PH March Exam (4) 14

Novel drug delivery system

Sem-VIII

Con. 2955-12. **(REVISED COURSE)** RV-1272

28/4/12

(2 Hours) [Total Marks : 40

N.B. (1) Question No. **1** is **compulsory**.
(2) Attempt any **three** of the remaining **four** questions.
(3) Numbers at the **right** indicate marks.

1. Attempt any **two** of the following :– 10
   (a) Give principles of Osmotic drug delivery systems.
   (b) Write a note on Ocular iontophoresis.
   (c) What are applications of Liposomes ? Discuss.

2. What do you understand by GRDDS ? Mention various techniques to enhance Gastric retention. Detail on Floating System. 10

3. (a) How would you proceed for Quality assessment of Mucoadhesive products ? 5
   (b) Elaborate on Ophthalmic inserts. 5

4. Write on the factors for development of various TDDS. Give manufacturing technique of one of them. 10

5. (a) What are the factors considered for the plan of Brain targeting ? 5
   (b) Write a note on Mucoadhesive Polymers. 5

Pharmaceutical Chem. IV

Con. 2624–12. (REVISED COURSE) RV–1274

(2 Hours) [Total Marks : 40

N.B. (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** more questions from remaining **six**.

1. (a) Write the structure, generic name and major therapeutic use of the drugs with the following description :— 4
   (i) A selective Serotonin Reuptake Inhibitor containing a secondary amine function.
   (ii) A ureide anticonvulsant which binds to voltage gated sodium channels.
   (iii) A drug of choice for status epilepticus.
   (iv) A selective COX-2 inhibitor containing a partially saturated furan ring.
   (b) Write the structure and major therapeutic use of the following :— 4
   (i) 2-chloro–9-(3'–dimethylaminopropylidene) thioxanthene,
   (ii) trans–2-phenylcyclopropylamine.
   (iii) 3-ethyl–6,7-dihydro–2-methyl–5-morpholinomethylindol–4(5H)-one.
   (iv) 4-hydroxy–2–methyl-N–2-pyridyl-2H–1,2-benzothiazine-3–carboxamide 1,1-dioxide.

2. (a) Explain the following statements. Support your answer with relevant structures wherever required. 6
   (i) Trazadone is associated with hepatotoxicity
   (ii) 1, 3, 5, 5–tetrasubstituted barbiturates are inactive.
   (iii) C-1 substitution is detrimental for the D-2 antagonistic activity of phenothiazines.
   (iv) Oxidation state affects the profile of activity of sulindac.
   (b) Write the structure of 4 phase I metabolites of Diclofenac. 2

3. (a) What are various mechanistic classes of anti-depressant drugs ? Classify the following drugs into these classes : Amitryptyline, trazadone, doxepin, fluoxetine, pargyline. 4
   (b) Explain the application of bioisosteric modifications for reducing toxicity of anticonvulsants. Give an account of the new class of anticonvulsants arising out of such modifications. 4

4. (a) Outline the synthesis of the following, specifying reagents, conditions and names of intermediates (any **two**) :— 6
   (i) Piroxicam
   (ii) Dextropropoxyphene
   (iii) Doxepine.
   (b) Give metabolic pathway for chlordiazepoxide. 2

5. (a) Give the structure, numbering and nomenclature of a therapeutically used benzodiazepine. Discuss the effects of conformation on the activity of benzodiazepines. 4
   (b) Explain the following statement and support your answer with relevant structures: A phenolic hydroxy group is required for the activity of morphine, but a similar substituent when present in Meperidine leads to loss of activity. 4

6. (a) Write a note on drug treatment of Parkinson's disease. 4
   (b) Why is morphine administration in patients with renal failure associated with dose reduction ? 2
   (c) Account for the role of pyridine ring in increasing the acidity of piroxicam. 2

7. Write short notes on (any **two**) :— 8
   (a) Selective COX-2 inhibitors
   (b) Butyrophenones
   (c) Drug treatment of Gout.

A4-Ex-I-12-E-46

Pharmaceutical Analysis-V

Con. 2600-12.

RV-1277

27/4/12

(REVISED COURSE)

Sem-VIII

(2 Hours)

[Total Marks : 40

N.B. : (1) Question No. 1 is **compulsory**.
(2) Answer any **four** questions from the remaining **six** questions.

1 (a) Explain the following terms (any **two**) :— 4
(i) Radiochemical purity.
(ii) Gyromagnetic ratio.
(iii) Base peak.
(iv) Coupling constant.

(b) Name the following (any **four**) :— 4
(i) One detector used in NIR spectrometer.
(ii) One radioisotope used for therapeutic purpose.
(iii) One Ionisation technique in MS for non volatile and thermolabile compounds.
(iv) Splitting pattern for —CH_2—proton in ethyl chloride.
(v) One shift reagent used in NMR.

