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CC—05—2017

FACULTY OF PHARMACY

B.Pharm. (Second Year)(Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

PHYSICAL PHARMACEUTICS

Paper BPH-41

(Wednesday, 12-4-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time— Two Hours

Maximum Marks—50

- N.B. :- (i) All questions are compulsory.
(ii) Figures to the right indicate full marks.
(iii) Draw neat labelled diagram wherever necessary.

1. Solve any *five* of the following :

5×2=10

- Define Rheology and Thixotropy.
- What is gold No. ?
- What is Carr's index ?
- What is order of reaction ?
- What is steady state diffusion ?
- Define stability.
- What is specific viscosity ?

2. Solve any *four* of the following :

4×3=12

- Give principle of determination of relative viscosity of liquid by Ostwald viscometer.
- Give advantages, disadvantages and required conditions for sedimentation method of particle size measurement of given sample of powder.
- Define diffusion and explain Fick's first law of diffusion.
- What is auto-oxidation ? How we can prevent auto-oxidation to enhance stability of dosage form ?

P.T.O.

- (e) Explain zero order reaction in detail.
- (f) Explain kinetic properties of colloid.
3. Solve any *four* of the following : 4×7=28
- (a) Explain determination of particle size of given powder sample by using sieving method.
- (b) Explain in brief about Newtonian and Non-Newtonian system of flow of liquid.
- (c) Define colloid and explain DLVO Theory.
- (d) Explain first and second order of reaction in detail.
- (e) Enlist factors affecting stability of drug and explain effect of temperature on stability of dosage form.
- (f) Define dissolution and explain apparatus related factors affecting dissolution process.

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CC—11—2017

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharm. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

STERILIZATION AND DISINFECTANTS

(Monday, 17-4-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time— Two Hours

Maximum Marks—50

N.B. :- (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. Solve any *five* of the following : 5x2=10

(a) Name *four* filters used in filtration sterilization.

(b) Define :

(i) Sanitization

(ii) Preservatives.

(c) What is HEPA filter ?

(d) Define :

(i) Z-value;

(ii) Bioburden determination.

(e) Enlist different air sampling methods.

(f) Give the ideal properties of Disinfectant.

(g) What is DOP test ?

2. Solve any *four* of the following : 4x3=12

(a) Enlist different factors affecting the disinfectant activity. Explain any *one*.

(b) Discuss assessment of microbial contamination and spoilage.

(c) List of various sources of microbial spoilage. Explain any *one*.

P.T.O.

- (d) Discuss surface sampling method for testing aseptic area.
- (e) Explain Radiation sterilization.
- (f) What is sterility testing ? Explain culture media are used for sterility testing.

3. Solve any *four* of the following :

28

- (a) What is disinfectant ? Explain chemical classification of disinfectants.
- (b) Describe Gaseous sterilization with its mechanism.
- (c) Discuss the factors which affect on preservative efficiency.
- (d) Describe physical chemical and biological indicators of sterilization monitors.
- (e) Explain design construction and production facilities used in aseptic area.
- (f) What is evaluation of disinfectants ? Explain the following terms :
 - (i) Filter paper
 - (ii) Ditch-plate method
 - (iii) Kelsey Sykes method.

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CC—17—2017

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharma. (Fourth Semester) EXAMINATION

APRIL/MAY, 2017

CLASSICAL ANALYTICAL TECHNIQUES.

(Friday, 5-5-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—50

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Answer to the point.

1. Solve any five of the following :

5×2=10

- (a) What is oxidation and reduction ?
- (b) Define chelating agents with example.
- (c) Enlist the indicators used in non-aq. titration.
- (d) Give the primary standard substance used in standardization of HCl and NaOH.
- (e) Name the indicators used in Mohr's and Volhard's method.
- (f) Define universal indicator with example.
- (g) Define self indicator in Rodox titrations.

2. Solve any four of the following :

4×3=12

- (a) Define masking and demasking agents with example.
- (b) Differentiate between iodometric and iodimetric titration.
- (c) Define non-aq. titration. Classify non-aq. solvents with examples.
- (d) Give the procedure and factor calculation for assay of Aspirin as per IP.
- (e) Explain the types of EDTA titrations.
- (f) Define acids and base according to the Lewis and Bronsted theory.

