

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Medicinal Chemistry II

Max Marks: 75

Date: 13-06-2024

Semester: V

Subject Code: BP501T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10X2) =20
i)	Write mechanism of action and medicinal applications of Ranitidine.	
ii)	Write synthesis of Warfarin.	
iii)	Explain gastric proton pump inhibitors.	
iv)	What is arrhythmia? Classify anti-arrhythmic agents.	
v)	Give synthetic scheme of Benzocaine.	
vi)	What are oral contraceptives?	
vii)	Explain thiazolidinediones as hypoglycemic agents.	
viii)	Explain stereochemistry of steroids.	
ix)	Discuss about drugs used for erectile dysfunction.	
x)	Write a note on corticosteroids.	
Q.2.	Long Answers (Answer 2 out of 3)	(10X2) =20
i)	Define Diuretics. Classify diuretics with examples and write mechanism of action and medicinal applications of drugs belonging to class thiazides.	
ii)	Classify oral hypoglycemic agents with suitable examples. Comment in detail on sulphonyl ureas. Draw synthetic route for tolbutamide.	
iii)	Classify antihistaminic agents with examples and explain in detail H ₁ -antihistaminics and outline the synthesis of Diphenhydramine hydrochloride.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Discuss in detail antihyperlipidemic agents.	
ii)	Write about coagulant agents.	
iii)	Discuss about thyroid and anti-thyroid drugs.	
iv)	What are sex hormones? Classify estrogens with suitable examples.	
v)	Write a note on cardiac glycosides used in the treatment of CHF.	
vi)	Classify antianginal agents with suitable examples.	
vii)	Give classification of anticancer agents with suitable examples and explain alkylating agents.	
viii)	Classify local anaesthetics with suitable examples and explain SAR of local anaesthetics.	

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ix)	Classify antihypertensive drugs and give synthesis of methyldopate hydrochloride.
*** END OF THE PAPER ***	

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Industrial Pharmacy I

Max Marks: 75

Date: 15-06-2024

Semester: V

Subject Code: BP502T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10 X 2) = 20
i)	Mention the composition of the glass-I container.	
ii)	Write the advantages of pellets over other dosage forms.	
iii)	Define Elixers with Examples.	
iv)	List out the manufacturing defects of tablets	
v)	Give the identification tests of Emulsions.	
vi)	Define bloom strength.	
vii)	What is BCS System?	
viii)	Differentiate between Hard gelatin Capsules and Soft gelatin capsules.	
ix)	Enlist Evaluation Test for Aerosols.	
x)	What are hydrates and solvates?	
Q.2.	Long Answers (Answer 2 out of 3)	(10 X 2) = 20
i)	Classify granulation techniques. Discuss the wet granulation method along with the equipment used in the each step	
ii)	Write in details Quality control tests of Parenterals.	
iii)	Explain about the Formulation of hard gelatin capsule	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Discuss the steps involved in sugar coating with ingredients used in each step.	
ii)	Explain the steps involved in manufacturing of hard gelatin capsules shells.	
iii)	What are excipients used in liquid formulation	
iv)	Write a note on Formulation of lyophilized sterile products.	
v)	How lipsticks are evaluated.	
vi)	Write a note on Hot Melt Extrusion	
vii)	Explain in short about Pressure filling and cold filling of Aerosoles.	
viii)	Write a note on Ophthalmic Preparations.	
ix)	Elaborate the parenteral additives with their examples.	
*** END OF THE PAPER ***		

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Pharmacology II

Max. Marks: 75

Date: 19-06-2024

Semester: V

Subject Code: BP503T

Duration: 03:00 Hrs.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)

(10 X 2) = 20

- i) Describe the MOA of Cardiac glycosides used in CHF.
- ii) Write in short drugs for shock therapy.
- iii) Explain role of Dextran.
- iv) Write the applications of Anabolic steroids.
- v) Explain the biosynthesis and role of ACTH.
- vi) Write about Uterine stimulants and relaxants.
- vii) What are physiological roles of Growth Hormone?
- viii) Write the biosynthesis of Bradykinin and Kallidin.
- ix) Explain pharmacology of Vasopressin as Anti-diuretic agent.
- x) Write MOA of Vitamin K precursor drugs as coagulant.

Q.2. Long Answers (Answer 2 out of 3)

(10 X 2) = 20

- i) Classify Diuretics. Explain in detail the pharmacology of "Potassium Sparing Diuretics" class drugs.
- ii) Classify NSAID's. Explain the pharmacology of "Selective COX-2 Inhibitors" class drugs.
- iii) Classify Anti-anginal drugs. Write the pharmacology of "Nitrates" class drugs.

