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Total Number of Pages : 02

B.Pharm
15PH701

7th Semester Regular / Back Examination 2019-20
BIOPHARMACEUTICS AND PHARMACOKINETICS
BRANCH : B.Pharma
Max Marks : 100
Time : 3 Hours
Q.CODE : HRB007

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What do you mean by Biopharmaceutics?
- b) What is ABC-transporter?
- c) What is AUC? How it is determined?
- d) Differentiate the Zero and 1st Order drug absorption process.
- e) Why prodrugs are important in biopharmaceutics.
- f) What is the role of Microsomal enzyme in drug disposition?
- g) What is cellular drinking?
- h) Mention any two approaches by which polar drug targeted to brain.
- i) What is Mammillary model
- j) Define MRT.

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) What is renal clearance? Write the mechanism of renal clearance.
- b) Calculate the elimination half life of 1st order kinetics
- c) Describe how drugs are classified on basis of their solubility and permeability, describes with example.
- d) Give the Mathematical Expression of Fick's first law of diffusion.
- e) What is cross over study design mention very briefly?
- f) Explain different stages of Plasma drug concentration-time profile of a drug following oral route of administration.
- g) Name various drug binding site of HSA.
- h) Describe how pH and ionization effecting absorption of drug.
- i) What is partition coefficient, how it is related to absorption of the drug?
- j) Describe transcellular and paracellular transport mechanism
- k) Narrate how Wagner–Nelson model is useful?
- l) Mention the methods for measurement of bioavailability.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** What is drug protein binding and its significance? Explain schematically the effect of reversible drug protein binding on distribution and elimination. Write the significance of HSA. **(16)**
- Q4** Estimate the pharmacokinetic parameters of IV bolus administration follow one compartment open model. **(16)**
- Q5** Narrate briefly the processes of metabolism of xenobiotics. **(16)**
- Q6** Describe various mechanism of drug absorption process. **(16)**

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B.Pharm
15PH706.E.2

7th Semester Regular/Back Examination 2019-20

COSMETIC TECHNOLOGY

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB438

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What is Coupler?
- b) Define primary surfactants with example.
- c) Classify cosmetics according to its use.
- d) Write the composition of eye liner.
- e) Give two examples of anti-dandruff agents.
- f) What is acne and how it occurs?
- g) Differentiate between toothpaste and toothpowder.
- h) Define and classify anti-oxidant.
- i) Name the ingredients which impart absorbency to Face powders
- j) Write the composition of anti-ageing preparation.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Discuss about Hair Cream.
- b) Composition and function of hair conditioners.
- c) Composition and importance of dentifrices.
- d) How the Packaging of cosmetics done. Enumerate by citing appropriate examples.
- e) Briefly discuss about Vanishing cream.
- f) Define, classify and importance of humectants
- g) What is SPF, Classify sunscreen agents with examples?
- h) Briefly discuss about Face Powder.
- i) Effect of Light on Stability.
- j) Raw materials and process to prepare skin cleanser.
- k) Classify hair care products. Write the raw materials required to prepare shampoo.
- l) Briefly discuss about lipstick.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Write the objectives of quality control. How quality control tests of different cosmetic products are carried out discuss in detail. **(16)**
- Q4** Briefly describe the Anatomy of skin and skin preparations. Write the composition and method of preparation of sunscreen products. **(16)**
- Q5** List out various types of Shaving preparations. Briefly describe the raw materials used in these preparations along with the evaluation parameters. **(16)**
- Q6** Write the classification of Colors used in cosmetics with one example of each. Discuss the general characteristics and raw materials used in Nail polish, with its evaluation. **(16)**

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B.Pharm
15PH706.E.1

7th Semester Regular/Back Examination 2019-20
DRUG REGULATORY AFFAIRS & IPR

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB437

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What are the limitations of IPR?
- b) What are the features of BPR?
- c) Define Copyrights. What are the different types of Copyrights?
- d) What do you mean by Trademarks? Write its advantages.
- e) What are Generic drug products? What are its limitations?
- f) Define Orphan drugs. What are the various categories of Orphan drugs?
- g) What is Regulatory affair? What are the roles of regulatory affairs professionals?
- h) What are the difference between NDA & 505(b)(2) applications.
- i) What is CTD? What are the various modules of CTD?
- j) What is FDA? What are the roles & functions of FDA?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) What is Hatch-Waxman Act? Describe briefly its role in developing Generic drug development?
- b) What is TQM? Write about the principles of TQM?
- c) Define Trademarks. Describe the requirements to registering trademarks?
- d) Define the term Patent. Describe the criteria for Patentability?
- e) Differentiate between Generic drug Vs Branded drug.
- f) Define ISO. Describe briefly the 9000 series?
- g) What is TQM? What are the elements of TQM?
- h) Define ICH. Write the objectives, advantages and limitation of ICH.
- i) Describe the resources for ANDA submission?
- j) What is drug development? Describe about preclinical studies?
- k) What is Pharmacovigilance? Write its objectives and process.
- l) What is Clinical trial? Describe briefly the phases of clinical trials?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** Define and classify various types of Patents? Describe the procedures of obtaining a patent in India. **(16)**
- Q4** Define stability. Describe the stability studies of drug products & drug substance as per ICH guidelines? **(16)**
- Q5** What is NDA? Describe its Filing process to FDA? **(16)**
- Q6** What is ISO? Write its advantages & disadvantages of ISO. Describe the ISO certification procedure? **(16)**