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3. Solve any *four* of the following :

4×7=28

- (a) Give the principle and procedure for preparation and standardization of disodium EDTA. Calculate stoichiometric factor.
- (b) Discuss in detail Fajan's method.
- (c) Define law of mass action. Derive the equation for determination of pH range for acid and base.
- (d) Define diazotization titration. Give the procedure for preparation and standardization of 0.1 N NaNO_2 .
- (e) What are complexometric titration ? Discuss in detail metallochrome indicators used in detection of End point.
- (f) What is Cerimetry ? Give theory and procedure for preparation and standardization of 0.1 M cerium (IV) sulphate.

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CC—23—2017

FACULTY OF PHARMACEUTICAL SCIENCE

B. Pharmacy (Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

ORGANIC CHEMISTRY-IV

Paper (BPH-44)

(Friday, 21-4-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time— Two Hours

Maximum Marks—50

- N.B. :-*
- (i) All questions are compulsory.
 - (ii) Discuss the reaction, mechanism and stereochemistry wherever necessary.
 - (iii) Draw correct structure and diagram wherever necessary.

1. Solve any *five* : 5×2=10
- (a) Define stereo selective reaction.
 - (b) Define with example stereogenic centre.
 - (c) What is biodegradable polymer ?
 - (d) What is out-in isomerism ?
 - (e) Draw the structure of Newman projection formula of Ethane.
 - (f) Write down *two* examples of E & Z isomerism
 - (g) Define geometrical isomerism.

2. Solve any *four* : 4×3=12
- (a) Write down examples of cis-trans isomers resulting from :
 - (i) Monocyclic compounds
 - (ii) Fused ring compounds
 - (iii) Oximes.

P.T.O.

(b) Explain :

- (i) Plane of symmetry
- (ii) Center of symmetry
- (iii) Axis of Symmetry.

(c) Why chair conformation is more stable than boat conformation ?

(d) Define co-polymerization and write classification of polymer based on polymerization processes.

(e) Explain any *three* methods of resolution of racemic mixture.

(f) Write C.I.P. system of nomenclature for one chiral centre.

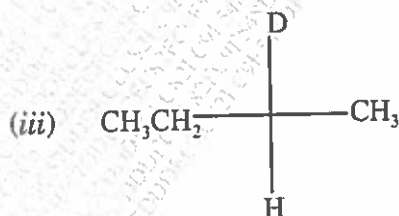
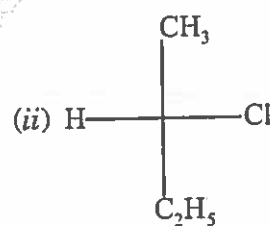
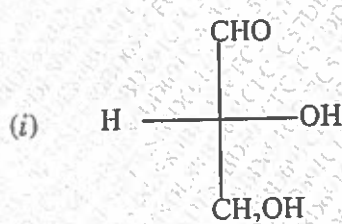
3. Solve any *four* :

4×7=28

(a) Explain with examples :

- (i) Sawhorse projection
- (ii) Newman projection
- (iii) Flying wedge formula
- (iv) Fischer projection.

Assign R or S configuration of the following compounds (3 M) :



- (b) Write down classification of polymers on the basis of sources, structure and molecular mass.
- (c) Explain Baeyer strain theory of cyclohexane and define with examples :
- (i) Stereospecific reaction
 - (ii) Chirality.
- (d) What are Biopolymer ? Explain Biodegradable polymers with examples.
- (e) What is elements of symmetry ? Explain with their types.
- (f) Explain conformational analysis of *n*-butane with energy profile curve.



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CC-29-2017

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B. Pharm. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

FUNDAMENTALS OF PHARMACOLOGY

Paper BPH-45

(Monday, 24-4-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—50

N.B. :— (i) All questions are compulsory.

(ii) Answer to the point only.

(iii) Illustrate your answer with neat sketches wherever necessary.

1. Answer any five of the following :

5x2=10

(a) Define :

(i) Pharmacokinetics

(ii) Pharmacodynamics.

(b) Define receptors and enlist various cholinergic receptors.

(c) Write advantages and disadvantages of enteral route of drug administration.

(d) Define drug elimination.

(e) Define :

(i) Affinity

(ii) Intrinsic activity.

(f) Define the terms therapeutic index and LD₅₀.

(g) Write therapeutic uses of propranolol.

2. Answer any four of the following :

4x3=12

(a) Write the theories of Drug Receptor Interactions.

(b) What is local anaesthetics. Give its examples and enlist the various techniques of its administration.

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- (c) Define drug distribution and explain placental barrier.
- (d) Define drug metabolism and entlist factors affecting drug metabolism.
- (e) What is excretion ? Explain any *two* non-renal routes of drug excretion.
- (f) Explain drug tolerance considering one examples.

3. Answer any *four* of the following :

4×7=28

- (a) Define Parasympatholytic Agents and Give Pharmacology of Atropine.
- (b) Define absorption and write mechanism of drug absorption across plasma membrane.
- (c) What are sympathomimetic Agents, classify it with examples and explain pharmacology of Epinephrin.
- (d) Explain the pharmacology of β -blockers.
- (e) What is drug Interactions ? Explain various mechanism of Drug Interactions.
- (f) Give an account over steps involved in development of New Drug.

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CC—35—2017

FACULTY OF PHARMACEUTICAL SCIENCE

B. Pharm. (Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

PATHOPHYSIOLOGY OF DISEASES

Paper BPH-46

(Wednesday, 26-4-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—50

N.B. :— (i) All questions are compulsory.

(ii) Draw neat labelled diagram wherever necessary.

(iii) Figures to the right indicate full marks.

1. Answer the following (any five) : 5×2=10

- (a) Give causes and treatment of diarrhoea.**
- (b) Differentiate between benign and malignant tumor.**
- (c) Write causes and symptoms of Asthma.**
- (d) Write pathogenesis of Goitre.**
- (e) Give causes and clinical manifestation of Govt.**
- (f) Write etiology and treatment of vulvovaginitis.**
- (g) Write cilinical manifestation and treatment of types of epilepsy.**

2. Answer the following (any five) : 5×2=10

- (a) Explain pathophysiology and treatment of czohns disease and ulcerative celitis.**
- (b) Discuss etiology, pathophysiology and treatment of cirrhosis.**
- (c) Discuss pathophysiology of cronic obstructure palmonary disease.**
- (d) Give pathogenesis and treatment of schizophrenia.**
- (e) Write etiology and pathogenesis of chronic renal failure.**
- (f) Explain pathophysiology clinical manifestation and treatment of Rheumatoid arthritis.**

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3. Answer the following (any four) :

4×7=28

- (a) Explain etiology, pathophysiology, sign, symptoms and treatment of peptic ulcer.
- (b) Discuss in detail etiology and pathophysiology of viral hepatitis.
- (c) Describe in detail etiology, pathophysiology and treatment of erectile dysfunctions.
- (d) Explain pathophysiology and treatment of diabetes mellitus.
- (e) Discuss in detail about urinary tract infection pathophysiology with treatment.
- (f) Explain pathophysiology and treatment of Parkinsonism.

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CC—40—2017

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B. Pharm. (Second Year) (Fourth Semester) EXAMINATION

MARCH/APRIL, 2017

UNIT OPERATION IN PHARMACEUTICAL TECHNOLOGY

Paper BPH-47

(Friday, 28-4-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—50

N.B. :— (i) All questions are compulsory.

(ii) Draw a well-labelled diagram wherever necessary.

(iii) Figures to the right indicate full marks.

1. Solve any five of the following :

5×2=10

(a) Define :

(i) Conduction

(ii) Convection.

(b) Write application of Evaporation.

(c) Enlist classification of dryer.

(d) What is crystal lattice and crystal Habit ?

(e) Give the Raoult's law.

(f) What are the types of corrosion ?