Q.3. Short Answers (Answer 7 out of 9)

(5 X 7) = 35

- i) Classify Anti-arrhythmic drugs. Write pharmacology of Calcium Channel Blockers.
- ii) Write the pharmacology of "Oral Anticoagulant Drugs".
- iii) Enlist Anti-Platelet drugs. Explain pharmacology of any two drugs.
- iv) Write the biosynthesis, release and physiological role of Serotonin.
- v) Write the role of Angiotensin in RAS system. Describe its physiological role and actions.
- vi) Write the biosynthesis, release and physiological role of Insulin.
- vii) What are Gonads? Explain physiological role of Progesterone and Estrogens.
- viii) Write note on Oral contraceptives.
- ix) Write the principles and applications of bioassay.

***** END OF THE PAPER *****

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Pharmacognosy & Phytochemistry-II

Max Marks: 75

Date: 21-06-2024

Semester: V

Subject Code: BP504T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams/ figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10X2) = 20
i)	Define phytochemistry.	
ii)	Define Balsams with examples.	
iii)	Give identification tests for Saponin glycosides.	
iv)	Explain the isolation method of Menthol.	
v)	Write the medicinal uses of Vincristine and Vinblastine.	
vi)	Write source, chemical constituents and uses of Fennel fruit.	
vii)	Enlist methods of extraction.	
viii)	Give source and chemical constituents of Licorice root.	
ix)	Define primary and secondary metabolites.	
x)	Write the uses of Diosgenin.	
Q.2.	Long Answers (Answer 2 out of 3)	(10X2) = 20
i)	Discuss the Industrial production, estimation and utilization of Caffeine and Artemisinin.	
ii)	Define Alkaloids, explain its types and write the pharmacognostic account on Opium.	
iii)	Elaborate and draw the Shikmic acid pathway.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Discuss the Isolation, Identification and Analysis of Atropine.	
ii)	Explain the drug Senna.	
iii)	Define volatile oils and discuss the drug Cinnamon bark.	
iv)	Elaborate the applications of Chromatography in phytochemistry.	
v)	Write a note on Modern methods of extraction.	
vi)	Explain the identification tests for Asafoetida and Myrrh.	
vii)	Discuss the Industrial production and utilization of Digoxin.	
viii)	Write source, chemistry and uses of Belladonna and Aloe.	
ix)	Discuss the Isolation, Identification and Analysis of Curcumin.	
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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Regular/Supplementary Summer Examination – 2024

Course: B. Pharmacy

Subject Name: Medicinal Chemistry-III

Max Marks: 75

Date: 12-06-2024

Semester: VI

Subject Code: BP601T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10 X 2) = 20
i)	Write down the applications of Prodrugs.	
ii)	Give the structure and use of Clindamycin.	
iii)	Write down about beta lactamase inhibitors.	
iv)	Outline the synthesis of Para Amino Salicylic Acid.	
v)	Discuss about folate reductase inhibitors.	
vi)	Draw structure of Ciprofloxacin and Nitrofurantoin.	
vii)	Discuss the MOA of aminoglycoside.	
viii)	Draw any two structures from Imidazole derivatives.	
ix)	Enlist the applications of Combinatorial Chemistry.	
x)	Discuss the term partition coefficient.	
Q.2.	Long Answers (Answer 2 out of 3)	(10 X 2) = 20
i)	Give in detail chemical classification of antibiotics with example and structure. Discuss the SAR, MOA and uses of Cephalosporin derivatives.	
ii)	Classify antimalarial agents with example and structure. Give SAR of 4-aminoquinolines. Outline the synthesis of Chloroquine.	
iii)	Give classification of antiviral agents with example. Discuss MOA of purine analogues. Draw the synthesis of Acyclovir.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Write note on QSAR.	
ii)	Discuss the antiprotozoal agents.	
iii)	Give brief account of Tetracycline.	
iv)	Outline synthesis of Chloramphenicol. Give its uses.	
v)	Discuss agents used as urinary tract anti-infective.	
vi)	Write down short note on macrolide antibiotic.	
vii)	Enlighten beta lactam antibiotics.	
viii)	Write note on Synthetic antitubercular agents.	
ix)	Give an account of MOA and SAR of Sulphonamide.	
*** END OF THE PAPER ***		

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Regular/Supplementary Summer Examination – 2024

Course: B. Pharmacy

Semester: VI

Subject Name: Pharmacology III

Subject Code: BP602P

Max Marks: 75

Date: 14-06-2024

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10 X 2) = 20
i)	Define Chronotherapy and Rhythm.	
ii)	What is Genotoxicity.	
iii)	Write a note on mode of action and uses of vincristine.	
iv)	What is biosimilars.	
v)	Enlist nonsystemic antacids.	
vi)	Which antidote uses for heavy metal poisoning.	
vii)	Differentiate Antitussives and Expectorant.	
viii)	What are antiemetics.	
ix)	Write a note on plasma volume expanders.	
x)	Define and classify purgatives.	
Q.2.	Long Answers (Answer 2 out of 3)	(10 X 2) = 20
i)	Define and classify anti-asthmatic drugs. Write in detail mode of action, adverse drug reaction and uses of sympathomimetics.	
ii)	Explain the categories of antitubercular agents and discuss in detail Para aminosalicylic acid. What is DOTS Therapy?	
iii)	Classify antineoplastic agents. