PURUS-III (SEMESTER PATTERN): APRIL/MAY: 2010
SUBJECT: PHYSICAL PHARMACY- II

Day: Thursday | Time: 2:00 P.M. TO 5:00 P.M.
Date: 13-05-2010 | Max. Marks: 80

N.B:

1) Q. No. 1 and 5 are **COMPULSORY,** out of the remaining attempt **ANY TWO** questions from each section.
2) Answers to the two sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.
4) Draw neat labeled diagram wherever necessary.

SECTION-I

Q.1 Answer the following any **FIVE** of the following: **(10)**

a) Pseudoplastic systems are known as shear thinning systems. Why?
b) What is surface free energy? Give its significance.
c) Define and differentiate between streaming potential and sedimentation potential.
d) Newtonian systems are known as single point analysis systems. Why?
e) Give the pharmaceutical applications of colloids.
f) Give the significance of Zeta Potential in Pharmaceuticals.

Q.2 a) What are the different methods to determine surface tension and interfacial tension? Explain the method to determine interfacial tension in detail. **(07)**

b) Discuss the stability of colloids in deta... **(08)**

Q.3 a) What are Bingham Bodies? With the help of rheogram compare Bingham bodies with other non- Newtonian Systems. **(07)**

b) Derive the equation for Langmuir's adsorption isotherms and illustrate the different BET adsorption isotherms? **(08)**

Q.4 Write short notes on **ANY TWO** of the following: **(15)**

a) HLB and its applications
b) Donnan membrane equilibrium
c) Voigt and Maxwell element and its significance

SECTION-II

Q.5 Answer the following any **FIVE** of the following: **(10)**

a) State the factor affecting crystal habit.
b) What is Bancroft's rule?
c) State stokes law of sedimentation and give its significance.
d) What are the factors affecting selection of emulsifier?
e) Differentiate between flocculated and deflocculated suspension.
f) Explain the different types of densities with equations.

Q.6 a) Give a detailed account of stabilization of emulsions. **(08)**

b) Explain the sedimentation method for determination of particle size. **(07)**

Q.7 a) What is x- Ray diffraction? Derive Bragg's Equation and give its significance. **(08)**

b) Define specific surface area. How is surface area of powder sample determined? **(07)**

Q.8 Write notes on **ANY TWO** of the following: **(15)**

a) Structured Vehicles
b) Coulter counter method
c) Polymorphism

PURUS – IV: APRIL/MAY-2010 (Semester Pattern)
SUBJECT: PHARMACEUTICAL MICROBIOLOGY
(INCLUDING IMMUNOLOGY) – II

Day: Friday
Date: 14-05-2010

Time: 2.00 P.M. To 5.00 P.M.
Max. Marks: 80

N.B.:

1) **Q.** No. **1** and **5** are **COMPULSORY**. Out of remaining attempt any **TWO** questions from Section – **I** and **TWO** questions from Section – **II.**
2) Both the sections should be written in **SEPARATE** answer book.
3) Figures to the right indicate **FULL** marks.
4) Neat diagrams must be draw wherever necessary.

SECTION – I

Q.1 **A)** Answer any **THREE** of the following: **(06)**

a) How will you detect presence of *Salmonella* in pharmaceuticals?
b) Write advantages and disadvantages of microbial assays.
c) List different factors affecting the microbial spoilage.
d) Draw the flow sheet for production of tetracycline.

B) Fill in the blanks: **(04)**

a) Microbial limit of aluminum hydroxide gel for total viable count is less than _____.
b) Bismuth sulphite medium is used for the growth of _____.
c) Titrimetric and _____ methods are used for assay of cyanocobalamin.
d) _____ is an extra cellular enzyme produced by most of *Bacillus* species, which hydrolyzes penicillin to penicilloic acid.

Q.2 **a)** What are microbial assays? Write in detail assay of streptomycin. **(08)**

b) Explain different techniques used for strain improvement. **(07)**

Q.3 Explain the techniques used for counting of microorganisms in pharmaceuticals as per microbial limit test. **(15)**

Q.4 Write a note on any **THREE** of the following: **(15)**

a) Down stream process
b) Preservative efficacy test
c) Air – lift fermentor
d) Production of Vit. B_{12}

P.T.O.

SECTION - II

Q.5 A) Answer any **THREE** of the following: **(06)**

a) What are mixed vaccines?
b) Differentiate between exotoxins and endotoxins.
c) Define:
  i) Hapten
  ii) Adjuvant
d) What are B and T lymphocytes?

B) Match the following: **(04)**

a)	Ig A	**i)**	Found as a pentamer
b)	Ig E	**ii)**	Crosses the placenta
c)	Ig G	**iii)**	Secretary antibody
d)	Ig M	**iv)**	Attach to mast cells

Q.6 a) Write the method of preparation and applications of monoclonal antibodies. **(10)**

b) Explain different types of immunity. **(05)**

Q.7 Define 'Antibody'. Explain in detail structure and types of Antibody. **(15)**

Q.8 Write a note any **THREE** of the following: **(15)**

a) Complement system
b) Diphtheria antitoxin
c) Immunofluorescence
d) MMR vaccine

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PURUS-IV : APRIL/ MAY - 2010 (Semester Pattern)
SUBJECT : PHARMACOLOGY-I

Day : Monday
Date : 17-05-2010

Time : 2:00 PM To 5:00 P.M
Max. Marks : 80.

N.B.:

1) Q. No. 1 and 5 are **COMPULSORY.** Out of the remaining attempt any **TWO** questions from Section-I and any **TWO** questions from Section-II.
2) Answers to the two sections should be written in the **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.

SECTION-I

Q.1 Define the following (Any **Five**) **(10)**

a) Chemotherapy
b) Affinity
c) Tachyphylaxis
d) Idiosyncrasy
e) Pinocytosis
f) Pharmacokinetics

Q.2 **a)** Write in detail about transport of drug across biological membrane with examples. **(08)**
b) Describe the factors that modify drug effects. **(07)**

Q.3 **a)** Discuss different types of adverse drug reactions. **(08)**
b) Describe Pharmacokinetic drug-drug interactions with examples. **(07)**

Q.4 Write short notes on (Any **Three**) **(15)**

a) Microsomal enzyme induction
b) Drug dependence
c) Synergism
d) Teratogenicity

SECTION-II

Q.5 Define the following (Any **Five**) **(10)**

a) Photosensitivity
b) Drug withdrawal
c) Miotic
d) Anorexia
e) Toxicology
f) Plateau effect

Q.6 **a)** Classify anticholinesterase agents. Give symptoms and treatment of anticholinesterase poisoning. **(08)**
b) Describe the adverse effects, contraindications and uses of β-adrenoceptor blockers. **(07)**

Q.7 **a)** Discuss the pharmacotherapy of Glaucoma. **(08)**
b) Classify α-adrenergic blocking agents with examples and describe their pharmacological effects. **(07)**

Q.8 Write short notes on (Any **Three**) **(15)**

a) Neurohumoral transmission
b) Mydriatrics
c) Atropine substitutes
d) Selective β_2 stimulants.

PURUS-V (SEMESTER PATTERN) April-May-2010
SUBJECT: PHARMACEUTICAL ANALYSIS-II

Day: Wednesday
Date: 05-05-2010

Time: 10.00AM To 1.00P.M.
Max. Marks: 80

N.B:

1) **Q. No. 1** and **5** are **COMPULSORY,** out of the remaining attempt any **TWO** questions from Section-**I** and any **TWO** questions from Section-**II.**
2) Answers to the two sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.

SECTION-I

Q.1 Answer in brief (**ANY FIVE**): **(10)**

a) Write the merits of Instrumental methods.
b) Define supporting electrolytes.
c) Define signal Transduction.
d) Define electrode potential.
e) Define errors in analysis.
f) Define voltammetry.
g) Define Ilkovic equation.

Q.2 Write the principle, Construction and working of polarographic Instrument with a neat diagram. Mention the advantages and disadvantages. **(15)**

Q.3 **a)** Explain the working of Normal Hydrogen electrode with diagram and write the advantages. **(15)**
b) Write a note on DME.

Q.4 Write notes on (**ANY THREE**): **(15)**

a) Polarographic wave
b) Glass electrode
c) Dead stop end point method of potentiometry
d) Calibration of pH meters
e) Calomel electrode

SECTION-II

Q.5 Answer in brief (**ANY FIVE**): **(10)**

a) Explain optical activity.
b) Explain formula used for determination of Molar refraction of solids.
c) List out factors affecting angle of plain polarized light.
d) Define specific and molar refraction.
e) What are the disadvantages of Amperometry.
f) Compare pulfrich and dipping refractometer.
g) What is saccharimetry.

Q.6 Describe construction, working, principle, applications and advantages of Abbe's refractometer. **(15)**

Q.7 Describe construction, working, principle and applications of Polarimeter. **(15)**

Q.8 Write notes on (**ANY THREE**): **(15)**

a) Principle of Amperometry
b) Describe factors affecting refractive Index
c) Describe rotating platinum electrode used in amperometry
d) Explain various amperometric titrations

PURUS – V (SEMESTER PATTERN) : APRIL/MAY 2010
SUBJECT : DOSAGE FORM DESIGN-I

Day : Friday
Date : 07-05-2010

Time : 10.00A.M.TO 1.00P.M.
Max. Marks : 80

N.B.

1) Question **ONE** and question **FIVE** are compulsory. Out of remaining answer any **TWO** questions from each sections.
2) Both the section should be written in **SEPARATE** answer book.
3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 Answer any **FIVE:** **(10)**

a) Differentiate between preformulation and formulation studies.
b) Write applications of ultraviolet spectrophotometer in performulation studies.
c) Enlist different methods used for enhancement of solubility of pharmaceutical.
d) Write selection criteria for antioxidants in liquid orals.
e) Explain applicability of stock's equation in suspensions.
f) What do you mean by structured vehicles, write examples?
g) Define flocculating agents with examples.

Q.2 **a)** Discuss manufacturing steps for lotions. **(07)**
b) Discuss approaches to design suspension formulation containing high-density active pharmaceutical ingredient. **(08)**

Q.3 **a)** Discuss evaluation of suspension. **(10)**
b) Write merits and demerits of artificial sweetening agents. **(05)**

Q.4 Write note: **(ANY THREE)** **(15)**

a) Aesthetic criteria for pharmaceutical formulation
b) Therapeutic concept of formulation design
c) Buffers in liquids orals.
d) selection of manufacturing vessels for liquid formulations

SECTION – II

Q.5 Answer any **FIVE:** **(10)**

a) Discuss about creaking and creaming of emulsions.
b) What are various measures to avoid phase inversion?
c) Suggest suitable containers for dry syrups.
d) Write with example properties of absorption semisolid base.
e) What are different additives used in dry syrups.
f) Explain: Mixed surfactant system produces physically more stable emulsion than a single surfactant.
g) Explain polymers as flocculating agents.

Q.6 **a)** Discuss stability of emulsions based on types of emulsifying agents used. **(07)**
b) Discuss quality control parameters for oral emulsions. **(08)**

Q.7 **a)** Discuss transdermal absorption of drug.. **(10)**
b) Discuss principle of drug diffusion testing for semisolid preparations. **(05)**

Q.8 Write note: **(ANY THREE)** **(15)**

a) Skin irritation test