Question Bank

Subject: Pharmacology II (SEM VI)

I. Short Answer Question (5 Marks)

1) Write briefly on Calcium channel blockers
2) Brief note on Digoxin toxicity and its management
3) Give Pharmacological basis of treating angina pectoris
4) Classify anti coagulants and explain the pharmacology of heparin
5) Classify fibrinolytic agents and explain the pharmacology of streptokinase
6) Classify anti thrombotics and explain the pharmacology of aspirin?
7) Explain the mechanism of action of aspirin
8) Write note on parenteral iron therapy
9) Write short note on potassium sparing diuretic
10) Write briefly on Insulin analogues
11) Classify Anti thyroid drugs with examples and explain their uses and adverse effect
12) Describe the pharmacological actions, therapeutic indication and adverse effects of corticosteroids and add note on inhaled steroids
13) Describe Mechanism of action of oxytocin
14) Brief notes on uterine relaxants
15) Give mechanism of action of the tamoxifen
16) Explain the mechanism of action of oral contraceptives
17) Write a note on therapeutic importance of 5-HT antagonist
18) Explain the physiological role and therapeutic uses of prostaglandins
19) Give the therapeutic uses of antihistamines
20) Write a note on oral contraceptives and hormonal contraceptives
21) What is plasma expanders?
22) Define shock and explain how shock can be managed?
23) Give the mechanism of action, uses and adverse effects of organic nitrates.
24) Discuss the pharmacology of beta blocker
25) Give the mechanism of action and adverse effects of quinidine.
26) Give the mechanism of action of streptokinase

27) Describe the mechanism of action of acetazolamide
28) Write contraindications and adverse effects of plasma volume expanders.
29) What are thrombolytics? Classify them with examples.
30) Write a note on oestrogen
31) Classify oral hypoglycemic with examples. Add note on metformin.
32) Enlist various 5HT receptors and its antagonists.
33) Brief the triple response of histamine.
34) Write note on biosynthesis of prostaglandins
35) Give the physiological role of prostaglandins
36) Write a note on Warfarin sodium as an oral anticoagulant
37) Brief the treatment of anaphylactic shock
38) Discuss the mechanism of action and adverse effects of liqnocaine
39) Explain the drug interaction of anti angina drugs.
40) Write a note on beta adrenoreceptor blocking agents
41) Discuss cardio vascular effects of adrenaline, nor adrenaline and isoprenaline.
42) Give the role of ACE inhibitors in congestive cardiac failure.
43) Write a note on digoxin
44) Write in brief combination therapy to treat hypertension.
45) What do you mean by cardiac ischemia, angina pectoris and silent angina?

XII. Long Answer Questions (10 marks)

1) Classify and enumerate antihypertensive and explain the pharmacology of hydralazine?
2) Classify and enumerate drugs used in CCF and explain the pharmacology of digoxin?
3) Classify and enumerate hypo lipidaemics and explain the pharmacology of statins.
4) Classify oral anti diabetic with examples and explain the pharmacology of sulfonyl urea
5) Explain the synthesis, release and pharmacology of histamine
6) Define the Autacoids, classify them and discuss the pharmacology of Histamine or Serotonin

7) Define and Classify the NSAIDs. Discuss the Pharmacology of Aspirin
8) Describe Bioassay of Insulin
9) Classify diuretics according to their site of action. Explain the mechanism of action, pharmacological effects of diruetics.
10) Describe Bioassay of d-tubocurarine
11) Define bioassay. Classify the different types of bioassay. Explain in detail the bioassay of acetyl choline by matching method.
12) Describe bioassay principle, application and methods. Discuss bioassay of histamine
13) Describe narcotic analgesics. Discuss the pharmacology of morphine.
14) Classify antihistaminic. Discuss its pharmacological actions.
15) Discuss the pharmacology of non steroidal anti inflammatory agents.

Question Bank

Subject: Pharmacology III (SEM VI)

I. Short Answer Question (5 Marks)

1) Write MOA and Adverse effect of Sulfonamide.
2) Classify Laxative. Write adverse effect of Chloramphenicol.
3) Explain in detail pharmacology of Metronidazole.
4) What are the goals of antiulcer therapy? Add mechanism of action of sucralfate.
5) What are laxatives? Classify them with examples.
6) Define mucokinetics. Write the specific approaches for treatment of cough.
7) Classify drugs used for treatment of bronchial asthma. Write mechanism of actions, adverse drug reactions and therapeutic uses of theophylline.
8) Give any two examples of respiratory stimulants. Write their possible adverse effects. .
9) Discuss the terms Mucolytics and Astringents. Write examples of any two mucokinetic and mast cell stabilizers.
10) Write about the mode of action of macrolide antibiotics with examples.
11) Discuss about the mode of action of tetracyclines and its drawback.
12) Define with examples – Poison, Drug, ADR and Drug-Side Effects.
13) Write down the drug regime as per recommendation of WHO guidelines for Multi Drug Resistant tuberculosis.
14) Mention about the clinically important adverse effects of chloramphenicol and aminoglycosides.
15) Briefly highlight about the general principles for treatment against barbiturate and atropine poisoning.
16) Write down with examples the pharmacological classification of anti-neoplastic drugs and immunosuppressant agent.
17) Classify antiulcer drugs. Discuss in detail the management of peptic ulcer.
18) Current & new drugs in malaria therapy.
19) Give the account of Immunosuppressive drugs
20) Explain in detail expectorants and antitussives
21) Classify antiulcer drugs. Discuss in detail the management of peptic ulcer.
22) Recent advances in treatment of fungal infections.
23) Define Diarrhoea. Classify antidiarrhoeals with examples
24) Discuss in detail fluoroquinolones

25) Give an account of antiemetic.
26) Write in detail drugs used in treatment of Cough.
27) Define Respiratory stimulants with example. Write MOA & Therapeutic use of any drug.
28) Give the MOA & ADR of quinolones
29) Give the account of antileprotic agents
30) Explain in detail drug used in UTI Infection
31) Enlist sexually transmitted diseases Give the pharmacology of drugs used for Gonorrhea.
32) Explain genotoxicity and carcinogenicity
33) Explain in detail drugs used in constipation
34) Write note on cotrimoxazole
35) Give the general principle of treatment of poisoning
36) Explain the term acute, subacute and chronic toxicity
37) How heavy metal poisoning is managed
38) Write note on anthelmintic
39) Explain the term teratogenicity and mutagenicity
40) Write note on Antiamoebic agents
41) Write short note on STD
42) Write detailed note on chronopharmacology
43) Write short note organophosphate poisoning
44) Write note on Antiulcer agent
45) Write note on digestant & carminatives

II. Long Answer Questions (10 marks)

1) Classify penicillin. Explain in detail pharmacology of penicillin.
2) Classify aminoglyside. Write antimicrobial spectrum, MOA, ADR & therapeutic uses of aminoglycoside
3) Classify antiulcer agent. Explain in detail pharmacology of omeprazole.
4) Enlist cephalosporins. Explain in detail pharmacology of cephalosporin
5) Classify antiasthmatic agent. Explain in detail pharmacology of theophylline.
6) Classify anticancer drugs. Mention general principles of cancer chemotherapy. Give an account to

newer approaches to treatment of cancer.

7) What is COPD? Add a note on pharmacology of mast cell stabilizers.
8) Classify Tetracycline. Write antimicrobial spectrum, MOA, ADR & Therapeutic uses of Tetracycline
9) Classify antitubercular agents. Write MOA &Uses of isoniazid and rifampicin
10) Classify antifungal agents with example. Write MOA, Uses, ADR of triazole and amphotericin B
11) Classify antiviral drugs with example. Write MOA, Uses & ADR of zidovudine and Aacyclovir
12) Classify anticancer agents with example. Give account od MOA & Uses of alkylating agents & 5 Fluorouracil
13) Give the account of chemotherapy of malignancy
14) Give the general principle of treatment of poisoning. Add note on lead, arsenic and mercury Poisoning
15) Give the account of immunosuppressant in case of organ transplantation

QUESTION BANK

(Compiled by K A Kamalapurkar, Pradip Jadhav & Snehal Kashid)

Third Year B.pharm (sem V)

SUBJECT- PHARMACEUTICAL JURISPRUDENCE

SHORT ANSWERS (5 MARKS)

1. Explain condition to be fulfilled for obtaining license to manufacture drugs under schedule X drugs.
2. Define drugs and explain classes of drugs prohibited to be manufactured as per D & C act 1940 .
3. Define adulterated drugs and explain class of drugs prohibited to be imported as per D and C act 1940.
4. Describe conditions that should be full filled for obtaining license to manufacture drugs for examinations, test or analysis.
5. Explain offences and penalties related to manufacture of drugs as per D and C act.
6. Discuss offences and penalties relating to import of drugs.
7. Describe procedure for obtaining license and facilities to be provided for running a Pharmacy.
8. Explain conditions for getting an import license for import of drugs personal use.
9. Write a note on schedule G and H
10. Write detailed note on schedule X
11. Explain requirements for functioning and operation of blood banks and preparation of blood products.
12. Describe procedure for obtaining license for sale of drugs by wholesale.
13. Describe in detail procedure for obtaining license for sale of drug by retail sale.
14. Describe labeling conditions and explain labeling procedure for schedule H drug preparations.
15. Write a brief note on labeling procedure for ophthalmic preparations.
16. Write a note on qualifications and duties of drug inspectors.
17. Describe procedure for taking samples of drug for analysis and their dispatch.

18. Write a note on duties and working procedure of government analyst as per D and C act 1940.
19. Give objectives of Pharmacy Act 1948.
20. What are subsequent registers? Mention the qualifications required for entry into first and subsequent registers.
21. Differentiate between State and Joint State Pharmacy Council.
22. Write about preparation of first register.
23. Add a note on export of medicinal and toilet preparation containing alcohol.
24. Write the objectives, offences and penalties of medicinal and toilet preparation act 1955.
25. Write a note on Illicit traffic.
26. Explain in detail about Education Regulation (ER) 1991.
27. Describe the manufacture, sale and export of opium under NDPS Act 1985.
28. Write a short note on Essential drugs list.
29. Explain Drugs Price Control Order (DPCO).
30. Define magic remedies. Write a note on scrutiny of misguiding advertisements related to drugs.
31. How maximum allowable post manufacturing expenses (MAPE) is calculated as per DPCO.
32. Write a note on power to suspend or revoke of registration as per Prevention of Cruelty to animals Act.
33. Write a note on retail price and ceiling price of scheduled formulations.
34. What are CPCSEA guidelines for breeding and stocking of animals?
35. What is animal welfare board of India? write its Functions.
36. Write the offences and penalties in contravention of Drug &Magic Remedies (D &MR) act.
37. Write a note on Drugs Enquiry Committee.
38. Write a note on Health Survey & Development Committee.
39. Write a note on Hathi Committee & Mudaliar Committee.
40. Describe “Pharmacist in relation to his job” as per the Code of Pharmaceutical Ethics.
41. Explain “Pharmacist in relation to his trade” as per the Code of Pharmaceutical Ethics.
42. Write Pharmacists oath.
43. Describe the information that may be refused to be divulged as per the RTI act.

44. Differentiate between process patent & product patent.
45. Write the details of the things that cannot be patented.

Long answers (10 marks)

1. Highlight objectives, offences and penalties of Narcotic Drugs and Psychotropic substances Act 1985.
2. Write the constitution and functions of PCI.
3. Give the design of non-bonded laboratory. Discuss in detail about manufacturing of alcoholic preparations under non-bonded laboratory.
4. Write objectives, Offences and Penalties of prevention of cruelty act? Add a detailed account on CPCSEA guidelines.
5. Write a detailed account on classes prohibited and classes exempted advertisement in Drug and Magic Remedies Act.
6. Write in detail about National List of Essential Medicines (NLEM).
7. Describe conditions for obtaining license for manufacturing of schedule X drug as per D and C act.
8. Explain conditions imposed in the manufacture of Ayurvedic, Siddha & Unani medicines by licensing authority.
9. Define cosmetics and mention different types of license available for manufacturer of drugs.
10. Mention requirement for labeling and write a brief note on labeling and packaging of ophthalmic drugs.
11. Write a note on qualification, duties and power of drug inspector with inspection procedure.
12. Describe constitution and composition of Ayurvedic, Siddha and Unani drugs technical advisory board report and give its functions.
13. Give a detailed account of pharmaceutical legislations in India
14. Highlight the need of Code of Pharmaceutical Ethics in India. Explain “Pharmacist in relation to his trade & profession” as per Code of Pharmaceutical Ethics.
15. Enumerate the circumstances wherein pregnancies can be terminated as per medical termination of pregnancy act. Explain the conditions that are to be fulfilled by the Hospital for getting approval for termination of pregnancy.

P A H SOLAPUR UNIVERSITY, SOLAPUR

CLASS: THIRD YEAR B. PHARMACY (SEM-VI)

SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY

QUESTION BANK

Q. I. Answer the following questions. (5 Marks Each)

1. Define the term Biotechnology. Explain importance of Biotechnology with reference to Pharmaceutical Industry.
2. Discuss current and future scope of biotechnology.
3. Write a basic principle involved in the Protein Engineering.
4. Write a note on various types of biosensors.
5. Explain vector as important tool in genetic engineering.
6. Write the method of preparation and applications of lipase enzyme.
7. Write the scope of genetic engineering.
8. Explain the basic principle involved in the rDNA technology.
9. Write in brief storage conditions of official vaccines.
10. Write in brief the role of yeast in preparation of interferon.
11. Enlist different types of mutation. Explain its types.
12. Explain various stages of PCR.
13. Draw a neat labelled diagram of commercial fermenter.
14. Write different classes of antibodies along with their functions.
15. Write applications of PCR in genetic engineering with relevant examples.
16. Explain the structure of immunoglobulin with neat labelled diagram.
17. Explain production and industrial applications of citric acid.
18. Write the role of antibodies in immune separation.
19. Brief on applications of Enzyme Immobilization.
20. Explain genetic organisation in eukaryotic cell.
21. Discuss working and applications of Biosensor in pharmaceutical industry.
22. Write differences between prokaryotic and eukaryotic genetic organisation.
23. Write a note on Restriction Endonuclease.
24. Write a note on transduction.
25. Define Immunology. Write its various types.
26. Differentiate Western blotting and southern blotting techniques.
27. Write any five reactions of microbial biotransformation.

28. Write a note on conjugation.
29. Write a note on fermentation monitoring.
30. Explain sterilization methods used in the fermentation technology.
31. Write a note on pBR322 as a cloning vector.
32. Write production of glutamic acid by fermentation technology.
33. Write the general method of preparation of bacterial vaccine.
34. Write a note on collection and storage of Human Blood.
35. Write the production and uses of amylase.
36. Write the role of different systems involved in the fermentation process.
37. Write a note on DNA Joining enzyme.
38. Write general preparation of viral vaccine.
39. Explain the application of Hybridoma technology.
40. Write a note on Western Blotting technique with its applications.
41. Write a note on components of media used in the fermentation technology.
42. Write ideal characteristics of Plasmid.
43. Discuss production and uses of peroxidase enzyme by fermentation technology.
44. Explain in brief storage of Human Blood.
45. Write different types of Hypersensitivity reactions.

Q. II. Answer the following questions. (10 Marks Each)

1. Define Enzyme Immobilization. Discuss its various types with suitable examples.
2. Explain general method of production of enzyme. Add a note on penicillinase and catalase.
3. Discuss production of Hepatitis B vaccine by r-DNA technology.
4. Explain different tools used in the genetic engineering.
5. Enlist Blotting techniques. Write a note on Southern blotting technique.
6. Explain different vectors used in genetic engineering.
7. Explain production of Human Insulin by r-DNA technology. Write its uses.
8. Write a note on blood products and plasma substitutes.
9. Discuss Hybridoma Technology with its importance**.**
10. Explain basic structure of antibody. Explain different classes of Immunoglobulin along with their functions.

11. Explain production of Cyanocobalamin by fermentation technology. Write its therapeutic applications.
12. Define Fermentation. Explain various methods of fermentation.
13. Explain PCR technique in detail.
14. Define Blotting. Write a note on ELISA.
15. Discuss production of Penicillin by fermentation technology. Write its applications.

Mrs Reshma Vishal Pawar
Assistant Professor,
SPM's College of Pharmacy, AKLUJ

Question Bank

SUBJECT: PHARMACOLOGY II

Short Answer Question:

1) Write note on antirheumatoid drug.
2) Explain Pharmacology of Angiotensin.
3) Explain Pharmacology of Histamine.
4) Write MOA of Insulin, thyroid hormone and Sulphonyl ureas.
5) Explain Pharmacology of ACTH hormone.
6) Explain Pharmacology of PTH and Calcitonin hormone.
7) Write in detail pharmacology of Histamine.
8) Write a note on Fibrinolytic agent.
9) Classify Diuretic, Write MOA of Furosemide, Thiazide, Spironolactone.
10) Define bioassay, write its principle, application, types.
11) Explain brief pharmacology of PTH and Calcitonin hormone.
12) Classify oral hypoglycemic agent. Write MOA of Sulphonylureas, Acarbose and Rosiglitazone.
13) Write any two 5HT receptor antagonist with their uses.
14) Name any two anti-platelet drugs and their uses.
15) Define hematinic. Write any two oral iron preparations with their uses.
16) Name any two antidiuretics. Mention their uses.
17) Differentiate between the Quantal and Graded Bioassay methods with examples.
18) Quinidine should not be administered along with the digoxin- Justify.
19) Write about the pharmacology of ACE inhibitors.
20) Describe about the mechanism of action and uses of calcium channel blockers.
21) Give brief account on coagulants with their uses.
22) Write the mechanism, adverse effects and uses of spironolactone.

23) Classify 5-HT receptor antagonists. Write any two ADR and uses of Sumatriptan.

24) Write details about the Pathophysiological role of Prostaglandins (PG) and leukotriene(LT).

25) Write short answer: a) Plasma volume expanders b) Anti-diuretic hormones. c) Vitamin K.

26) Explain Endocrine and Exocrine Hormones.

27) Define Bioassay .Write the difference between Quantal and Graded Bioassay.

28) Classify calcium channel blockers. Give any two examples of second generation beta blockers with their use.

29) Define Prinzmetal's Angina. Why calcium channel blockers are used as an additional therapeutic agent along with isosorbide dinitrate for Prinzmetal's Angina.

30) Give any two examples of diuretics acting on site- IV(collecting duct.) Write their therapeutic uses.

31) Define cardiotonic drugs. Write the detail mechanism of action of Digitalis with suitable Diagram.

32) Write the Pharmacological actions, ADR and therapeutic use of Calcium Channel Blockers (CCBs).

33) Enlist the classes of drugs which are used as Antigout drugs and explain mechanism of action of colchicine derivative.

34) Write a note on uterine stimulants.

35) Classify oral hypoglycemic agent. Write MOA of Acarbose and Sulphonyl ureas.

36) Explain mechanism of action and therapeutic uses of vasopressin.

37) Write the therapeutic uses and ADR of Timolol.

38) Classify 5-HT receptor antagonists. Write any two ADR and uses of Sumatriptan.

39) Classify calcium channel blockers. Give any two examples of second generation beta blockers with their use.

40) Write the principal pharmacological effects of Quinidine,Disopyramide and Procainamide

41) Define Matching and bracketing Bioassay. Write the procedures of insulin Bioassay.

42) Explain the mechanism of action and therapeutic uses of nitrates.

43) What is safety pharmacology? Explain its significance.

44) Give the detail account of recent drugs for the treatment of hyperlipidemia

45) Give an account of Drug treatment of osteoporosis.

Long Answer Question:

1) Classify drugs used in the treatment of congestive cardiac failure. Explain mechanism of action, pharmacological actions, therapeutic uses and adverse effects of cardiac glycosides.
2) Define diuretic. Explain mechanism of action, therapeutic uses and adverse effects of thiazide diuretics.
3) Classify types of diabetes. Explain pharmacotherapy of diabetes mellitus.
4) Enlist hormones secreted by pituitary gland. Explain pharmacology of hormones secreted by posterior pituitary gland.
5) Write the classification of antihypertensive agents. Describe the pharmacology of beta blockers.
6) Classify anti-arrhythmic agents. Explain mode of action, therapeutic uses and adverse effects of beta blockers.
7) Explain biosynthesis, storage, release, and metabolism, mode of action, pharmacological actions and therapeutic uses of thyroid hormones.
8) Describe in detail pharmacology of anterior pituitary hormone.
9) Classify NSAID. Explain in detail pharmacology of Aspirin.
10) Classify antiarrhythmic drugs. Discuss the mechanism of action, uses and adverse effects of quinidine.
11) Classify H1 antihistaminic drugs. Briefly explain about the pharmacology of H1 antihistaminic drugs.
12) Classify Antihypertensive drugs. Write details Mechanism of action, Adverse effects, and uses of Beta blocker.
13) Mentioning the control of Thyroid hormones in our body, discuss about the inter-relation between Hypothalamus and Pituitary.
14) What are selective COX-2 inhibitors? Discuss briefly their advantages over non-selective COX inhibitors.
15) Describe physiological control of blood pressure. Discuss agents which act by modulating the renin-angiotensinaldosterone system in the body.

PAH Solapur University, Solapur
Question Bank for April-2022 EXAM
Subject – Novel Drug Delivery Systems
Year – Final year, SEM – VII
Compiled by: Prof. Dr. M. G. Maniyar and Prof. Mr. A. M. Ansari

Q. Short Answer Questions (5 Marks)

1. Discuss the terminology/definitions of CRDDS
2. Give the advantages and disadvantages of CRDDS in detail.
3. Discuss the selection of drug candidates of CRDDS in short
4. Give the approaches to design Gastro retentive drug delivery systems
5. Give the approaches to design ion exchange CRDDS
6. Discuss the applications of polymers in CRDDS.
7. Give the pre-requisites of drug candidates for NDDS.
8. Discuss classification of polymers in formulation of controlled release drug delivery systems
9. Discuss properties of polymers in formulation of CRDDS
10. Discuss applications of polymers in formulation of CRDDS in short
11. Discuss definition, advantages and disadvantages of Microencapsulation
12. Discuss any two methods of Microencapsulation
13. Write a note on microspheres and microparticles
14. Discuss principles of bioadhesion
15. Discuss advantages and disadvantages of bioadhesion
16. Give a note on transmucosal permeability
17. Discuss formulation considerations of buccal delivery systems
18. Write a note on Implants
19. Write a note on osmotic pumps
20. Discuss advantages and disadvantages of implants
21. Write a note on permeability through skin
22. Discuss factors affecting skin permeation
23. Discuss permeation enhancers with examples

24. Write a note on basic components of TDDS
25. Discuss approaches of TDDS in short
26. Give advantages and disadvantages of GRDDS
27. Discuss inflatable and gastroadhesive of GRDDS
28. Discuss applications of GRDDS
29. Elaborate Nasal and Pulmonary routes of drug delivery
30. Discuss Formulation of Inhalers
31. Elaborate nasal sprays and nebulizers
32. Give the composition and classification of liposomes.
33. Describe various methods of preparation of liposomes. Give their advantages and disadvantages.
34. Write a note on ophthalmic inserts.
35. Describe the monoclonal antibodies with its applications
36. What are nanoparticles? Write methods of preparing nanoparticles.
37. State the advantages and pharmaceutical applications of nanoparticles in drug delivery system
38. Elaborate on nanoparticles and monoclonal antibodies giving their relevant applications.
39. Write the importance of IUD as contraceptive method.
40. Give examples of polymers used in IUDs, Ocuserts and Contact lenses.
41. Classify niosomes. Enlist its applications.
42. What are monoclonal antibodies? Classify them by giving relevant examples.
43. Discuss the formulation aspects of ophthalmic ocuserts.
44. What are artificial tears? Describe its formulation aspects.
45. What are the applications of targeted drug delivery systems?

Long Answer Questions (10 Marks)

1. Discuss physicochemical and biological properties of drugs relevant to controlled release formulations
2. Discuss methods of microencapsulation in detail
3. Discuss mucosal drug delivery system in detail

4. Discuss properties and applications of polymers used in CRDDS
5. Discuss implantable drug delivery Systems in detail
6. Discuss transdermal drug delivery Systems in detail
7. Discuss approaches of GRDDS
8. Discuss Formulation of Inhalers (dry powder and metered dose), nasal sprays, nebulizers
9. Define the microencapsulation. Discuss in detail coacervation nanoparticles phase separation method of microencapsulation.
10. Describe the strategies and components of targeted drug delivery systems.
11. Give the design of different types of IUDs giving by suitable examples.
12. Elaborate how liposomes are capable for entrapment of both hydrophilic and lipophillic drugs. Give its advantages.
13. Discuss the design approaches in Colon-targeted drug delivery systems.
14. Discuss approaches to design controlled release formulations based on diffusion and dissolution
15. What do mean by targeted DDS? Discuss various systems of targeted DDS

QUESTION SET QUALITY CONTROL AND STANDARDIZATION OF HERBALS
SEMISTER VIII 2021-22

SR.NO	SHORT ANSWER QUESTION (5 MARKS)
1.	Explain Physicochemical Evaluation of Crude Drug.
2.	Explain Basic Tests for Pharmaceutical Dosage forms
3.	Write Basic tests for Senna and Ipecacuanha.
4.	Write basic tests for following pharmaceutical Substances. a) Vinblastine sulphate B) Amikacin sulphate
5.	Explain Analytical Evaluation of commercial Crude drugs.
6.	What is GMP, write principals of GMP.
7.	Write rules and factor affecting on GAP.
8.	Describe good laboratory practices.
9.	Discuss WHO guidelines for on GACP of medicinal plant
10.	What is difference between GMP and cGMP
11.	Write basic test for dosage forms.
12.	Write basic test for medicinal plant material.
13.	Write objectives and regulatory members of ICH.
14.	Discuss elements of ICH.
15.	Discuss ICH stability testing guidelines.
16.	Define quality by design and write its benefits.
17.	Give goals and objective of research guideline for evaluating safety and efficacy of herbal drugs.
18.	Write stability testing guidelines of herbal drugs.
19.	Write purpose and factor affecting on stability of herbal drugs.
20.	Discuss types of stability testing methods.
21.	Give role of chromatographic technique in standardization of herbals.
22.	Give application of chromatographic technique in standardization of herbals.
23.	What is NDA? and give its importance.

24.	Discuss export registration GMP requirements.
25.	Write Parameters of Herbal Pharmacopeia.
26.	Write Parameters of IP.
27.	Compare Herbal Pharmacopeia and Indian Pharmacopeia.
28.	Write application of biological markers in standardization of herbals.
29.	Write role of chemical markers in standardization of herbals.
30.	Give guidelines for safety monitoring in pharmacovigilance.
LONG ANSWER QUESTION (10 MARKS)	
31.	Describe basic test for drugs.
32.	Write detail on quality control of herbal drugs.
33.	Explain in detail evaluation of herbal drugs.
34.	Write a note on quality assurance in herbal drug industry.
35.	Describe in detail GAP.
36.	Give details on GMP.
37.	Discuss GACP.
38.	Explain in detail ICH guidelines for quality control of herbal drugs.
39.	Write in detail research guidelines for evaluating safety and efficacy of herbal drugs.
40.	Write a note on standardization parameters of herbals.
41.	Write detail role of chemical and biological marker in standardization of herbals.
42.	Write detail on preparation documents for NDA
43.	Write stability testing guidelines and application of chromatographic techniques in standardization of herbals.
44.	Compare various Pharmacopeias
45.	Write a note on regulatory requirement of herbal medicines.

PAH Solapur university, Solapur
Third year B.Pharm (SEM VI)
Medicinal chemistry III
Syllabus pattern w.e.f 2017
Question bank

Q 1) Short Answer (5 marks)

1) Explain role of aminoglycosides.
2) Give SAR and MOA tetracyclines.
3) Classify antibiotics. Give account of beta lactamase inhibitors.
4) Give complete account of prodrugs.
5) Write in details of different types of prodrug with eg
6) Discuss SAR & MOA of 4-amino quinoline with eg
7) Write SAR & MOA of 8-amino quinoline with eg
8) Write SAR & MOA of 9-amino acridines with eg
9) Outline scheme for synthesis MOA and uses of Chloramphenicol
10) Write synthesis of following drugschloroquine, Primaquine
11) Explain role of Biguanides as effective antimalarial agents
12) Give complete account of Quinolones
13) Explain anti-tubercular antibiotics.
14) Define & classify Anti-tubercular Agents with eg
15) Write SAR & MOA of Isoniazide
16) Write SAR & MOA of Ethambutol
17) Write SAR & MOA of Ethionamide
18) Write SAR & MOA of Pyrazinamide
19) What is role of antitubercular antibiotics
20) Write synthesis Isoniozid ,& Para-amino salicylic acid
21) Define & classify antiviral agent with eg
22) Write synthesis of Acyclovir
23) Define & classify Antifungal agent with eg
24) Write a note on azole derivative & MOA of azole compound
25) Write synthesis of Miconazole &Tolnaftate
26) Define & classify Anti-protozoal Agents with eg
27) Write synthesis of Metronidazole
28) Define & classify Anthelmintics with eg
29) Write synthesis Diethylcarbamazine citrate& Mebendazole
30) Define Sulphonamide & Classify with eg
31) Write uses & contraindicated of Sulphonamide
32) Draw structure & chemical name of sulphamethizole, sulphapyriine, Sulphadiazine, sulpfixazole,sulphamethizine
33) Write a note on drug design
34) Write application of combinatorial chemistry
35) What is molecular modelling & docking?