2 (a) With the help of suitable diagram explain Electron Impact Ionisation technique in MS. Give its advantages and disadvantages. 4

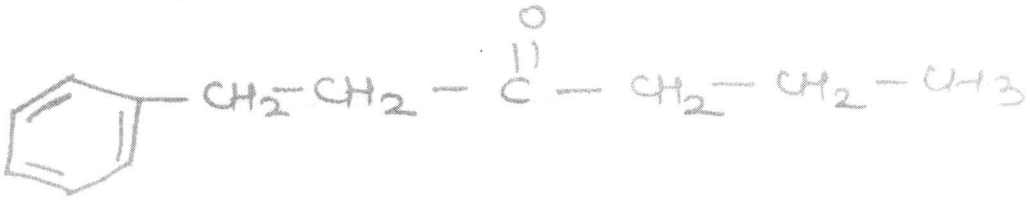
(b) The molecular formula for an unknown compound is CgHgNO. It gave the following spectral data :— 4

UV = λ_{max} 260 nm
IR = 2250 cm^{-1}
^{1}H-NMR δ = 3·51 (singlet, 8·1 squares)
= 3·73 (singlet, 11·9 squares)
= 6·7 (doublet, 8 squares)
= 7·05 (doublet, 8·1 squares)

Predict the structure with suitable justification.

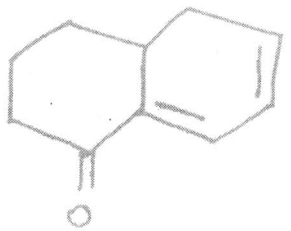
3 (a) Give significacne of hyphenated technique. Explain in brief any one interface used in LCMS. 4

(b) Depict two Fragmentation pathways in mas spectrum of— 4



4 (a) Explain NIR as an important analytical tool. 4

(b) Predict the λ_{max} in UV spectrum of following compound :— 4



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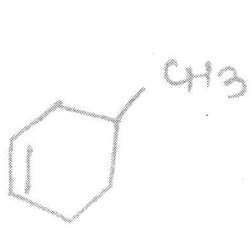
5. (a) Discuss instrumentation of Atomic Absorption Spectrometry. 4

(b) Explain how will you distinguish the following compounds using any spectral technique :— 4



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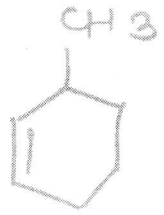

6. (a) Explain basic informations obtained from proton NMR spectra with suitable example for each. 4

(b) The molecular formula for an unknown compound is C_8H_8O. It gave following spectral characteristics :— 4

IR = 3050 cm^{-1}, 1720 cm^{-1}, 1450 cm^{-1}

^1H NMR = δ 7·28 m 10 squares

9·78 t 2 squares

2·8 d 4·1 squares

Predict the structure with suitable justification.

7. Write short notes on (any **two**) :— 4

(a) Quality Control of Radiopharmaceuticals.

(b) Rearrangements in MS Fragmentation.

(c) Factors affecting chemical shift.

(d) Applications of XRD.

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Forensic pharmacy

Con. 2629–12. (REVISED COURSE) RV–1270

Sem - VIII

25/4/12 (2 Hours) [Total Marks : 40

N.B. (1) Question No. **1** is **compulsory**.
(2) Attempt any **three** questions of the remaining questions.

1 (A) Define (any **five**) :— 5
(i) Scheduled Formulation under DPCO.
(ii) 'Food' and 'Adulterant' under PFA.
(iii) Bonded Manufactory under MTP (ED) Act.
(iv) Opium Derivative under NDPS Act.
(v) Patent or Proprietary Medicine under D & C Act.
(vi) Displaced persons under Pharmacy Act.

(B) Answer any **two** of the following :— 5
(i) How was the first register of Pharmacists prepared in every state ? What were essential qualifications for Registration ?
(ii) How are the prices of Scheduled Formulations estimated under DPCO ?
(iii) Give the legislative intention of the D & C Act. Enlist bodies appointed for implementation of this Act.

2. Answer any **five** of the following :— 10
(a) State the provisions under the Pharmacy Act for removal of names from the Register.
(b) State legislative intention of –
(i) Bombay shops and Establishments Act
(ii) Insecticides Act.
(c) What do you understand by 'Intellectual Property Rights' ? Enlist criteria for patentability of an invention.
(d) Where are the Central Food Labs located in India ? What are their functions ?
(e) State provisions under Factories Act for welfare of factory workers.
(f) Under whose Chairmanship was the Drugs Enquiry Committee constituted ? What were its recommendations ?

3. (A) Give significance of (any **five**) :— 5
(i) Priority date for a Patent Application.
(ii) 'Restricted Preparation' under MTP(ED) Act.
(iii) Schedule 'K' under D & C Act.
(iv) Ceiling Price under DPCO.
(v) Competent Technical Staff under D & C Act.
(vi) Registration Committee under Insecticides Act.