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B.Pharm
PH.E.7

7th Semester Back Examination 2019-20
HOSPITAL PHARMACY ADMINISTRATION

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 70

Q.CODE : HB439

Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions : (2 x 10)**
- a) What do you mean by ABC Analysis?
 - b) What is the role of pharmacist in patient counseling?
 - c) Differentiate between central Storage and Pharmacy Storage.
 - d) What do you mean by Hospital Formulary?
 - e) Write any two primary sources of drug information.
 - f) What do you mean by MEDIPHOR?
 - g) Define DIC.
 - h) Write the storage conditions for sera and anti-toxins (Liquid State).
 - i) Write any two Principles of Purchasing of drugs of good quality.
 - j) What is recycling of drugs?
- Q2 a) Write Shortly about Pharmacopoeal test of sterile Ophthalmic Preparation. (5)**
b) Discuss Briefly about Pharmacy and Therapeutic committee. (5)
- Q3 a) Write briefly about the role and significance of Hospital Formulary Systems. (5)**
b) Classify Hospitals write their various functions. (5)
- Q4 a) Write details about objectives and functions of infection control committee. (5)**
b) Discuss shortly about the pyrogen test in parenteralpreparation. (5)
- Q5 a) Write the detail functions of Drug Information System. (5)**
b) Write the various techniques of inventory control in Hospital Pharmacy. (5)
- Q6 Discuss Details about Facilities required for Manufacturing of Parenteral Preparation. Write details about secondary sources of Drug information. (10)**
- Q7 Write in details about structure and Organization of a Hospital. Discuss about Unit Dose Dispensing system of drug distribution in Hospital Pharmacy. (10)**
- Q8 Write short Notes on any TWO : (5 x 2)**
- a) EOQ and Estimation of Demand
 - b) Sterility Test
 - c) VED Analysis
 - d) Drug recall

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**B.Pharm
15PH703**

7th Semester Regular / Back Examination 2019-20

PHARM. ANALYSIS-III

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB188

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Differentiate between TLC and HPTLC.
- b) What is the fingerprint region and its application in IR spectroscopy.
- c) Mention different ions produced in mass spectrometry during ionization.
- d) What is Retention time in chromatography?
- e) What is basic difference between absorbance curve and calibration curve of an analyte?
- f) Define Hypsochromic shift.
- g) Write the role of Flame Atomizer in Flame Photometry.
- h) What is the source of light in Atomic Absorption Spectroscopy?
- i) What is isobestic point?
- j) What is TMS?

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Write down the working principle and application of Gas Chromatography.
- b) Explain in details about instrumentation of Flame Photometry.
- c) Write down the different methods for preparation of TLC plates.
- d) Explain the working principle of PMT.
- e) Write short note on Shielding effect and Deshielding effect.
- f) Write down the preparation methods of the Column in Column Chromatography.
- g) Write short note on mobile phase used in HPLC.
- h) Derive an equation with the help of Beer–Lamberts law.
- i) Write in details about the solvents used in NMR spectrometer.
- j) Explain the instrumentation and application of Atomic Absorption Spectroscopy.
- k) Write down the working principle and explain the instrumentation of mass spectrometry.
- l) Explain on different types of Gratings used in UV spectroscopy.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** What are the principles involved in UV spectroscopy? Explain in details about the instrumentation and applications of UV spectroscopy. **(16)**
- Q4** Explain the principle and instrumentation of NMR spectroscopy. Write a note on structural elucidation of a compound by NMR spectroscopy. **(16)**
- Q5** Outline the various types of HPLC techniques. Discuss in details on instrumentation of HPLC. **(16)**
- Q6** Describe different sample preparation techniques used in IR spectroscopy. Write down the principle and a short note on different components of IR spectrometer. **(16)**

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B.Pharm
PH.7.1

7th Semester Back Examination 2019-20
PHARMACEUTICS - VI (BIO-PHARMACEUTICS AND PHARMACOKINETICS)