36) What is Hammate's equation
37) Write a note on Hansch analysis
38) Give structure and use of streptomycin and ribavirin.
39) Give account of second line anti-TB agents.
40) Give SAR of quinines.
41) Write role of monobactums as antibacterial agents.
42) Draw structure and chemical name of Norfloxacine, ciprofloxacine, ofloxacine
43) Draw structure & chemical name of Thiabendazole, Albendazole, Niclosamide
44) Write a note on Folate reductase inhibitors
45) Write a note on degradation od penicillin

Q 2) Long Answer (10 marks)

1) Classify antibiotics Discuss in details SAR & MOA Of Penicillin & cephalosporin
2) Write in details of Pharmaceutical Application of Prodrug
3) Write in details of Pharmacokinetic Application of Prodrug
4) Discuss in details Life cycle of malaria & Classify Antimalerials with eg
5) Discuss SAR, USES & MOA of Para amino salicyclic acid
6) Explain RTI's as antiviral agents.
7) Discuss in details of viral replication & classify antiviral agent with eg
8) Write in details of SAR & MOA of dapsone
9) Discuss in details of different approaches used in drug design
10) Discuss physicochemical parameters used in quantitative structure activity relationship
11) Write a note on combinatorial chemistry
12) Classify antiviral agents. Explain any two classes with appropriate examples.
13) Write synthesis& uses of Sulfamethoxaole ,Dapsone, & Sulfacetamide
14) Write a note on combination treatment of Antitubercular agent
15) Write SAR & MOA of quinolones as a antiinfective agents

PAH Solapur University Solapur,

SUBJECT: Pharmaceutical Quality Assurance

B. Pharmacy Sem-VI (w.e.f. Jan 2020) (CBCS PCI-2017)

Question Bank

II. Short Answer Questions 5 marks

1) Write responsibilities of quality assurance department.
2) Explain QC test for secondary packaging
3) Define Quality Assurance and Quality Control. Distinguish between QA and QC.
4) Write about responsibilities of Quality Control department.
5) Define Drug Stability. What are the objectives and scope of stability testing?
6) How cross contamination is prevented in dispensing and production areas?
7) Discuss principles of Good Manufacturing Practices.
8) How do you audit vendor for ensuring purchase specification.
9) Write elements involved in TQM (Total Quality Management).
10) Give role of Organization and Personnel as per GMP.
11) Write elements involved in ISO 9000.
12) What is Good Warehousing Practices? Explain its key elements
13) Discuss batch formula record.
14) Define ISO. What are the principles of ISO?
15) Give scope and benefits of NABL.
16) Write Procedure for qualification of UV- Visible Spectrophotometer.
17) Define QbD. Discuss Critical Material Attributes and Critical Process Parameters.
18) Write note on scope of validation.
19) Discuss procedure for conducting non-clinical laboratory study.
20) Enlist and explain parameters used for analytical method validation.

21) Enlist in detail all Q series ICH guidelines.
22) Write quality control tests for rubber closures.
23) Explain elements involved in QbD.
24) Discuss about SOP for purchase specification.
25) Define validation and explain its types.
26) Write in detail about Master Formula Record.
27) Write importance of BFR and MFR.
28) Describe method for waste disposal in production department.
29) Define QA, QC and TQM
30) Write difference between ISO 9000 and ISO 14000.
31) Write about why SOP's are important.
32) Enlist merits and demerits of warehousing.
33) Write note on complaints and evaluation of complaints.
34) Define calibration and validation and write about general principles of calibrations.
35) Explain in detail Quality Audit, Quality Review and Quality Documentation.
36) Write about record and result and disqualification of testing facilities of Good Laboratory Practices.
37) Explain in detail validation master plan.
38) Write inter-relationship between QA, QC, GMP
39) Write process of harmonization in ICH and give QSEM guidelines.
40) Write about personnel responsibilities, hygiene and personal records.
41) Write note on utilities and maintenance of sterile areas, control of contamination in premises.
42) Write in detail Equipment selection, purchase specifications.
43) Explain maintenance involved in purchase specification and stores of raw material.
44) Write about Testing Facilities Operation, Test and Control Articles in GLP.
45) Write about calibration of pH meter and importance of validation.

III. Long Answer Questions

1 Explain ICH Q1 Guideline for Stability testing of drug and drug product.

2 Give detailed account of Deming's 14 Points Guidelines.

3 Discuss briefly about GMP Guidelines construction, maintenance and sanitation of pharmaceutical unit.

4 Explain quality control tests for glass container.

5 Explain the objectives and scope of GLP.

6 Explain in detail Quality by design.

7 Describe quality control tests for plastic container

8 Discuss in detail about principles and elements of Total Quality Management.

9 Write Procedure for NABL Accreditation.

10 Write in detail principle and steps involved in ISO registration and write advantages of ISO 9000.

11 Elaborate quality control tests for rubber closure.

12 Explain in detail environmental management system model and write standard involved in it.

13 Define Validation. Explain various parameters of Analytical Method Validation.

14 Give an account of Good warehousing practice and materials management and write about types of complaint.

15 Write about organization and personnel, facilities and equipment testing facilities of good laboratory practices.

Final Year B. Pharmacy, Sem-VII

Subject: Industrial Pharmacy-II

I) Short answer questions

1. What is pilot plant? What are its objectives?
2. Elaborate on general considerations of pilot plant scale up.
3. Define pilot, pilot plant and scale- up.
4. What is technology transfer? Write the importance of technology transfer
5. Discuss about technology transfer protocol
6. Highlight technology transfer process from R and D to production
7. Why is technology transfer required in pharma industry?
8. Write the technology transfer team members and their responsibilities
9. Discuss the reasons for technology transfer
10. Add a note on technology transfer policy
11. Discuss the key factors involved in technology transfer
12. Write the role of regulatory affairs personal
13. Briefly discuss about different regulatory authorities
14. Write the responsibility of regulatory affairs professionals
15. Discuss about non-clinical drug development
16. Write the stepwise procedure involved in IND application filing
17. Write the stepwise procedure involved in NDA application filing
18. Discuss about data presentation for FDA submissions
19. Write the importance of biostatistics in pharmaceutical product development
20. Write a note on TQM.
21. Write a note on QbD
22. Elaborate Six sigma concept.
23. Explain the term OOS.
24. Discuss in details about GLP.
25. What is ISO? What are its objectives?
26. What is NABL? Give its scope
27. Write the functions of CDSCO.
28. Elaborate about organizational structure of CDSCO.

29. What is organizational structure of SDCO
30. What is COPP?
31. What are the functions of state licensing authority.

II) Long answer questions

1. Discuss in details about supac guidelines.
2. Explain pilot plant scale up considerations for solids.
3. Explain pilot plant scale up considerations for liquids.
4. Explain pilot plant scale up considerations for semi solids.
5. Describe technology transfer agencies in India
6. Discuss technology transfer guidelines for pharmaceuticals
7. Describe in detail about investigator's brochure
8. Discuss in detail the management of clinical studies
9. Describe in detail clinical research protocol
10. Describe in detail about concept of quality and total quality management.
11. Discuss in detail about ISO 9000 and ISO14000.
12. What is quality management system? Add note on elements of TQM.
13. Write in organizational structure of CDSCO. Highlight on functions of CDSCO.

Pharmaceutical Regulatory Science

B. Pharmacy Sem-VIII (w.e.f. Jan 2021) (CBCS PCI-2017)

TOTAL MARKS: 75 **TIME: 03 Hrs**

II. Short Answer Questions (5 Marks)

1 What is federal Register? What are its objectives?

2 What is code of federal regulation? What are its objectives?

3 Add a note on contents of orange book.

4 What is purple book? Discuss contents of purple book

5 What do you mean by Bio similar agent and Interchangeable biological agent?

6 Discuss in brief part 11 of CFR.

7 Explain in brief about chapters of CFR title 21.

8 What is therapeutic Equivalency Codes? Discuss them in detail.

9 Enlist the stages of drug discovery and write about target Identification and Validation

10 Describe in brief about timeline in drug discovery process?

11 Differentiate between preclinical and clinical stages of drug development.

12 Add a note on Preclinical research in drug development process

13 What are the different stages of clinical trials?

14 What is Post marketing Surveillance?

15 What are the different non clinical activities in drug discovery?

16 What is generic drug product? How and why the concept of generics is evolved?

17 Differentiate between Innovators and generic drug product.

18 Discuss in brief about regulatory approval process for generic drug.

19 Describe various changes to approved NDA and ANDA.

20 Give timelines involved in the CDSCO NDA approval Process.

21 Describe the organizational structure of CDSCO.

22 What type of drug applications are submitted to CDSCO?

23 Add a note on State Licensing Authority.

24 Discuss in brief about TGA.

25 Write about the organizational structure of the drug regulatory agency in the EU Countries.

26 What is IEC number? What are the different requirements to obtain IEC number?

27 Discuss in brief about modules of eCTD

28 Differentiate between CTD and ACTD

29 Explain in brief parts of ACTD

30 Enlist the modules of ICH CTD. Explain any one in detail.

31 What is clinical trial Protocol? What type of information is included in protocol?

32 What is GCP Obligations? List them.

33 Add a note on IRB.

34 What is informed Consent?

35 Explain GCP obligations for Clinical Investigators

36 Explain in brief contents of clinical trial Protocols

37 Discuss safety monitoring in clinical trials.

38 What are the levels of changes in SUPAC guidance?

39 Explain in detail requirement for registration of Indian drug in overseas market.

40 What do you mean by abbreviated new drug application?

41 What is DMF? Elaborate parts of DMF.

42 Explain in detail investigators brochure.

43 What are the levels of changes in SUPAC guidance?

44 Give responsibilities and functions of Institutional Review Board.

45 Write a note on Indian scenario of generic drug products.

III. Long Answer Questions (10 Marks)

1. Explain in detail IND application.
2. What are the different stages of clinical trials? Discuss them in detail.
3. What are the stages of drug discovery? Discuss them in detail.
4. Describe in detail generic drug product development.
5. Explain in detail IND process in India?
6. Describe the ANDA approval process in India?
7. Explain in detail organizational structure and type of applications of CDSCO
8. Explain in detail the changes to approved NDA and ANDA.
9. Elaborate on various drug applications submitted to USFDA.
10. Write about DMF in the USA along with its types and status.
11. What is CTD? Explain in detail modules of CTD.
12. What is ACTD? Describe the parts of ACTD
13. Discuss in detail Clinical Trial Protocol along with its applications.
14. Discuss safety monitoring in clinical trials.
15. Explain in detail Orange book and Purple Book.

PAH Solapur University, Solapur

Question Bank

Class:- Final Year B. Pharmacy **Sem-VIII**

Subject: Biostatistics and Research Methodology

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5 Marks Questions

1. Enlist the applications of biostatistics in pharmacy.
2. Describe the various types of measures of dispersion and their significance.
3. Explain Pearson's correlation and Spearmann's correlation.
4. Describe the factors which qualifies mean to be the best measure of central tendency.
5. Write note on standard deviation and standard error of mean with suitable example.
6. Explain different methods of describing data using the measures of central tendency.
7. What is linear regression? How is it useful in pharmaceutical sciences?
8. Write a note on normal distribution of data.
9. Give examples of application of regression models in stability testing.
10. Explain types of correlation and correlation coefficient. Give suitable examples.
11. Give a brief note on multivariate regression analysis.
12. Briefly describe the different distribution patterns of data.
13. What is frequency distribution? Give its pharmaceutical applications.
14. Enlist the important characteristics of normal distribution.
15. When is median more important than mean as a measure of central tendency? Explain the same.
16. Discuss Wilcoxon Rank Sum test and Mann Whitney U test.
17. Define and explain a typical experimental study design.
18. Explain types of observational study designs/. list the characteristics of observational studies/ Classify Observational and experimental studies
19. Explain report writing in research methodology
20. What is Plagiarism? What are the needs for research?
21. Explain report writing and presentation of data.
22. What is the meaning of Ogivegraph?
23. What characteristics of data can be represented by a) Histogram b) Pie chart c) Semi-logarithmic plot.
24. How histograms, scatter plots, and semi-logarithmic plots are useful in presenting the data?
25. Describe the construction of any three types of graphical representation of statistical data with suitable examples.
26. Explain the graphical methods of representing quantitative data.
27. Describe briefly the different interventional study designs.
28. What are case studies? Why are they conducted, explain them in detail.
29. How will you design a clinical study methodologically? Explain briefly

30. Discuss briefly about designing the methodology for clinical studies.
31. Explain concept of blocking in two level factorial designs
32. What is confounding system of two level factorial?
33. Write about significance of hypothesis testing
34. Discuss basic application of MS Excel
35. Write a note on design of experiment
36. What are the uses of R-software and IBM SPSS in clinical trials?
37. Write significance of factorial design in research.
38. Discuss use of 2^2 factorial designs in research with one example.
39. Write a note use of response surface plot in optimization of product and process.
40. What is central composite design? Give one example.
41. How the central composite design differs from Box – Behnken design.
42. Discuss 2^3 factorial design with one example.
43. Write about Minitab software.
44. Explain the term blocking and confounding.
45. Write a note on historical design.

10 Marks Questions

1. What is correlation? Name different types of correlation. Which are the different measures of correlation?
2. Describe variance and standard error of mean with suitable examples.
3. Explain with suitable examples regression analysis and standard error of regression.
4. What different measures of variability are used in statistics? Describe their characteristics enlisting their statistical significance.
5. What do you understand by measures of central tendency? Describe the types of measures and their characteristics.
6. Write about the following: a) Clinical study design – Interventional studies b) Determination of sample size
7. Describe briefly the different interventional study designs
8. How do you write a report of scientific investigation and explain various methods for presentation of data?
9. Write in detail about the following: a) Histogram b) Scatter plots c) Semilogarthimic plots.
10. Explain the different phases of clinical trials.
11. How do you assign blocks in 22 and 23 factorial design?
12. What is hypothesis testing in simple linear regression model?
13. Discuss how you will manage the data in research by using MS excel.
14. Explain central composite design in detail.

15. Explain Box -Behnken design.

Question Bank

SOCIAL AND PREVENTIVE PHARMACY

Year -Final year B.Pharm semVIII

Short answer question

1. Discuss concepts and evaluation of public health.
2. Write the characteristics of positive health
3. What are the concepts of disease causation?
4. Explain various aspects of poverty and health
5. Which factors alter the daily requirement of nutrients?
6. How KWASHIORKOR and MARASMUS are different from each other?
7. Explain in detail about prevention and control of disease
8. Add a note on social causes of diseases and social problems of the sick.
9. Add a note on type of prevention.
10. What do you mean by micro and macronutrient?
11. Add a note on Balanced diet.
12. What is Malnutrition and How it is prevented.
13. Discuss objective, milestones and other facts of NLEP.
14. Add a note on Socio cultural factors related to health and disease.
15. What are effect of poverty on health.
16. Explain effects of urbanization on health and disease.
17. Make a note on personal hygiene for leading a healthy life.
18. Write the avoidable habits for better hygiene and health.
19. Write different preventive measures to prevent spread of cholera.
20. Define SARS and write the preventive measures for controlling its spread.
21. Explain in brief about transmission, prevention and control of Ebola virus disease
22. Discuss in brief prevention and control of influenza

23. Add a note on prevention and control of acute respiratory infections
24. What is malaria? How it can be prevented?
25. Add a note on mode of transmission and preventive measures for controlling spread of chicken guinea.
26. Add a note on prevention and control of dengue.
27. Add a note on mode of transmission and preventive measures for controlling spread of lymphatic filariasis.
28. Explain prevention and control of pneumonia.
29. Explain causes and preventive measures to be taken for prevention and control of hypertension.
30. Write a note on prevention and control diabetes mellitus.
31. Which factors are considered to be risky for causing diabetes mellitus?
32. How does diabetes become complicated when it progresses?
33. Which factors are considered to be risky for causing cancers?
34. What do you mean by chronic alcoholism
35. As a pharmacist how you can counsel a youth addicted to the drugs?
36. Write goal, principle and role of WHO.
37. Enlist different objective and responsibilities of Primary Health Centres in India?
38. Enlist different principles and elements of PHC.
39. Write a short note on TSC
40. Write a note on National programme for the health care for the elderly.
41. How cholera is diagnosed? What are the preventive measures to be taken into account while visiting the area where cholera is spread?
42. What factors do you consider which may contribute to attracting youth to become drug addicted
43. Explain in detail goal, activity and expected benefits of Pulse polio programme.
44. Explain in detail goals, strategies and expected benefits of National programme for control of blindness
45. Explain in detail aim, objective and strategies of National mental health program.

Long answer question

1. How do you consider pharmacists can play important role in educating society for better health?
2. What is meant by drug addiction? and write risk factors, protective factors and preventive measures for drug addiction
3. Write objective, functioning and outcomes of HIV and AIDS control programme.
4. Explain in detail objective, functioning and outcomes of National health programme for TB.
5. What are the objectives, functioning and outcome of Integrated disease surveillance program (IDSP)
6. Write an account of vitamin deficit disorder.
7. Explain in detail goal, activity and expected benefits of National programme for prevention and control of deafness.
8. Explain in detail objective, functioning and outcomes of Universal immunization programme.
9. Add a note on improvement in rural sanitation.
10. Add a note on National health intervention programme for mother and child.
11. Add a note on National family welfare programme
12. Explain main provisions of Tobacco control Act 2003.
13. Discuss strategies and challenges in Malaria control and milestones of malaria control activities in India.
14. Write a note on National Urban Health Mission
15. Write a note on Health promotion and education in school.

Question Bank

(Compiled by K A Kamalapurkar, V V More & S Sawant)

Subject –Cosmetic Science Year: Final year (SEM VIII)

Short Answer Questions

1. List out various cosmetic excepients and discuss Surfactants in brief.
2. Explain determination of Foam height in shampoo as per BIS.
3. Write applications of Surfactant in cosmetics and cosmeceuticals.
4. Discuss actives used in formulation of Deodorants.
5. Describe the formulation aspects of Antiperspirants.
6. What is deodorant? Explain their mechanism.
7. Write one formula for Mouth wash with their method of preparation.
8. Explain the cosmetics used to treat dandruff.
9. Explain Cosmetics as OTC and quasi drugs.
10. Write the application of skin care products in cosmetics and cosmeceuticals.
11. Classify Cosmetic and cosmeceuticals .
12. Explain Formulation of Conditioning shampoos.
13. Explain the role of preservatives in cosmetics
14. Explain Hair growth cycle
15. Write a note on Hair oil.
16. What are Vanishing creams? Write its advantages and disadvantages
17. Explain any four problems associated with teeth and gums.
18. Explain the formulation of oxidative hair dye system.
19. Classify sunscreens with examples.
20. Define Sunscreen. Add note on sun protection.
21. Explain in-vitro methods of evaluation of sun protection factor.
22. Explain in-vivo methods of evaluation of sun protection factor
23. Describe sunscreen regulations.
24. Write details about use of Turmeric in cosmetics.
25. Write a note on hair care herbs.
26. Write a note on skin care herbs.
27. Write in brief the role of herbs in oral care.
28. Write down BIS requirements for shampoo.

29. Write down about BIS requirements for syndet.
30. Write down about BIS requirements for tooth paste.
31. Explain measuring principle of Tewameter.
32. Write advantages and applications of Corneometer.
33. Differentiate soap and syndet bars.
34. Explain combability of hair.
35. Write a note on transepidermal water loss.
36. Write on role of aloe vera in skin cosmetics.
37. Explain the causes leading to dry skin. Discuss the cosmetics used in dry skin.
38. Explain the causes leading to oily skin. Discuss the cosmetics used in oily skin.
39. What causes Dandruff? Which cosmetics are useful in dandruff?
40. Enumerate the reasons for Acne formation. Explain the cosmetics used in Acne.
41. Enumerate the reasons for prickly heat? Explain the cosmetics used in such cases.
42. Write a note on ingredients used in Antiperspirants.
43. Write a note on Deodorants.
44. Enumerate the reasons for Body odor. Discuss the cosmetics used to prevent body odor.
45. What causes hair fall? Write a note on cosmetic ingredients used in such cases.

Long Answer Questions

1. What is Hair dye? Explain in detail PPD based Hair dye.
2. List out various cosmetic excepients. Discuss emollients and preservatives.
3. Describe the principle building blocks used in the formulation of oral care products.
4. Discuss the role of humectants and emollients in cosmetics along with their applications.
5. Compare and contrast vanishing cream, cold cream and moisturizing creams.
6. Classify rheology modifiers and humectants used in cosmetics. Write its applications.
7. Define sun protection factors. Describe all evaluation methods of SPF.
8. Write of role of cosmetic in herbs.

9. Write down about BIS for skin cream with note on Annexure –A.
10. Write in detail about principle of evaluation of cosmetics.
11. Explain in details of various properties of hairs.
12. Explain about skin color and measuring principles of skin color.
13. Differentiate between Antiperspirants & Deodorants.
14. Write an exhaustive note on hair fall & the cosmetics used to prevent the same.
15. Highlight the cosmetics problems associated with wrinkles & blemishes on skin. Add a note on Botox.

EXPERIMENTAL PHARMACOLOGY
Question Bank

1. Calculate drug required for rat and mouse when human dose is 25 mg/kg (Human km = 37, rat km = 6 and mouse km = 3)
2. Calculate volume of drug solution to be given for 205 g of rat and 27 g of mice when dose of a drug is 150 mg/kg for rat and 180 mg/kg for mouse and concentration of drug solution is 15 mg/ml.
3. Calculate drug required for rat and mouse when human dose is 30 mg/kg (Human km = 37, rat km = 6 and mouse km = 3)
4. Calculate volume of drug solution to be given for 210 g of rat and 24 g of mice when dose of a drug is 100 mg/kg for rat and 130 mg/kg for mouse and concentration of drug solution is 20 mg/ml.
5. Calculate volume of drug solution to be given for 210 g of rat and 24 g of mice when human dose of a drug is 10 mg/kg and concentration of drug solution is 5 mg/ml (Human km = 37, rat km = 6 and mouse km = 3).
6. What are recommendations for selecting animal model for the study?
7. Write the techniques of blood collection in animals?
8. What are the criteria for euthanasia in experimental pharmacology?
9. How skeletal muscle relaxant drugs are screened using experimental animals?
10. Write the procedure for screening mydriatics and miotics on rabbit eyes
11. Write different animal models used for screening antidiabetic drugs
12. How antiepileptic drugs are screened in animals?
13. Make note on rat as an experimental animal
14. Make note on mice as an experimental animal
15. Make note on rabbit as an experimental animal
16. Make note on guinea pig as an experimental animal
17. Write the screening models for antiulcer drugs
18. Define biostatistics and write its importance
19. How diuretics can be screened using animal models
20. Write the screening models for nootropics
21. Write the screening models for anti-Parkinson's drugs
22. Write the screening models for antiasthmatics
23. Write the screening models for analgesics

24. Write the screening models for antipyretics
25. Write the screening models for anti-inflammatory drugs
26. Write the screening models for general anaesthetics
27. Write the screening models for sedative and hypnotics
28. Write the screening models for antipsychotic drugs
29. Write the screening models for antidepressants
30. Write the screening models for Alzheimer's disease
31. Write the preclinical screening models for local anaesthetics
32. Write the preclinical screening models for sympathomimetics
33. Write the preclinical screening models for sympatholytics
34. Write the preclinical screening models for parasympathomimetics
35. Write the preclinical screening models for parasympatholytics
36. Write the screening models for antiarrhythmic
37. Write the screening models for antidyslepidemic
38. Write the screening models for coagulants and anti-aggregatory drugs
39. Write the screening models for anticoagulants
40. How for centrally acting analgesic drugs can be screened using animals models
41. Write a brief note on CPCSEA guidelines for laboratory animal facility.
42. Write the screening models for antiepileptic drugs antihypertensives
43. Write the importance of review of literature in biomedical research
44. What is mean by research hypothesis and write its different types
45. What are different types of Graphs used for representation of data
46. Explain different types of study designs
47. Write the importance of sham negative and positive control groups
48. What are the common routes of drug administration in laboratory animals?
49. Explain the different euthanasia techniques used in experimental pharmacology
50. Write biological name, species and family of commonly used lab animals
51. Make a note on popular transgenic and mutant animals
52. Note on Rationale for selection of animal species and sex for the study
53. What is student t-test? and write its applications in biomedical research
54. What is one way ANOVA? and write its applications in biomedical research
55. What is p value? and how it gives information about different set of data
56. What is terminal blood collection? Give some examples of terminal blood collections

	P A H SOLAPUR UNIVERSITY SOLAPUR **SUBJECT – HERBAL DRUG TECHNOLOGY** **CLASS – T Y B PHARM (SEMESTER VI)** ***QUESTION BANK***
SR.NO.	**SHORT ANSWER QUESTIONS (5 Marks)**
1.	Define herbal material, herbal preparation, and herbal medicinal product and give its sources.
2.	Explain processing of raw materials.
3.	Write a note on identification and authentication of herbal material.
4.	Give preparation method of asava and arishta.
5.	Describe preparation method of bhasma.
6.	Right basic principle of Homeopathy.
7.	What are Pesticidal residues? Write its effects on finished crude drugs.
8.	Write a note on Tridoshas and Pancha Mahabhutas theory of Ayurveda
9.	What are Ayurvedic formulations? Give examples.
10.	Describe any two specific parameters for Quality control of Arjunarista
11.	Define Nutraceuticals and it's market growth and scope.
12.	Explain roles of Nutraceuticals in cancer and diabetes.
13.	Write four different class of raw materials used in herbal Cosmetic industry
14.	Write a note on herb as a health food.
15.	Write synonyms, biological source, chemical constituent and uses of Ginger, Fenugreek, Garlic and Ashwagandha.
16.	Write synonyms, biological source, chemical constituent and uses of, Spirulina, Ginsing, Amla and Honey.
17.	Explain role of Nutraceuticals in Gastro intestinal diseases.
18.	Define herbal Cosmetic and sources of herbal raw materials.
19.	Give classification of herbal cosmetics.
20.	Write significance of herbal excipients in formulation.

21.	Explain herbal excipients colour, sweeteners and viscosity Builders.
22.	Explain sources of antioxidants and gums.
23.	Write preparation method of tablets and its evaluation.
24.	Give WHO and ICH guidelines for stability testing of herbal drugs.
25.	Define patent, IPR, farmer right and breeder's right.
26.	Explain patenting aspect in natural products.
27.	Explain responsibilities of licensing authority under drug and cosmetic act.
28.	Write a note on regulatory issues in natural products.
29.	Explain case study of Curcuma.
30.	Role of regulatory authorities in Herbal medicines.
31.	Explain scope and future aspects of herbal industry.
32.	Write a note on Herbal Mixture with method of preparation
33.	Give Schedule –T and its objectives.
34.	Write principle of GMP.
35.	Write side effects and interactions of Hypercium, and Pepper
36.	Write a note on plant based industries and Institutions works on medicinal herbs
37.	Write objectives and importance of GMP.
38.	Write Drug regulation in India.
39.	Write the role of Proper storage of Herbal drugs as per GACP.
40.	Brief the need of Health & Hygiene in manufacturing area.
41.	Mention the advantages of Cultivation of medicinal plants.
42.	Compare and contrast the herbal and non herbal cosmetics.
43.	How safety of herbals are assessed as per ICH.
44.	Role of AYUSH department in Herbal Industry.
45.	Write the scope of Phytosomes in Herbal product.
SR.NO.	**LONG ANSWER QUESTIONS (10 Marks)**
1.	Write role of ICH and WHO in assessment of herbal drugs.
2.	Describe Bio dynamic agriculture and herbal drug industry in India.
3.	Write Patenting and Regulatory requirements of natural products.
4.	Explain in detail Natural excipients.

5.	Explain infrastructure requirements of GMP.
6.	Explain components of GMP.
7.	Explain basic principles of Ayurveda and Unani system.
8.	Write a note on stability testing of herbal drugs and its importance.
9.	Explain standardization parameters of Ayurvedic formulations.
10.	Explain in detail good agriculture and collection practices.
11.	Explain herb- herb and herb- food interaction with example.
12.	Explain Schedule T and its objectives.
13.	Explain general aspects, market scope of Nutraceuticals with their importance.
14.	Write present scope of novel dosage form containing phytoconstituents.
15.	Write a note on conventional herbal formulations.

Subject – Pharmacy Practice

Class- Final year B. Pharmacy

Semester- VII

Long answer questions.

1. Explain organisational structure of hospital with block diagram.
2. Explain organisation structure of hospital pharmacy with its objectives.
3. Explain various types of adverse drug reactions with reasons.
4. Write detailed note on hospital formulary.
5. Explain role of pharmacist in medication adherence with its importance.
6. Explain in detail about factors considered during therapeutic drug monitoring.
7. Write a note on Organization, functions of the pharmacy and therapeutic Committee.
8. Write and discuss various types of classification of hospital.
9. Discuss various sources of drug information
10. Write on patient record review
11. Explain various steps for effective patient counselling.
12. Explain the role of pharmacist in community health education
13. Discuss internal and external training programs in hospital.
14. Explain in detail the various biochemical test used for assessment of liver function and kidney function.
15. Write down the features of budget and development of budget plan.

Short answer questions.

1. Explain functions of hospital in detail
2. Explain layout of hospital pharmacy
3. Explain in detail organisation structure of hospital pharmacy.
4. Define ADR and Explain the reasons of ADR
5. Explain in detail about types of drug stores
6. Describe organisation and structure of retail drug store
7. Write a note on history of hospitals
8. Explain objectives of hospital pharmacy with its functions.
9. Explain methods for detecting adverse drug reactions.
10. Write a note on in patients drug dispensing.
11. Write a note on dispensing of drugs to ambulatory patients.
12. Explain need of hospital formulary with its benefits.
13. Define TDM and explain need of TDM.
14. Explain role of pharmacist in medication adherence
15. Write a note on data to be obtained in patient medication history interview.
16. Explain various methods of material management in community pharmacy.
17. Write a note on infrastructure requirement in community pharmacy.
18. Write a note on dispensing of controlled drugs.
19. Write a note on pharmacy and therapeutic Committee
20. Discuss in detail the various roles of pharmacy and therapeutic Committee.
21. Write short note on drug information services.
22. Write on patient record review
23. Explain various precautionary cares for effective patient counselling
24. Write on prescribed medication order and their interpretation
25. Write on communication skill along with instruction and importance
26. Write a note on classification of budget
27. Write a note on implementation of budget

28. What are the requirements duties and functions of clinical pharmacist
29. Discuss the responsibilities of clinical pharmacist in drug therapy monitoring
30. Write a note on medication history
31. What are advantages and disadvantages of OTC products
32. Mention overview of global and indian OTC market
33. What are ideal requirements of drug store.
34. What are storage conditions of pharmaceuticals
35. Explain various techniques of inventory control
36. Write a note on investigational drugs, their class and importance
37. Explain the role of hospital pharmacist in handling of investigational drugs
38. Discuss various biochemical tests and their clinical significance
39. Explain in detail the various laboratory test used for urine analysis
40. Write the reasons for patient non-compliances.
41. Write short note on hospital formulary.
42. Write the contents and organization of hospital formulary.
43. Discuss about material management in community pharmacy
44. Explain role of PTC in dispensing of medication to IPD and OPD.
45. Explain inventory control and six R's of scientific purchasing of pharmaceuticals.

Mrs Reshma Vishal Pawar
Assistant Professor,
SPM's College of Pharmacy, AKLUJ

Question Bank

SUBJECT: PHARMACOLOGY II

Short Answer Question:

1) Write note on antirheumatoid drug.
2) Explain Pharmacology of Angiotensin.
3) Explain Pharmacology of Histamine.
4) Write MOA of Insulin, thyroid hormone and Sulphonyl ureas.
5) Explain Pharmacology of ACTH hormone.
6) Explain Pharmacology of PTH and Calcitonin hormone.
7) Write in detail pharmacology of Histamine.
8) Write a note on Fibrinolytic agent.
9) Classify Diuretic, Write MOA of Furosemide, Thiazide, Spironolactone.
10) Define bioassay, write its principle, application, types.
11) Explain brief pharmacology of PTH and Calcitonin hormone.
12) Classify oral hypoglycemic agent. Write MOA of Sulphonylureas, Acarbose and Rosiglitazone.
13) Write any two 5HT receptor antagonist with their uses.
14) Name any two anti-platelet drugs and their uses.
15) Define hematinic. Write any two oral iron preparations with their uses.
16) Name any two antidiuretics. Mention their uses.
17) Differentiate between the Quantal and Graded Bioassay methods with examples.
18) Quinidine should not be administered along with the digoxin- Justify.
19) Write about the pharmacology of ACE inhibitors.
20) Describe about the mechanism of action and uses of calcium channel blockers.
21) Give brief account on coagulants with their uses.
22) Write the mechanism, adverse effects and uses of spironolactone.

23) Classify 5-HT receptor antagonists. Write any two ADR and uses of Sumatriptan.

24) Write details about the Pathophysiological role of Prostaglandins (PG) and leukotriene(LT).

25) Write short answer: a) Plasma volume expanders b) Anti-diuretic hormones. c) Vitamin K.

26) Explain Endocrine and Exocrine Hormones.

27) Define Bioassay .Write the difference between Quantal and Graded Bioassay.

28) Classify calcium channel blockers. Give any two examples of second generation beta blockers with their use.

29) Define Prinzmetal's Angina. Why calcium channel blockers are used as an additional therapeutic agent along with isosorbide dinitrate for Prinzmetal's Angina.

30) Give any two examples of diuretics acting on site- IV(collecting duct.) Write their therapeutic uses.

31) Define cardiotonic drugs. Write the detail mechanism of action of Digitalis with suitable Diagram.

32) Write the Pharmacological actions, ADR and therapeutic use of Calcium Channel Blockers (CCBs).

33) Enlist the classes of drugs which are used as Antigout drugs and explain mechanism of action of colchicine derivative.

34) Write a note on uterine stimulants.

35) Classify oral hypoglycemic agent. Write MOA of Acarbose and Sulphonyl ureas.

36) Explain mechanism of action and therapeutic uses of vasopressin.

37) Write the therapeutic uses and ADR of Timolol.

38) Classify 5-HT receptor antagonists. Write any two ADR and uses of Sumatriptan.

39) Classify calcium channel blockers. Give any two examples of second generation beta blockers with their use.

40) Write the principal pharmacological effects of Quinidine,Disopyramide and Procainamide

41) Define Matching and bracketing Bioassay. Write the procedures of insulin Bioassay.

42) Explain the mechanism of action and therapeutic uses of nitrates.

43) What is safety pharmacology? Explain its significance.

44) Give the detail account of recent drugs for the treatment of hyperlipidemia

45) Give an account of Drug treatment of osteoporosis.

Long Answer Question:

1) Classify drugs used in the treatment of congestive cardiac failure. Explain mechanism of action, pharmacological actions, therapeutic uses and adverse effects of cardiac glycosides.
2) Define diuretic. Explain mechanism of action, therapeutic uses and adverse effects of thiazide diuretics.
3) Classify types of diabetes. Explain pharmacotherapy of diabetes mellitus.
4) Enlist hormones secreted by pituitary gland. Explain pharmacology of hormones secreted by posterior pituitary gland.
5) Write the classification of antihypertensive agents. Describe the pharmacology of beta blockers.
6) Classify anti-arrhythmic agents. Explain mode of action, therapeutic uses and adverse effects of beta blockers.
7) Explain biosynthesis, storage, release, and metabolism, mode of action, pharmacological actions and therapeutic uses of thyroid hormones.
8) Describe in detail pharmacology of anterior pituitary hormone.
9) Classify NSAID. Explain in detail pharmacology of Aspirin.
10) Classify antiarrhythmic drugs. Discuss the mechanism of action, uses and adverse effects of quinidine.
11) Classify H1 antihistaminic drugs. Briefly explain about the pharmacology of H1 antihistaminic drugs.
12) Classify Antihypertensive drugs. Write details Mechanism of action, Adverse effects, and uses of Beta blocker.
13) Mentioning the control of Thyroid hormones in our body, discuss about the inter-relation between Hypothalamus and Pituitary.
14) What are selective COX-2 inhibitors? Discuss briefly their advantages over non-selective COX inhibitors.
15) Describe physiological control of blood pressure. Discuss agents which act by modulating the renin-angiotensinaldosterone system in the body.

Question Bank

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Short Answer Question:

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PAH Solapur university, Solapur

Third year B.Pharm (SEM V)

Question Bank (PCI -2017 Pattern)

Subject - Medicinal chemistry II

Q1) Short Question (5 marks)

1) Give MOA of organic nitrates & Calcium channel blockers
2) Discuss in details PPIs
3) What is action potential duration
4) What are calcium channel blockers in anti-arrhythmic agent
5) Write a note on class II drug
6) Enlist histamine receptor & their location.
7) Outline synthesis of Diphenhydramine HCl, promethazine,& triprolidine
8) What are antihistamines & classify with eg.
9) Write the SAR of H_2 receptor antagonist
10) Describe structure & uses of any two drugs of H_2 receptor antagonist
11) Add a note on Bile acid sequestrants
12) What are antihyperlipidemic agent & classify with eg
13) What are cholesterol absorption inhibitor
14) Discuss in details of nicotinic acid
15) What are antihypertensive agents &Give classification with suitable eg.
16) Discuss MOA of ACE inhibitors
17) Give synthesis & uses of methyl dopate
18) Define cancer & write causes of cancer.
19) Write life cycle of cancer.
20) What is antineoplastic agents & classify with eg
21) Draw structure & chemical name of antimetabolites
22) Draw structure & chemical name of Alkylating agent
23) What are anticancer antibiotics & explain with eg.
24) Write a note on plant product.
25) Write mechanism of blood coagulation
26) Classify coagulants & write a note on Vitamin K class
27) What are anticoagulants & classify with eg.
28) Give the synthesis of warfarin
29) Write structure & uses of clopidogrel.
30) Comment on oral anticoagulants
31) Write a note on cardiac glycoside used in CHF
32) Write structure & uses of any two drugs used in CHF
33) What are positive ionotropic agents give their mechanism of action
34) Explain the role of digoxin & digitoxin in CHF
35) Write structure & MOA of Nesiritide
36) Write a note on HMG-CO-A reductase inhibitors drugs

37) Note on Digitalis.
38) Explain SAR of oral anticoagulant drugs.
39) Write synthesis of a) Disopyramide Phosphate b) Warfarin
40) Explain MOA & SAR of coagulant drugs
41) Explain MOA &SAR of Amiodarone & Sotalol.
42) Explain MOA &SAR of Female Sex Harmones
43) Note on Oral Contraceptive Drugs.
44) Explain in detail Male sex hormone
45) Explain Female sex hormone with example.
46) Note on corticosteroid drugs
47) Define and classify Oral Hypoglycemic agent
48) Note on biguinide derivative used in diabetes.
49) Write synthesis of a) Tolbutamide b) Benzocaine
50) Write a note on various insulin preparations.

Q 2) Long question (10 marks)

1) What are angina Pectoris? What are the different types of angina pectoris?
2) Write structure & uses of Amlodipine, Isosorbide, dinitrate, Ditiazem, verapamil, Nefedipine
3) What are calcium channel blockers in anti-arrhythmic agent
4) Write SAR of H1 Antihistamines.
5) Describe in details of Antimetabolites & explain any two drugs in this category,
6) Write the synthesis of Methotrexate, Mercaptopurine, Mechlorethamine (Mustine)
7) Discuss in detail MOA & SAR of Fibrates
8) Write a note on Vasodilators.
9) Explain source,chemistry & synthesis of Insulin
10) Explain MOA & SAR of sulfonyl urea derivatives with examples
11) Classify local anesthetic drugs & explain SAR of benzoic acid derivatives
12) Define and classify Steroid & Explain stereochemistry numbering, nomenclature rule for it.
13) Classify antithyroid drug & explain Synthesis ,storage and storage of thyroid harmones
14) Explain chemistry of Cardiotonic agent in detail
15) Classify anti-arrhythmic agent and explain sodium channel blockers drugs.

P A H SOLAPUR UNIVERSITY, SOLAPUR

CLASS: THIRD YEAR B. PHARMACY (SEM-V)

SUBJECT: PHARMACOGNOSY & PHYTOCHEMISTRY II

QUESTION BANK

Q. I. Answer the following questions. (5 Marks Each)

1. Explain utilization of radioactive isotopes in the investigation of biogenetic studies.
2. Explain the Isoprenoid pathway with flow chart.
3. Write a note on Lignan with suitable examples.
4. What are primary & secondary metabolites? Give therapeutic application of Secondary metabolites.
5. Write pharmacognosy of Digitalis and Senna.
6. Give qualitative chemical tests used for detection of Cardiac Glycosides.
7. Write difference between Pale catechu and Black catechu.
8. Write pharmacognosy of Bitter almond.
9. How do you isolate Curcumin?
10. Write a note on any one crude drug belongs to Umbelliferous fruit.
11. Explain analysis of Reserpine by TLC method.
12. How do you confirm saponin class of crude drugs?
13. Write industrial production and uses of Paclitaxel.
14. Write identification tests for Atropine and Diosgenin.
15. Write a note on Soxhlet Etraction process.
16. Explain microwave assisted extraction technique.
17. Define Electrophoresis. Write a note on agarose gel electrophoresis.
18. Write the pharmacognosy of any one crude drug belongs to aldehyde volatile oil.
19. Elaborate schematic representation of Shikimic acid pathway.
20. Write source and uses of: a) Belladonna b) Pterocarpus
21. Write source, chemical constituents and uses of Rauwolfia and Dioscorea.
22. Give identification tests of amber resin.
23. Write identification tests of Gentian.
24. Write identification tests Citral and Menthol.
25. Give brief account on analysis of Caffeine by thin layer method.
26. How do you confirm Siam benzoin from Sumatra benzoin?
27. Write industrial production and estimation of Diosgenin.
28. Write a note on any one crude drug having oleo-gum-resin class.

29. Write a note on Thin Layer Chromatography with its applications.
30. Explain industrial application of Electrophoretic techniques.
31. Write source, active constituent and uses of Ginger and Guggul.
32. Explain Acetate pathway in short.
33. Write source, chemical constituents and uses of Taxus and Artemisia.
34. Write industrial and therapeutic application of volatile oils.
35. Describe isolation of Menthol by distillation process.
36. Give confirmatory test for Senna and Liquorice.
37. Write adulterants of Clove.
38. How do you analyse Rutin by TLC method?
39. Write industrial production and estimation of Forskolin.
40. Draw the structure of Eugenol. Citral, Menthol, Cinnamic aldehyde and Anethol.
41. Write applications of various Chromatography techniques.
42. Write a short note on Catharanthus.
43. Write the uses of Quinine, Curcumin, Podophyllotoxin, Reserpine and Rutin.
44. Brief note on Super Critical Fluid Extraction Technique.
45. Write industrial production and therapeutic uses of Podophyllotoxin.