(g) Which are the points or data obtained in humidity charts.

2. Solve any four of the following :

4×3=12

(a) How can fire hazards be avoided ?

(b) Enlist types of Heaters, Give construction, working of tubular heater.

(c) Write principle, construction of simple distillation.

(d) Write factors affecting on Evaporation.

(e) Give the theories of drying.

(f) Write factors affecting on caking. How is caking prevented ?

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3. Solve any *four* of the following :

4×7=28

- (a) Discuss in brief about mechanism of crystallization.
- (b) Describe in detail about drum dryer.
- (c) Write construction, working, advantage and disadvantage of fractional distribution.
- (d) Discuss in brief about Evaporating Pan.
- (e) What is Conduction, Convection, Radiation and Black body, Grey body ?
- (f) Enlist types of hazards. Explain about chemical hazards.

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CC-44-2017

FACULTY OF PHARMACEUTICAL SCIENCE
B. Pharm. (Fourth Semester) EXAMINATION

MAY/JUNE, 2017

CALCULUS AND BIOSTATISTICS

(Tuesday, 2-5-2017)

Time : 2.00 p.m. to 4.00 p.m.

Time—Two Hours

Maximum Marks—50

N.B. :- (i) All questions are compulsory.

(ii) Use of non-programmable calculator is permitted.

(iii) Figures to the right indicate full marks.

(iv) Use suitable data if necessary.

1. Solve any five of the following : 5x2=10

(a) Show that matrix $A = \begin{bmatrix} 2 & 4 \\ 3 & 6 \end{bmatrix}$ is a singular matrix.

(b) Calculate S.D. of :
12, 13, 8, 7, 9, 11

(c) Evaluate :
 $\int \log 2x \, dx$.

(d) Write the statement of Rolle's theorem.

(e) Calculate quartile deviation and coefficient of quartile deviation if :
 $Q_1 = 2.75$ and $Q_3 = 9.25$

(f) Solve :
 $\frac{d^2y}{dx^2} + 4 \frac{dy}{dx} + 4y = 0$.

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(g) Evaluate :

$$\int_0^1 (x^3 + 3x^2 + 2x + 1) \, dx$$

2. Solve any four of the following : 4x3=12

(a) Find nth derivative of $e^x \cos x$ by Leibnitz theorem.

(b) Calculate mode from the following data :

Class	Frequency
0-6	3
6-12	9
12-18	15
18-24	21
24-30	27

(c) Solve :

$$x \frac{dy}{dx} + y = x^2$$

(d) Calculate standard deviation from the following :

Class	Frequency
0-10	14
10-20	23
20-30	27
30-40	21
40-50	15

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(e) Evaluate :

$$\int (\log x)^2 dx.$$

(f) If

$$y = x \cos(\log x)$$

then prove that :

$$x^2 y_1 + x y_2 + y_1 = 0.$$

3. Solve any four of the following :

4 × 7 = 28

(a) Evaluate $\int \operatorname{cosec}^2 x$ and hence evaluate

$$\int \operatorname{cosec}^2 x dx$$

by reduction formula.

(b) Solve :

$$\frac{d^2y}{dx^2} - 5 \frac{dy}{dx} + 6y = x.$$

(c) Verify Cayley Hamilton theorem and find A^{-1} if :

$$A = \begin{bmatrix} 2 & 3 \\ -4 & 5 \end{bmatrix} \quad \begin{bmatrix} 9 & 3 \\ -5 & 12 \end{bmatrix}$$

(d) In an orchard of 1000 trees a record was taken of the no. of shaded and unshaded trees were as follows :

	Shaded	Unshaded
High yielder	350	205
Low yielder	250	195

Show that the shade has any effect on the yield of the trees.

$$(\chi^2 = 3.841)$$

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(e) Find mean and mean deviation from the following data :

Class	Frequency
0-10	5
10-20	8
20-30	15
30-40	16
40-50	6

(f) Solve the following equations by Cramer's rule :

$$x + y + 4z = 4$$

$$2x + 3y + 6z = 5$$

$$-3x + 2y + z = -4$$

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