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 70

Q.CODE : HB008

Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions : (2 x 10)**
- a) Define Biopharmaceutics.
 - b) Write down the mechanism of pore transport.
 - c) What are the peroral route of drug administration?
 - d) Show different binding site of HSA with a diagram.
 - e) In compartmental modelling, what does the term 'open' mean?
 - f) What is flip flop phenomenon?
 - g) Define extraction ratio.
 - h) What do you mean by total clearance?
 - i) What is active tubular secretion?
 - j) Amorphous shows greater solubility than crystalline. Justify.
- Q2 a) Describe active transport of drug. (5)**
b) Write down the characteristics of Passive diffusion. (5)
- Q3 a) What are the dosage form factors affecting drug absorption? (5)**
b) State pH-partition hypothesis and describe its limitations. (5)
- Q4 a) Describe first-pass metabolism in detail with suitable example. (5)**
b) Discuss about various plasma proteins that bind with the drugs after absorption. (5)
- Q5 a) Classify the chemical pathways of drug metabolism. (5)**
b) Write down briefly the mechanism of renal clearance. (5)
- Q6 a) What is drug-protein binding? Write its significance (5)**
b) Derive the expression for biological half-life of a process following 1st order kinetics. (5)
- Q7 Discuss about pharmacokinetic and pharmacodynamic methods of assessment of bioavailability. (10)**
- Q8 Write short answer on any TWO : (5 x 2)**
- a) Volume of distribution
 - b) Compartmental model
 - c) AUC
 - d) Enterohepatic cycling

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B.Pharm
15PH704

7th Semester Regular/Back Examination 2019-20

PHARMACOLOGY-III

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB253

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part-I

- Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)**
- a) Differentiate bacteriostatic and bacteriocidal agents with suitable examples.
 - b) Name any two antiretroviral drugs with their uses.
 - c) What are Beta-lactam antibiotics? Give one example with its uses.
 - d) Name any two laxatives & mention their uses.
 - e) Name any two immunosuppressants and write their uses.
 - f) Write down the MOA of Sulfonamide.
 - g) What are the prominent adverse effects produced by Chloramphenicol?
 - h) Name any two appetite stimulants and mention their uses.
 - i) What are anabolic steroids? Write their uses.
 - j) Mention the physiological role of Calcitonin.

Part-II

- Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)**
- a) Discuss on synthesis and pharmacological actions of Thyroid hormone.
 - b) Write the mechanism, adverse effects and uses of cotrimoxazole.
 - c) Briefly discuss about the mechanism, adverse effects and uses of tetracycline.
 - d) Write about the mode of action of Macrolide antibiotics with examples.
 - e) Briefly discuss about the pharmacology of Quinine for its antimalarial activity.
 - f) Briefly enumerate about the antidiarrhoeal drugs with suitable examples.
 - g) Describe briefly about the anti thyroid drugs.
 - h) Write a note on oral contraceptives with their uses.
 - i) Give a brief note about the Anti-helminthics drugs with suitable examples.
 - j) What are prokinetic drugs? Write their uses and adverse effects.
 - k) Write briefly about the pharmacology of quinolones.
 - l) Write a brief note on pharmacovigilance.

Part-III

- Only Long Answer Type Questions (Answer Any Two out of Four)**
- Q3** Classify anticancer cytotoxic drugs with suitable examples and write the mechanism of 5 Fluorouracil. Discuss general toxicity of cytotoxic drugs. **(16)**
- Q4** Define diabetes mellitus. Classify antidiabetic drugs with suitable examples. Describe the pharmacology of oral hypoglycaemic agents. **(16)**
- Q5** Classify antiulcer drugs with suitable examples. Discuss in detail about proton pump inhibitors with special focus on their adverse effects and uses. **(16)**
- Q6** What is preclinical trial? Discuss briefly about the various steps involved in the new drug development process with the different phases of clinical trial. **(16)**

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B.Pharm
15PH702

7th Semester Regular/Back Examination 2019-20

PHYTOCHEMISTRY
BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB097

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

- Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)**
- a) What is special isoprene rule? Explain with examples.
 - b) What is D and L forms in stereochemistry? Justify with examples.
 - c) What is Shinoda test and what for it is used?
 - d) What for IR, NMR and Mass spectra are carried out?
 - e) Distinguish between cardenolides and bufadienolides.
 - f) Write down the hydrolytic products of atropine.
 - g) Mention the different visualizing agents used for detection of phytoconstituents.
 - h) Write down the structure and uses of vitamin C.
 - i) Write down the therapeutic activity of Streptomycin.
 - j) Write down the stereochemistry of Citral.