Q. II. Answer the following questions. (10 Marks Each)

1. Explain pharmacognostic scheme of Opium.
2. What is spectroscopy? Write the application of UV, FT-IR, NMR and Mass Spectroscopy.
3. Write source, active constituent and uses of any one crude drug of the following classes:
    a) Containing bark part
    b) Containing root part
    c) Containing flower bud part
    d) Containing fruit part
    e) Containing leaflet part
4. Discuss pharmacognostic scheme of Foxglove leaf.
5. Define Electrophoresis Add note on Agarose gel Electrophoresis.
6. Write source, active constituent and uses of any one crude drug of the following classes:
    a) Shows positive reaction with Murexide test

b) Shows positive reaction with foam test
c) Shows positive reaction with Liebermann reaction
d) Shows positive reaction with Shinoda test
e) Shows positive reaction with Vitali Morin Test

7. Describe pharmacognostic scheme of any one crude drug having purgative and laxative property.
8. Describe Industrial Production and Estimation of any one phytoconstituent used as Anti-cancer agent.
9. Write source, active constituent and uses of any one crude drug of the following classes:
    a) Belongs to Bioflavonoids class
    b) Belongs to Saponin class
    c) Belongs to Steroidal class
    d) Belongs to Anthraquinone class
    e) Belongs to phenol volatile oil class
10. What are Glycosides? Classify with suitable examples. Write a note on Rheumatism root.
11. Write source and uses of any one crude drug of the following classes: -
    a. Belonging to Labiatae Family
    b. Belonging to Burseraceae Family
    c. Belonging to Papaveraceae Family
    d. Belonging to Asteraceae Family
    e. Belonging to Rosaceae Family
12. What are Alkaloids? Classify with suitable examples. Write a note on Sarpagandha.
13. How does coriander fruit differentiate from fennel pharmacognostically?
14. Explain amino acid pathway in detail.
15. Write source and uses of any one crude drug of the following classes: -
    a. Used in the treatment of malaria
    b. Used in Psychiatry disorder
    c. Used as expectorant
    d. Used as anti-arthritis drug
    e. Used as dental analgesic

P.A.H. Solapur University, Solapur

Third Year B. Pharmacy, (Sem-V)

Subject: Industrial Pharmacy-I

I. Short answer questions

1. What is pre-formulation ? add a note polymorphism
2. Write BCS classification of drugs with suitable examples
3. Define Bulk density and write its importance in pharmacy
4. Discuss wet granulation technique
5. Discuss dry granulation technique
6. Define and classify tablets with suitable examples
7. What are granules? Explain how granules are formed
8. Write the reasons for preparation of granules
9. Add a note on tablet tooling
10. What is sugar coating? Explain the steps involved in sugar coating
11. Add a note on enteric coating materials with examples
12. What are advantages of tablet coating?
13. Explain solubility investigation and its importance in pre-formulation study
14. Write a note on manufacturing of hard gelatin capsule shells
15. Distinguish between hard gelatin capsule and soft gelatin capsule
16. Write a note manufacturing of soft gelatin capsule shells
17. Explain the concept of capsule size selection
18. Give an account on in process quality control test for soft gelatine capsules
19. Discuss in short different material used for mfg of empty gelatin capsule shells
20. What is bloom strength? Explain how is it determined?
21. Explain the different methods of polishing and finishing of capsules
22. Write the importance of base adsorption and minim/gram factor in capsule formulation
23. What are pellets? Explain different pelletization process
24. Write in brief about the essential characteristics of an ophthalmic product
25. Write method of preparation, labelling and containers for eye drops
26. Write the importance of isotonicity in parenterals
27. Discuss tip and pull sealing of ampoules
28. Add a note on HEPA filters

29. Define and classify Shampoo and add a note on requirements of shampoo
30. Enlist different methods of filling of liquid orals and explain any one method
31. Explain cold filling method of aerosols
32. Explain any two evaluation test of aerosols
33. Write note on propellants used in aerosols
34. Write note on hair dye
35. Give the principle and procedure involved in preparation of cold cream
36. Write a note on sunscreen formulation
37. Write a note on principle and procedure of formulation of emulsion
38. Write in detail evaluation parameter of suspension.
39. What is suspension? Write difference between flocculated and deflocculated suspension
40. Write the importance of pre-formulation study in the development of dosage form
41. Add a note on fluidised bed dryer (FBD) used in tablet manufacturing
42. Write about friability test and disintegration test
43. What is hardness of tablet? Name different hardness testers and draw a diagram of any one
44. Write the significance of BCS classification in development of dosage forms
45. Write a note on large volume parenterals

II. Long answer questions

1. Explain different in-process and final quality control tests for soft gelatin capsules
2. Give an detail account defects in capsule shells
3. Explain different principles of filling of hard gelatin capsules
4. Discuss the various quality control tests for parenterals
5. Discuss about production facilities and aseptic proceesing in parenterals
6. Describe various quality control tests for aerosols
7. Discuss in detail formulation and evaluation of lipsticks
8. Describe pre-formulation factors considered in the formulation of parenterals
9. Give detail note on packaging material used for pharmaceutical products
10. Write a detail note on physicochemical properties of drug substances in pre-formulation study
11. Explain working of tablet compression machine with neat labelled diagram
12. Explain in detail quality control test of tablets
13. Discuss various tablet manufacturing defects and remedies
14. Discuss various tablet coating defects and remedies
15. What is tablet coating? Explain different equipments used in tablet coating

BIOPHARMACEUTICS AND PHARMACOKINETICS
THIRD YEAR B PHARM SEM-VI
Subject code- BP-604 T
MODEL QUESTION FOR EXAM PREPARATION

A) SHORT ANSWER QUESTION. (5 MARKS EACH)

1) Define Following terms-Biopharmaceutics, Absorption, Distribution, Pharmacokinetics, Pharmacidynamic,
2) Explain in detail Passive transport process of drug absorption.
3) Explain in detail Active transport process of drug absorption.
4) What is dissolution and explain theories of Drug dissolution?
5) What are the limitations of pH partition hypothesis?
6) Give an account about presystemic metabolism.
7) What are different physiological barriers of drug distribution?
8) Explain in detail binding of drug to tissue component.
9) Explain absorption of drug from non per oral extra vascular routes.
10) What is renal excretion? Explain metabolic pathways of renal excretion.
11) Enlist and explain various factors affecting renal excretion
12) Explain in detain Enterohepatic cycle.
13) What is Bioavailability and give their Objectives.
14) Explain in detail USP apparatus of drug dissolution.
15) Write the elements of in vivo bioequivalence study protocol
16) Discuss about protein binding of drug to blood components.
17) Explain the theories of the drug dissolution.
18) Write a note on factors affecting protein-drug binding.
19) Explain pharmaceutical factors affecting rate of absorption.
20) Write note on absorption of drug from Non per oral extra-vascular routes.
21) Explain in detail about apparent volume of drug distribution.
22) Define and explain brief about renal clearance.
23) Write a note on Biliary excretion.
24) How are drugs classified according to the Biopharmaceutics Classification System?.
25) Explain in short about absolute and relative bioavailability.
26) Explain in-vitro-in-vivo correlation.
27) What are the advantages of physiological models over compartment models on what assumption are such models based.
28) Describe a typical plasma level- time curve along with its two categories of parameters.
29) Explain in brief about pharmacokinetic and noncompartmental Analysis.
30) Define compartment modeling, explain one compartment open model intravenous bolus.
31) Explain KE , $T_{1/2}$, Vd, AUC, Clt and CLR.

32) Write a short note on loading and maintenance doses and their significance.
33) Explain two compartment open model IV bolus administration kinetics.
34) Explain in short about steady state drug levels.
35) What is compartment model ? What are central and peripheral compartment ?
36) What processes of drug ADME are known to show nonlinearity? Give examples.
37) Write a note on Nonlinear Pharmacokinetics.
38) Write a note on Blood brain barrier
39) What is biotransformation. Explain need of it
40) Write applications of pharmacokinetic models.
41) Particle size and effective surface area influences drug absorption-Explain
42) Write a note on Clinical significance of protein binding of drugs
43) Write ideal features of a dissolution apparatus.
44) Write criteria is useful in assessing the need for in vivo studies:
45) Enlist pharmaco-technical factor influences drug absorption-Explain disintegration time.

B) LONG ANSWER QUESTION. (10 MARKS EACH)

1. Explain the different mechanisms of drug absorption.
2. Explain the factors affecting drug absorption.
3. Define distribution of drug? Explain tissue permeability of the drug
4. 1) Define elimination. Write a note on factors affecting renal clearance of drug.
5. Write a note on Non renal routes of drug excretion of drugs
6. Enlist different methods to enhance bioavailability and explain.
7. Write a note on measurement of bioavailability and explain about bioequivalence studies and its types.
8. Write in brief about Compartment models and their types.
9. What is pharmacokinetics? Describe in detail about types of Pharmacokinetics models
10. Explain in detail about one compartment open model I.V. Bolus administration with mathematical expression.
11. Explain two compartment open model IV bolus Kinetics of multiple dosing.
12. Describe Multicompartment models? Write a note on two compartment open model. IV bolus Kinetics of multiple dosing.
13. Describe non-linear pharmacokinetics? Write a note on various causes of non-linearity in pharmacokinetics.
14. Explain Michaelis-menten method of estimating parameters, Explanation with example of drugs
15. Draw a typical plasma conc. Time profile diagram. Define Pharmacokinetic Pharmacodynamic parameters from it.

PAH Solapur University Solapur,

SUBJECT: Instrumental Methods of Analysis

B.Pharmacy Sem-VII (w.e.f. July 2020) (CBCS PCI-2017)

TOTAL MARKS: 75 **TIME: 03 Hrs**

Question Bank

II. Short Answer Questions (5 Marks)

1) Give factors affecting flame emission.
2) Enlist and write a note on types of electronic transition in an organic molecule.
3) Write a note on calibration curve method.
4) Explain in detail deviations in Beer's law.
5) Give principle and applications of Affinity Chromatography.
6) Write a note on any two pumps used in HPLC.
7) Give principle and applications of Turbidimetry.
8) Write a note on detection and visualisation methods used in TLC.
9) Discuss practical requirements and methodology of Ion Exchange Chromatography.
10) Why Nitrogen is used as carrier gas in Gas Chromatography?
11) Explain in brief Single point standardization method.
12) What are the requirements for IR absorption? Explain in detail.
13) Give principle and applications of Gel permeation Chromatography.
14) Give principle and applications of Electrophoresis.
15) Write a note on applications of HPLC.
16) Give construction and working of any two detectors used in UV spectroscopy.
17) Give construction and working of any two flame atomizer.
18) Give principle and applications of Flame photometry.
19) Give types of molecular vibrations.
20) Define Chromatography. Give types of Chromatography.
21) Give principle and applications of AAS.

22) Describe factors affecting ion exchange.
23) Explain in brief energy level diagram of fluorescence.
24) Write a note on fluorimetric indicators and reagents.
25) Discuss practical requirements and methodology of affinity Chromatography.
26) Give principle and applications of Nephelometry.
27) Discuss in detail plate theory and rate theory in chromatography.
28) Write a note on stationery phases used in column chromatography.
29) Write in detail about fingerprint region in IR.
30) Discuss factors affecting electrophoretic mobility.
31) Define various shifts of absorption maxima with reasons.
32) Discuss development techniques of column chromatography.
33) Write a note on types of stationery phases used in paper chromatography.
34) Define auxochrome, chromophore, wavelength, wave number, frequency.
35) Give advantages and disadvantages of paper chromatography.
36) Give advantages and disadvantages of TLC.
37) Define fluorescence and phosphorescence. Distinguish between fluorescence and phosphorescence.
38) Give advantages and disadvantages of FES over AAS.
39) Write a note on instrumentation of Nephelometry.
40) Discuss different methods of preparation of TLC plate.
41) Give ideal properties of mobile phase used in column chromatography.
42) Discuss detectors used in HPLC.
43) Describe columns used in GC.
44) Give difference between TLC and HPTLC.
45) Write a note on Sources of radiation used in IR.

III. Long Answer Questions (5 Marks)

1) Explain in detail development techniques of paper chromatography.
2) Discuss in detail factors influencing fluorescence intensity.
3) Explain factors affecting Vibrational frequencies.
4) Define Beer Lambert's law and give its derivation.
5) Draw a neat labelled diagram of GC. Explain carrier gases and sampling techniques used in GC.
6) Discuss in detail interferences in AAS with suitable examples.
7) Give classification of ion exchange resins and its properties. Elaborate mechanism of ion exchange process.
8) Give construction and working of radiation sources used in UV Visible spectroscopy.
9) Explain in detail sampling techniques in IR spectroscopy.
10) Give types of IR detectors. Give construction and working of any four detectors.
11) Explain in detail Techniques of paper, gel, capillary electrophoresis.
12) Give construction and working of detectors used in Gas Chromatography.
13) Explain in detail applications of fluorescence spectroscopy.
14) Explain in detail development techniques of TLC. Write a note on detection and visualisation methods used in TLC.
15) Give difference between flame photometry and atomic absorption spectroscopy.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Final Year Bachelor of Pharmacy (Sem-VIII)

Question Bank

Subject- Pharmacovigilance

Q 2. Short Answer Questions (5 Marks)

1. Discuss the detection of new adverse drug reactions and their assessment
2. Explain international standards for classification of drugs and disease
3. Write the methods which are involved in pre-approval phase of drugs
4. Discuss adverse drug reaction reporting process in India
5. Summarize ICH guidelines for individual case safety report
6. Explain CIOMS requirements for adverse drug reaction reporting
7. Why drug safety monitoring is important?
8. Give a short note on history and development of pharmacovigilance
9. Discuss the requirements to report adverse drug reactions for pharmacovigilance program in India
10. Explain in brief establishment of pharmacovigilance program in the hospital
11. Discuss in detail anecdotal reporting and intensive monitoring studies
12. Write a short note on Bayesian method
13. Discuss briefly management of adverse drug reaction
14. Write a note on drug safety monitoring board
15. List out the basic drug information resources in pharmacovigilance in India
16. Define daily defined dose and write a note on anatomical, therapeutic, chemical and daily defined dose index (ATC-DD index)
17. Explain in detail about MedDRA structure and standardized MedDRA queries
18. What are the causes of vaccination failure?
19. What are the steps of communication under pharmacovigilance program of India?
20. Role of CDSCO in pharmacovigilance
21. Explain Eudravigilance medicinal product dictionary
22. How will you investigate adverse events following immunization?
23. Write a note on risk benefit assessment of vaccine
24. What are the factors to be considered for the drug safety evaluation in Geriatrics?
25. Explain periodic safety update reports and give importance of safety monitoring of drug
26. Discuss briefly clinical phase of safety data generation
27. Mention the role of contract research organization
28. Explain CIOMS requirements for ADR reporting

29. Importance of safety monitoring of medicines
30. Enlist the CIOMS I to VIII working groups
31. Explain briefly Schedule Y of D&C Act
32. Explain how to register a clinical trial in India
33. Write a short note on SUGAM portal
34. Describe the responsibilities of sponsor and investigator
35. What are the steps to report serious adverse drug reaction in India?
36. Write note on WHO international drug monitoring program
37. Role of Pharmacist in management of ADRs
38. Discuss in detail drug safety evaluation in pregnant and lactating women
39. Explain pre- marketing and post marketing clinical trials
40. Write a note on post approval expediated reporting
41. How we assess causality
42. Explain the role of registries of active pharmacovigilance process
43. Describe the sections of CIOMS form in detail
44. Write a short note on genetics related adverse drug reaction with example
45. Discuss the drug safety crisis management communication process

Q 3. Long Answer Questions (10 Marks)

1. Define adverse drug reactions. Discuss in detail causality, severity and seriousness assessment of ADRs
2. Write in detail about spontaneous case reports and case series
3. Describe establishment and operation of drug safety department in pharmaceutical industry
4. Discuss WHO- UMC causality assessment method and probabilistic method
5. Differentiate between retrospective and prospective cohort study
6. Describe in detail WHO-DD dictionary components
7. Discuss in detail WHO-adverse reaction terminologies
8. Describe in detail spontaneous report and case series process
9. Explain objectives and principles of good clinical practice
10. Write in detail pharmacogenomics of adverse drug reaction
11. Explain the drug event monitoring program and write short note on active surveillance method
12. Give an exhaustive account on effective communication in pharmacovigilance
13. Describe safety data generation process of pre-clinical phase
14. Explain in detail comparative observational studies
15. Give an exhaustive note on drug safety evaluation in special population

P A H SOLAPUR UNIVERSITY, SOLAPUR

CLASS: SECOND YEAR B. PHARMACY (SEM-IV)

SUBJECT: PHARMACOGNOSY & PHYTOCHEMISTRY I

QUESTION BANK

Q. I. SHORT ANSWER QUESTIONS

1. Write current and future scope of Pharmacognosy.
2. Define vegetable drugs. Classify with suitable examples.
3. Differentiate organized crude drug and unorganized crude drug.
4. Write a brief note on Taxonomical system of classification.
5. Brief note on parameters studied under organoleptic method of evaluation.
6. Enlist qualitative chemical tests used for detection of Alkaloids, Tannins, Volatile oils, Steroids and Carbohydrates.
7. Write any five parameters to be studied under microscopical method of evaluation.
8. Write a note on types of camera lucida.
9. Enlist different parameters studied under Biological Method of Evaluation.
10. Explain micrometry with its importance.
11. Define stomata. Classify with suitable examples.
12. Write the advantages and disadvantages of cultivation.
13. Write a note on Polyploidy.
14. Enlist different techniques of cultivation. Write a note on Sexual method of propagation.
15. Brief account on Storage of Crude Drugs with suitable examples.
16. Write a note on Drying of DONO.
17. Add a note on Hybridization.
18. Brief account on asexual method of propagation.
19. Explain role of plant hormones in the cultivation of medicinal plants.
20. Explain different types of mutation with its application.
21. Write importance of PTC in pharmacognosy.
22. Enlist different culture techniques. Write a note callus culture.
23. Add a note on protoplast culture with its applications.
24. What do you mean by suspension culture? Write its applications.
25. Brief note on general requirements for the establishment of PTC laboratory.
26. Write basic theories involved in the Chinese system of medicine.

