20 marks)

2A. Write a note on the ion exchange based oral drug delivery systems.

2B. Explain the different types of mucous membrane models to study mucosal drug delivery.

(10+10 = 20 marks)

3A. What are the different ocular controlled drug delivery systems? Explain any TWO systems in detail.

3B. Explain the mechanisms of drug permeation through skin.

(10+10 = 20 marks)

4A. Discuss the various approaches for the development of subdermal implants.

4B. Describe a method in detail to prepare magnetic microspheres.

(10+10 = 20 marks)

5A. Describe the models used in the study of transdermal delivery of drugs.

5B. Discuss the evaluation of liposomal drug carrier systems.

(10+10 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

M. PHARM. PART–I DEGREE EXAMINATION – MAY/JUNE 2011

SUBJECT: COSMETIC TECHNOLOGY (PCE 604)

(SPECIALIZATION: PHARMACEUTICS)

Thursday, June 02, 2011

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

✍ **Answer all the Questions.**

1A. Explain about different types of surfactant and its role in cosmetic products.

1B. Mention five cosmeceuticals and explain its role.

(10+10 = 20 marks)

2A. Write about the types of eye makeup used for enhancing the eyes.

2B. Write the composition of a shampoo. Mention the function of each ingredient and discuss the evaluation of shampoos.

(10+10 = 20 marks)

3A. Explain the different types of packaging materials used for cosmetic products.

3B. Discuss regulatory systems governing cosmetic products in India.

(10+10 = 20 marks)

4A. Describe the composition of Tooth Paste.

4B. Explain accelerated stability study on cosmetic product.

(10+10 = 20 marks)

5A. What are the sources for contamination in cosmetic products?

5B. Write short note on:

i) Shaving soaps

ii) Sun screen products.

(10+(5+5) = 20 marks)