Part- II

- Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)**
- a) Write down the different methods of extraction of alkaloids.
 - b) Write down the structure elucidation of Menthol.
 - c) Write down the sources, chemistry and uses of Folic acid.
 - d) Write down the extraction and isolation method of terpenoids.
 - e) Elucidate the structure of tropic acid.
 - f) Write down the sources, pharmacological properties and uses of Scillaren A and Quabain.
 - g) Write down the structural elucidation of Carvone.
 - h) Write down the sources, isolation and uses of Morphine.
 - i) What are cardiac glycosides? Write down the source, pharmacological properties of digitoxin.
 - j) Elucidate the structure of vitamin B₁ chemically.
 - k) Write down the therapeutic activity of Penicillin.
 - l) Write down the application of spectroscopy in the structure elucidation of organic compounds.

Part-III

- Q3 Only Long Answer Type Questions (Answer Any Two out of Four) (16)**
- What are terpenoids? Classify it. Elucidate the structure of Citral chemically.
- Q4 (16)** What are Flavonoids? Classify it with suitable examples. Write down the chemistry and pharmacological properties of Quercetin.
- Q5 (16)** Define alkaloids and classify it with suitable examples. Elucidate the structure of Ephedrine.
- Q6 (16)** What are vitamins? Classify it with suitable examples. Elucidate the structure of vitamin A by chemical method.

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**B.Pharm
PECS5403**

7th Semester Back Examination 2019-20
REAL TIME SYSTEMS
BRANCH : AEIE, CSE, ECE, EIE, ETC, IEE, IT, ITE
Time : 3 Hours
Max Marks : 70
Q.CODE : HB264

Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions : (2 x 10)**
- a) Differentiate between hard real-time tasks and soft real-time tasks.
 - b) What is the difference between behavioral constraint and performance constraint?
 - c) Differentiate between periodic timers and aperiodic timers.
 - d) What is understood by jitter associated with a periodic task?
 - e) What is the difference between PIP and HLP?
 - f) State two main purpose of using clocks in distributed real time system?
 - g) Why clock synchronization is required?
 - h) List out some applications of Real-time databases.
 - i) Specify the important parts of the POSIX standard.
 - j) Define byzantine clock. Explain with an example.
- Q2 a) Explain a basic model of a real-time system with a neat sketch diagram. (5)**
b) Mention the characteristics of Real Time System and Real Time System control. (5)
- Q3 a) What is the difference between a performance constraint and a behavioral constraint in a real-time system? Give practical examples of each type of constraint. (5)**
b) Explain briefly Data Dependency and its type. (5)
- Q4 a) What do you mean by priority inversion? Distinguish bounded from unbounded priority inversion. Demonstrate with a neat diagram. (5)**
b) Explain Deadline Monotonic Algorithm. (5)
- Q5 a) Explain Differ server and simple sporadic server. (5)**
b) Write a note on detailed arrangement of IOSS. (5)
- Q6 Explain the difference between clock-driven, event-driven and hybrid schedulers for real-time tasks. Which type of scheduler would be preferred for scheduling three periodic tasks in an embedded application? Justify your answer. (10)**
- Q7 What is a DDC? What are the advantages of DDC over analog control? Discuss PID control algorithm. (10)**
- Q8 Write short answer on any TWO : (5 x 2)**
- a) Real-time communication over packet switched networks
 - b) Priority Ceiling Protocol (PCP).
 - c) Commercial real-time databases

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B.Pharm
15PH705

7th Semester Regular/Back Examination 2019-20

RESEARCH METHODOLOGY

BRANCH : B.Pharma

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB333

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part-I

- Q1** **Only Short Answer Type Questions (Answer All-10)** **(2 x 10)**
- a) Define Research.
 - b) What is sampling error?
 - c) What do you mean by Scale Point?
 - d) Explain Double Barrel Question.
 - e) What do you mean by Funnel Approach?
 - f) What is standard error?
 - g) Write the main objectives of Research.
 - h) What are the Non-Parametric tests?
 - i) Define Hypothesis.
 - j) Mention the characteristics of good research report.

Part-II

- Q2** **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**
- a) Write the various steps for Research Process.
 - b) Describe the different methods of Primary data collection.
 - c) What is Chi-square test? Explain it's significance.
 - d) Write notes on Nominal and Ordinal scale.
 - e) Explain the characteristics of Ideal sample.
 - f) Write the various steps for writing a Research Report.
 - g) Explain the characteristics of Normal distribution.
 - h) Describe Interval and Ratio scale.
 - i) Write details about Research question.
 - j) What are the different types of Research?
 - k) Enumerate the concept of Factor analysis.
 - l) Explain the term Null Hypothesis and Alternative Hypothesis.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** What is Research Design? Describe in details about various types of Research design. **(16)**
- Q4** Define Sampling. Describe the different types of sampling methods in details. **(16)**
- Q5** What is Questionnaire? Write the process of building a questionnaire in details. **(16)**
- Q6** Write the details procedure of Hypothesis testing. **(16)**