27. Add a note on Unani system of medicine.
28. Define Alkaloids. Write qualitative chemical tests used for the detection of alkaloids.
29. Define Tannins. Classify with suitable examples.
30. Classify Resins with suitable examples.
31. Write the general properties of Glycosides.
32. Define Natural fibres. Write its importance.
33. Write source, chemical constituents and uses of Cotton and Gunny.
34. Write a note on Honey.
35. What are proteolytic enzymes? Write the production of Papain.
36. Write the applications of Papain, Bromelain, Serratiopeptidase, Urokinase and Streptokinase.
37. Write a note on Gelatine.
38. Explain production of Serratiopeptidase with its pharmaceutical applications.
39. Write source, chemical constituents and uses of Castor oil and Beeswax.
40. Brief account on Chaulmoogra oil.
41. Define marine drugs. Classify with suitable examples.
42. Differentiate Acacia and Agar.
43. Write qualitative chemical tests used for the detection of Carbohydrates.
44. Brief note on packing of DONO.
45. Define the terms Carminative, Expectorant, Febrifuge, Analgesics and Astringent.

Q. II. LONG ANSWER QUESTIONS.

1. Discuss Pharmacological System of Classification with its merits and demerits.
2. Eplain Chemical System of Classification with its merits and demerits.
3. Enlist various techniques of Evaluation. Write a note on Physical method of evaluation.
4. Enlist different leaf constants. How does Stomatal Number differentiate from Stomatal Index?
5. Define adulteration. Explain its types with suitable examples.
6. Describe any four parameters of chemical method of evaluation.
7. Enlist factors affecting cultivation technology. Write a note on Exogenous factors.
8. Describe different stages involved in the processing of crude drugs.
9. Write source, active constituent and uses of any one crude drug of the following classes:

a) Used as a binding agent
b) Used as a solidifying agent
c) Used as a sweetening agent
d) Used as a cathartic
e) Used as antileprotic

10. Discuss Ayurvedic system of classification.
11. Describe Homeopathic system of classification.
12. Classify glycosides with suitable examples.
13. Define volatile oils. Classify with suitable examples. Write its industrial and medicinal applications.
14. Write pharmacognostic scheme of Agar.
15. Explain method of production of Bromelain and Streptokinase with its medicinal uses.

Punyashlok Ahilyadevi Holkar, Solapur University, Solapur

Year: - Second Year B.Pharm

Semester: - IV

Subject:-Medicinal Chemistry-I

Q.1) Short Question (5 marks)

1. What is Phase I biotransformation. Discuss any two oxidative reactions.
2. Write the factors affecting drug metabolism. Write a note on protein binding.
3. What is Phase II biotransformation? Discuss any two conjugation reactions.
4. Explain the role of ionization, bioisosterism, chelation, partition coefficient.
5. Explain the mechanism of action and uses a) Terbutaline b)Ephedrine c)Methysergide d) Atenolol.
6. What are indirect acting sympathomimetic agents? Write the structure and uses of any one drug.
7. Write about cholinergic receptors their types and functions. Write the biosynthetic pathway of acetylcholine.
8. Outline the synthesis and uses of (a) Dopamine (b) Propranolol (c) Tolazoline
9. Write a note on Adrenergic antagonist draw the structures & uses of
   a) Atenolol b) Prazocin c) Labetalol
10. Explain the mechanism of action and uses of a)Esmolol b) Xylometazoline c)Prazocin d)Pseudoephedrine.
11. Give the SAR of B-adrenergic blocking agents. Outline the synthesis of propranolol.
12. Write the structure and uses of a) Dobutamine b)Metraminol, c) Propylhexedrine, d) Salbutamol
13. What is catecholamine? Mention any two important neurotransmitters Catecholamines.
14. Discuss the role of reversible and irreversible cholinesterase inhibitors as medicinal Agents.
15. Explain the biosynthesis of acetylcholine.
16. Classify cholinergic receptors. Write a note on their distribution and function.
17. Write the structure of atropine. Discuss its mechanism of action, uses and side effects.
18. Draw the structure of Dicycloamine Discuss its mechanism of action, uses.
19. Write the synthesis of Cyclopentolate. Discuss its mechanism of action, uses and possible side effects.
20. Draw the structures of a) acetylcholine b) atropine c) Dicycloamine d) Scopolamine e) Nicotine
21. Classify anticholinergic agents with examples.

22. Write the structure and uses of Malathion
23. Discuss the SAR of Barbiturates.
24. Draw the structures and uses of Promazine Hydrochloride, Triflupromazine and Trifluoperazine.
25. Discuss the structure and uses of Phenothiazine ring analogues.
26. Write the structure of Hydantoin and Oxazolidine diones.
27. Write the structure and uses Beta amino ketones as CNS depressants.
28. Write the structure and specific uses of phenobarbital with uses.
29. Discuss GABA receptor.
30. Give the structure and specific uses of Lorazepam.
31. What is dissociative anaesthetic? Write synthesis and uses of ketamine hydrochloride,
32. What are Narcotic antagonists? Write the structure, uses and demerits of any two. Narcotic antagonists.
33. Discuss chemistry of morphine molecule.
34. Write the structure and specific uses Loperamide hydrochloride
35. Write the structure, uses a)Indomethacin b)Aspirin c)Naproxen
36. Write the SAR of Anthranilates.
37. Add a note on salicylates
38. Discuss the Anilides as a class of NSAID's.
39. What are inhalation anaesthetic? Give the mechanism of action and relevant structures.
40. What are xenobiotic? Give the factors affecting on drug metabolism.
41. Explain the role of Cytochrome P-450 in biotransformation.
42. Explain hydrogen bonding and protein binding.
43. Discuss optical and geometrical isomerism in relation to biological action.
44. What is biotransformation? Give its importance? What are the sites of biotransformation?
45. Describe cholinergic receptors, their function and distribution.

Q.2) Long Question (10 marks)

1. Define and classify adrenergic agents? Discuss adrenergic blocking agents in detail and give the synthesis of propranolol.
2. Give the biosynthesis and metabolism of nor-adrenaline. Write the synthesis of Salbutamol and phenylephrine.
3. Classify adrenergic antagonists with suitable example in each class along with Structure. Write the synthesis of Tolazoline.
4. Define, classify and write the SAR of adrenergic agents and give the synthesis of Phenylephrine.
5. Describe the physiochemical properties of a drug for its biological action with suitable examples.
6. Define drug metabolism. Explain phase I & phase-II reactions.
7. What are adrenergic drugs? Draw the mode of action, uses, structures & synthesis of salbutamol and dopamine.
8. Discuss on different beta receptor antagonists and write the limitations of non-selective beta blockers.
9. Discuss SAR of parasympathomimetic agents.
10. Discuss SAR of cholinolytics agents.
11. Write the SAR of benzodiazepines. Give the synthesis of diazepam
12. Explain the SAR of Phenothiazines. Write the synthesis and uses of chlorpromazine Hydrochloride.
13. Differentiate between the term anxiolytics, sedative, hypnotic and tranquilizer. Discuss the synthesis of diazepam.
14. Classify NSAIDS with example in each class. Write the synthesis of Ibuprofen
15. Explain the SAR Morphine with respect to peripheral modification.

Punyashlok Ahilyadevi Holkar, Solapur University, Solapur

Year:- First year B.Pharm

Semester:- II

Subject:- Pharmaceutical Organic Chemistry-I

Short Answer Questions (5 marks)

1. Explain Aldol condensation.
2. Explain Crossed Aldol condensation.
3. Explain Cannizzaro reaction.
4. Explain Crossed Cannizzaro reaction.
5. Explain Benzoin condensation.
6. Explain Perkin condensation.
7. Give the structure and uses of acetone, vanillin and hexamine.
8. Give the structure and uses of formaldehyde and paraldehyde.
9. Give the structure and uses of chloral hydrate and hexamine.
10. Give the structure and uses of ethanolamine and amphetamine.
11. Give the structure and uses of acetic acid and lactic acid.
12. Give the structure and uses of tartaric acid and citric acid.
13. Give the structure and uses of succinic acid and oxalic acid.
14. Write a note on Acidity of carboxylic acids.
15. Write a note on Basicity of amines.
16. Define the terms with suitable example a) Diastereoisomers b) Meso compounds c) Enantiomers.
17. Distinguish between configuration and conformation with example.
18. Give the nomenclature and reactions of alkynes.
19. Describe the methods of preparation of alkenes
20. Describe the Methods of preparation of alkane
21. Explain tutomerism and metamerism in detail giving suitable example.
22. Explain structural isomerism with example.
23. Explain isomerism in organic compounds.
24. Discuss how structural formula can be written from the given IUPAC name.
25. Define and classify isomers with example.

26. What are the alkane ? What are their general formula?classify with example.
27. Enlist uses of paraffins .
28. Explain Saytzeffs rule and Hoffman's rule with example.
29. Write down the halogenation of alkane with factor affecting on halogenation.
30. Write note on Ozonolysis reaction.
31. Define diene and classify them with suitable examples.
32. Give the mechanism for the reaction of 1,3-butadiene with HBr.
33. Write a short note on diels alder reaction and its uses.
34. Explain in detail free radical addition reaction of conjugated diene.
35. Write any three method of preparation of diene and write stability of conjugated diene.
36. Write to the chemical reaction of alkyl halides.
37. Write to the method of preparation of alkyl halides.
38. Give difference between SN1 and SN2 reaction.
39. Give difference between elimination reaction and substitution reaction.
40. Draw the structure and uses of trichloroethane and chloroform.
41. Write to the chemical reaction of alcohol.
42. Explain Lucas and dichromate test.
43. Draw the structure and uses of the glycerol and chlorobotanol.
44. Give the structure and uses of ethanol and methanol.
45. Give the structure and uses of cetosteryl alcohol and benzyl alcohol.

Long Answer Question (10 marks)

1. Explain in detail aliphatic amines.
2. Explain in detail aldehydes
3. Explain in detail ketones
4. Explain in detail carboxylic acids
5. Explain in detail nucleophillic addition and electromeric effect with examples.
6. What is IUPAC system of nomenclature for organic compound? What are its common rule?
7. Discuss in detail the systematic IUPAC nomenclature rule for various classes of

compound classified as according to their functional group giving suitable example for each class.

8. Write a note on following

   a) Markonikoff's rule

   b) Peroxide effect

   c) Ozonolysis

9. Give the stability of alkenes and give factors affecting the stability of an alkene.

10. Define elimination reaction. Discuss the Kinetics and mechanism of E^1 and E^2 Reaction with suitable example.

11. Explain in detail electrophilic addition reaction of 1,3- butadiene and write any five chemical reaction of 1,3-butadiene.

12. Illustrate the factor that affect on SN1 and SN2 reaction with suitable example.

13. Explain the mechanism for SN1 reaction. Write its kinetic and stereo chemical evidence to support.

14. Explain the mechanism for SN2 reaction. Write its Kinetic and stereo chemical evidence to support.

15. Write any five method of preparation of alcohol. How will you distinguish between primary, secondary and tertiary alcohol?

Punyashlok Ahilyadevi Holkar, Solapur University, Solapur

Class: B.Pharm Second year, Semester-IV

Subject: Physical Pharmaceutics-II

Q.1) Short Question (5 Marks)

1. Define Angle of Repose. Explain its methods for determination.
2. Discuss in detail weight distribution and number distribution curve.
3. Explain Principle and working of Sieve Analysis Method.
4. Discuss in detail principle and working of coulter counter method.
5. Write in detail working and principle of Andersen Pipette.
6. Explain in detail principle and working of optical microscopy method.
7. Explain in detail Principle and working of Air Adsorption method.
8. Define porosity. Give its applications
9. Define colloids. Give its advantages and disadvantages.
10. Explain different methods of Purification of colloids.
11. Write note on Association colloids.
12. Describe in detail stability of colloids.
13. Explain in detail mechanism of protective action of colloids.
14. Discuss in detail methods for preparation of lyophobic sol.
15. Define CMC. Give its mechanism.
16. Distinguish between lyophobic colloids and Lyophillic colloids.
17. Discuss in detail kinetics properties of colloids.
18. Write in detail formulation aspects of Suspension
19. Define suspension. Give its classification in detail.
20. Discuss in detail methods of preparation of Emulsion.
21. Explain in detail mechanism of emulsification.
22. Explain in detail identification tests for Emulsion.
23. Distinguish between Flocculated suspension and Deflocculated suspension.
24. Explain in detail physical stability of emulsions.
25. Write note on preservation of emulsion
26. Discuss in detail physical stability of Suspension.