(B) What are the various types of Drug Manufacturing Licences issued under D & C Act. List out the conditions of a licence for manufacture of drugs other than those under Schedule C, C (1). 5

[TURN OVER

4. (A) Answer (any **two**) of the following :— 6

(i) Write a note on provisions under D & C Act for import, manufacture and sale of Homeopathic medicines.

(ii) Write a brief note on Schedule M.

(iii) Give labelling requirements under D & C Act for drugs belonging to Schedule G.

(B) Answer any **four** of the following :— 4

(a) Enlist offences under Pharmacy Act.

What do the following schedule of D & C Act stand for :—

(1) Schedule A

(2) Schedule S ?

(c) Define 'Invention' under the Patents Act.

(d) Give procedure to be followed by Drug Inspector for sending samples to drug laboratory.

(e) What are the types of licences for Retail Sale of drugs under D & C Act.

5. Write short notes on (any **two**) :— 10

(a) Severe nature of punishments under NDPS

(b) Provisions for import of drugs into India.

(c) Prohibited and permitted advertisements under DMR (OA) Act.

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Con. 2602–12.

Clinical Pharmacy & Drug Interaction

(REVISED COURSE)

RV–1283

Sem V/II

3/4/12

(2 Hours) [Total Marks : 40

N.B. (1) Question No. 5 is **compulsory**.
(2) Attempt any **three** questions from the remaining **four** questions.
(3) **All** questions carry **equal** marks.

1. What are the **different phases** of clinical trials ? Elaborate on the Phase – I clinical trial. 10

2. What is Therapeutic Drug Monitoring (TDM) ? Explain the process of TDM. Discuss the factors which necessitates TDM. 10

3. Classify Adverse Drugs Reactions (ADRs). Discuss in detail type B ADRs. 10

4. What are the therapeutic concerns in pregnancy ? Elaborate with examples. 10

5. Write short notes on (any **two**) :— 10
   (a) Methods for detecting Adverse Drug Reactions
   (b) Patient Counselling
   (c) Role of Clinical Pharmacist.

Con. 2589–12. (REVISED COURSE) RV–1280

(2 Hours) [Total Marks : 40

N.B. (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions from the remaining questions.
(3) Draw chemical structures and **diagrams** wherever **necessary**.

1. (a) Describe complete pharmacognosy of CLOVE or ASPARAGUS. 5
(b) Write Biological Source, Chemical Constituents and tests for identification of – 3
(i) Benzoin (ii) Asafoetida.

2. (a) Give Biological Source, Chemical Constituents and therapeutic uses of the following : 5
(i) Aboimescus (ii) Stropanthus.
(b) Discuss preparation and evaluation of plant extracts. 3

3. (a) Differentiate between cardenolides and bufodienolides and describe in detail Chemical Constituents of Digitalis. 5
(b) Give account of the following phytotoxins – 3
(i) Aconite (ii) Poison ivy.

4. (a) Write biosynthesis of Monoterpenoids. Give Biological Source and Chemical Constituents of – 5
(i) Sausseria (ii) Sandalwood.
(b) Give an account of flavonoids from Orange Peel. 3

5. (a) Give account of Quassia and Tinospora. 5
(b) Write a note on Marine Cytotoxic Drugs. 3

6. (a) Give detailed of – 5
Dioscorea and Valerian.
(b) Give Biological Source, Chemical Constituents and Preparation of Colophony 3

7. (a) Discuss morphology and microscopy of Umbelliferous fruits. 5
(b) Write Biological Source, Chemical Constituents, uses and Preparation of Cannabis 3

Final yr. B.Pharm Pharmaceutics-VII Sem. VIII

Sr. March-2012 143

On. 2758-12. (REVISED COURSE) RV-1286

18/4/12 (2 Hours) [Total Marks : 40

N.B. : (1) Question No. 1 is **compulsory**.
(2) Answer any **three** questions from remaining **five** questions.
(3) **Figures** to the **right** indicate **full** marks.

1 (a) What is meant by prospective validation ? State advantages and scope of validation. Discuss the validation aspects for a moist heat sterilizer. 6
(b) Give a typical BMR for a terminally sterilized aqueous injection. 4

2 (a) Discuss pilot plant scale up considerations for an oral suspension product. 6
(b) Write a note on warehousing requirements in a large scale pharma unit. 4

3. (a) Discuss the concepts of "Vendor Audit" and "EOQ". 5
(b) What is an SOP ? Give a typical SOP for operating a Tray Drier. 5

4 (a) Write on in-process Q.C. tests for a tablet prepared by direct compression. 5
(b) State functions of Q.A. department in a pharmaceutical facility. Write a note on Q.C. charts. 5

5. (a) Give a typical layout plan for large scale manufacture of a topical cream. 5
(b) Elaborate on sampling and sampling plans. 5

6. Write notes on (any **two**) :- 10
(a) Elements of Cost
(b) ABC analysis
(c) IQ-OQ for a Mixer Granulator.