27. Define Rheology. Give its importance.
28. Discuss in detail Newtonian fluids with examples.
29. Define Viscosity. Give its types.
30. Explain in detail non-newtonian fluids with examples.
31. Write in detail principle and working of Cup and Plate method.
32. Write in detain principle and working of cone and plate method.
33. Discuss in detail principle and working of Falling sphere viscometer.
34. Discuss in in detail principle and working of Ostwald's viscometer.
35. Write note on: Pseudoplastic system.
36. What is meant by rheology? Describe two applications of the same.
37. Differentiate between Elastic deformation and Plastic deformation
38. Describe the factors affecting on the rate of Chemical Reaction.
39. Differentiate between order of reaction and molecularity of chemical reaction.
40. Explain in detail physical degradation of pharmaceutical products.
41. Give the significance of Arrhenius equation in calculation of shelf life
42. Describe in detail different storage conditions of pharmaceutical dosage forms.
43. Discuss in detail influence of temperature on drug decomposition.
44. Give the limitation of accelerated stability testing of drug.
45. Write note on Accelerated stability testing

Q.2) Long Question **(10 Marks)**

1. Discuss the electrical properties and kinetic properties of colloids
2. Explain different methods of preparation and purification of colloids.
3. Explain different purification methods and protection of colloids.
4. Define Viscosity. Classify different viscometers with examples. With the help of neat diagram explain the principle and working of any one single point viscometer.
5. With the help of neat diagram explain the working principle of Cup & bob and Cone & plate viscometer with its advantages and disadvantages.
6. Define Newtonian flow. Explain different types of Non-newtonian flow with its examples
7. Discuss in detail the theories of emulsion.
8. Explain in detail interfacial properties of suspended particles.

9. Discuss formulation parameters of suspension.
10. Discuss in detail any two methods used for determination of Particle size and size distribution.
11. Enlist fundamental properties of powder. Describe in detail derived properties of powder.
12. What do you mean surface area of Particle? Explain different methods for determination of Surface area of particles.
13. Explain in detail methods used for determination of order of reaction.
14. Discuss the application and limitations of Arrhenius equation in the stability testing of a Pharmaceutical.
15. Discuss the methods of storage of drugs with suitable examples.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Year: First year B.Pharm.

Semester: I

Subject: Human Anatomy and Physiology- I

Q.1) Short answer Question (5 marks)

1. Define Anatomy and Physiology. Write in detail about structural levels of organization.
2. How many body systems are present in the body? Write in detail.
3. What is negative feedback mechanism? Explain with any one example.
4. What is cell junction? Explain with its types in detail.
5. What is cell communication? Explain its general principles.
6. What is intracellular signaling pathway activation by extracellular signal molecule?
7. Classify connective tissue and describe with diagram.
8. Write functions of epithelial and connective tissue.
9. Explain the types of epithelial tissue in detail with diagram.
10. Describe the structure of skin with the help of a neat diagram.
11. Write a note on functions of skin.
12. Write a note on divisions of skeletal system. What are different types of bones?
13. Explain in detail bones of axial and appendicular systems and their functions.
14. Describe the microscopic anatomy of sarcomere of skeletal muscle.
15. Draw a flowchart describing the sliding filament theory of muscle contraction.
16. Write a note on Write in detail neuromuscular junction.
17. Classify the joints with suitable examples.
18. Write a note on different types of joint movements
19. Describe the composition of blood and enlist its functions.
20. Define hemopoeisis and erythropoeisis. Explain the process of hemoglobin formation.
21. Write a note on ABO blood grouping system. Add a note on compatibility of different blood groups.
22. Describe the anatomy of different types of WBC.
23. Give normal values of RBC and Hemoglobin. Write a note on anemia.
24. Describe the anatomy and functions of erythrocytes.

25. Write a note on lymphatic circulation. Enlist the functions of lymphatic system.
26. Describe the anatomy of lymph node with a neat labeled diagram.
27. Describe the anatomy of spleen with a neat labeled diagram.
28. Describe the structure of sympathetic and parasympathetic innervations.
29. Explain the functions of sympathetic nervous system.
30. Explain the functions of parasympathetic nervous system.
31. Describe the anatomy of eye with a neat labeled diagram.
32. Describe the anatomy of taste buds.
33. Explain the physiology of gustatory sensation.
34. Describe the physiology of olfactory sense.
35. Explain the physiology of auditory sensation with emphasis on role of small bones in internal ear.
36. Draw a neat labeled diagram of heart.
37. Draw a flowchart to describe blood circulation.
38. Write a note on structure of artery and vein.
39. Define- a) Cardiac cycle b) Stroke Volume c) Heart rate d) Cardiac output e) End diastolic volume
40. Describe normal Electrocardiogram. Give significance of each wave.
41. Describe the elements of conduction system of heart.
42. Define blood pressure, systolic BP, Diastolic BP and Mean Arterial BP. Give their normal values.
43. Draw a neat labeled diagram of impulse conduction system of heart.
44. Explain the regulation of heart rate by autonomic nervous system.
45. Define congestive heart failure, angina pectoris, cardiac arrhythmia, hypertension and hypotension.

Q.2) Long Answer Question (10 marks)

1. What are the transport mechanisms of cell? Explain in detail with diagram.
2. Write in detail about structure and function of cell and draw neat labeled diagram of cell.
3. What are the basic life processes and explain homeostasis.

4. Describe the anatomy of sarcomere in detail with special emphasis on different components of myo-fires.
5. Write the types of bone and explain in detail axial and appendicular bone and its function.
6. Write in detail about neuromuscular junction. Describe the physiology of muscle contraction.
7. Describe the process of haemostasis in detail.
8. Write a note on blood grouping system. Explain in detail- Erythroblastosis foetalis?
9. Give composition of blood in detail. Explain the functions of each formed element.
10. Differentiate between structure and functions of sympathetic and parasympathetic nervous systems.
11. Describe the anatomy of eye with a neat labeled diagram. Add a note on physiology of optic sensation
12. Describe the anatomy of ear with a neat labeled diagram. Add a note on physiology of auditory sensation
13. Describe the anatomy of heart in detail. Describe the blood flow through heart.
14. Describe events in Cardiac Cycle.
15. Define Cardiac output. Describe the factors regulating Cardiac output.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

YEAR: First year B.Pharm.

Semester: II

Subject: human Anatomy and Physiology- II

Q.1) Short answer Question (5 marks)

1. Give structure and function of cerebellum.
2. Give structure and function of cerebrum.
3. Explain the importance of the cerebrospinal fluid and write note on flow of CSP.
4. Discuss electrophysiology of nervous system.
5. What are neurotransmitters? Give any five examples of neurotransmitters.
6. Discuss about action potential of nerve fiber.
7. Write a note on meninges and cerebrospinal fluid.
8. Define nervous system. Add a note on reflex action.
9. With a neat labeled diagram, describe anatomy of stomach.
10. Explain anatomy of small intestine.
11. Explain anatomy of large intestine with its function.
12. Explain digestion of carbohydrate and protein.
13. Explain formation and function of ATP.
14. Define Basal Metabolic Rate. Enlist the factors influencing of BMR.
15. Describe in detail- salivary gland.
16. Explain in detail about acid production in stomach and regulation of acid production through Parasympathetic nervous system.
17. Explain anatomy and enlist the functions of liver.
18. Describe the role of pancreas in the digestive system.
19. Enlist the functions of kidney.
20. Draw a neat labeled diagram of urinary system.
21. Draw a neat labeled diagram of nephron.
22. Explain the process of glomerular filtration.
23. Draw a neat labeled diagram of respiratory system.
24. Describe the anatomy of lungs.
25. Explain the process of gas transport at alveolar-capillary membrane.
26. Describe the anatomy of bronchial tree.
27. Define- Tidal volume, Vital Capacity, Inspratory Reserve Volume, Expiratory Reserve Volume and Anatomic Dead space.
28. Write a note on hormones secreted by pancreas.
29. Classify hormones. Explain the mechanism of hormones.
30. Describe the physiological role of pineal secretion.

31. Explain the hormonal regulation of blood calcium level.
32. Enlist the hormones secreted by adrenal gland. Describe actions of medullary hormones.
33. Write a note on regulation of thyroid hormone release.
34. Write a note on regulation of insulin and glucagon release.
35. Describe the structure of adrenal gland.
36. Write a note on diabetes mellitus and diabetes insipidus.
37. Give functions of sex hormones.
38. Draw a neat labeled diagram of male reproductive system.
39. Draw a neat labeled diagram of female reproductive system.
40. Describe the anatomy of testis..
41. Write a note on the anatomy of ovary.
42. Explain in detail- the physiology of spermatogenesis.
43. Explain in detail- the physiology of oogenesis.
44. Write a note on structure of DNA.
45. Write a note on genetic pattern of inheritance.

Q.2) Long Answer Question (10 marks)

1. What is nervous system? Classify it and explain distribution and function of each division.
2. With a neat labeled diagram describe the anatomy and functions of spinal cord.
3. Give the organization of nervous system. Add note on physiology of nerve fiber.
4. Draw neat labeled diagram of digestive system. Discuss anatomy and physiology of liver.
5. Describe the structure and functions of small intestine and large intestine in detail.
6. Describe digestion and absorption of nutrients in GIT.
7. Describe the physiology of urine formation.
8. Describe the physiology of pulmonary ventilation with the help of Boyle's law.
9. Explain the physiology of internal and external respiration.
10. Describe the Renin-Angiotensin-Aldosterone Pathway in detail.
11. Discuss the hormones secreted by pituitary gland and their principal actions.
12. Write a note on hormones secreted by thyroid gland and their principal actions. Add a note on hypothyroidism and hyperthyroidism
13. Describe the anatomy of male reproductive system.
14. Describe the anatomy of female reproductive system.
15. Write a note on physiology of menstruation.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

YEAR: First year B.Pharm.

Semester: II

Subject: human Anatomy and Physiology- II

Q.1) Short answer Question (5 marks)

1. Give structure and function of cerebellum.
2. Give structure and function of cerebrum.
3. Explain the importance of the cerebrospinal fluid and write note on flow of CSP.
4. Discuss electrophysiology of nervous system.
5. What are neurotransmitters? Give any five examples of neurotransmitters.
6. Discuss about action potential of nerve fiber.
7. Write a note on meninges and cerebrospinal fluid.
8. Define nervous system. Add a note on reflex action.
9. With a neat labeled diagram, describe anatomy of stomach.
10. Explain anatomy of small intestine.
11. Explain anatomy of large intestine with its function.
12. Explain digestion of carbohydrate and protein.
13. Explain formation and function of ATP.
14. Define Basal Metabolic Rate. Enlist the factors influencing of BMR.
15. Describe in detail- salivary gland.
16. Explain in detail about acid production in stomach and regulation of acid production through Parasympathetic nervous system.
17. Explain anatomy and enlist the functions of liver.
18. Describe the role of pancreas in the digestive system.
19. Enlist the functions of kidney.
20. Draw a neat labeled diagram of urinary system.
21. Draw a neat labeled diagram of nephron.
22. Explain the process of glomerular filtration.
23. Draw a neat labeled diagram of respiratory system.
24. Describe the anatomy of lungs.
25. Explain the process of gas transport at alveolar-capillary membrane.
26. Describe the anatomy of bronchial tree.
27. Define- Tidal volume, Vital Capacity, Inspratory Reserve Volume, Expiratory Reserve Volume and Anatomic Dead space.
28. Write a note on hormones secreted by pancreas.
29. Classify hormones. Explain the mechanism of hormones.
30. Describe the physiological role of pineal secretion.

31. Explain the hormonal regulation of blood calcium level.
32. Enlist the hormones secreted by adrenal gland. Describe actions of medullary hormones.
33. Write a note on regulation of thyroid hormone release.
34. Write a note on regulation of insulin and glucagon release.
35. Describe the structure of adrenal gland.
36. Write a note on diabetes mellitus and diabetes insipidus.
37. Give functions of sex hormones.
38. Draw a neat labeled diagram of male reproductive system.
39. Draw a neat labeled diagram of female reproductive system.
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42. Explain in detail- the physiology of spermatogenesis.
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Q.2) Long Answer Question (10 marks)

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Punyashlok Ahilyadevi Holkar, Solapur University, Solapur

Year: - First year B.Pharm

Semester: - I

Subject:-Pharmaceutics I

Q.1) Short Question (5 marks) (Total 45 Questions)

1. Write the differences between liniment and lotion.
2. Define and classify monophasic liquid dosage forms.
3. Write a short note on gargles, mouth washes and throat paints with an example, formula for each.
4. Explain different mechanism of dermal penetration of drugs.
5. What is gel? Discuss the methods for evaluation of semisolid dosage forms.
6. Define cream and paste. Write its preparation and evaluation.
7. Define syrup. Write its types, method of preparation and formulation.
8. Write a note on identification tests for emulsions with example.
9. Define suspension. Write its method of preparation.
10. Define semisolid dosage form. Write its advantages and disadvantages.
11. Differentiate mouth washes and Gargles.
12. Define and classify emulsifying agent.
13. What are isotonic solutions? Write the importance of isotonicity
14. Calculate the quantity of sodium chloride required to prepare 400 ml of 0.9 % solution
15. Calculate the amount of 70%, 60%, 40% and 30%, alcohol should be mixed to get 55% alcohol
16. Define and classify powders with suitable examples
17. Write advantages and disadvantages of powders
18. Explain geometric dilution method of mixing
19. Add a note on eutectic mixtures
20. Write the method of preparation of effervescent powders
21. Write the formulation of dusting powders
22. What are suppositories? Write advantages and disadvantages of suppositories
23. What is displacement value? Explain how is it calculated?
24. Explain the different methods of preparation of suppositories
25. Define and classify incompatibility
26. Enumerate the Q.C. tests for suppositories
27. Discus the therapeutic incompatibilities with examples
28. Write advantages and disadvantages of liquid dosage forms
29. Add a note on equipment used for preparation of liquid dosage forms
30. What are efflorescent and hygroscopic powders?
31. Discuss historical perspective of Pharmacy profession in India in relation to pharmacy education.
32. Discuss historical aspect of Pharmaceutical industry and organization.
33. What are career opportunities in pharmacy?
34. Write a note on Indian Pharmacopoeia.
35. Write a note on British Pharmacopoeia.
36. Define dosage form. Classify solid dosage forms.

37. What is Extra Pharmacopoeia?
38. What are errors in prescription?
39. How will you calculate dose of child aged 10 years weighing 60lbs? (Adult dose is 200mg)
40. Define Suppository. Write its types, advantages and disadvantages.
41. What are different methods of preparation of suppository?
42. Write in detail about evaluation tests for suppository.
43. Define and classify Pharmaceutical incompatibility.
44. What is physical incompatibility?
45. What is therapeutic incompatibility?

Q.2) Long Question (10 marks) (Total 15Questions)

1. What is the suspension? Differentiate flocculated and deflocculated suspension. Add a note on stability of suspension.
2. Define emulsion. Discuss their methods of preparation, stability problems and methods to overcome these problems.
3. Write methods of preparation and evaluation of ointment.
4. Explain the formulation aspects of suspension.
5. Discus the different solubility enhancement techniques
6. Describe excipients used in formulation of liquid dosage forms
7. Discuss in detail physical incompatibilities with suitable examples
8. Write in detail different types of bases used in preparation of suppositories
9. Discuss in detail chemical incompatibilities with suitable examples
10. Describe the method of preparation of effervescent granules
11. What are dosage forms? Classify in detail.
12. Explain different factors affecting posology.
13. Discuss different parts of prescription with one example.
14. Define Displacement value. Add a note on different types of suppository bases used.
15. Write a note on pharmaceutical incompatibility with examples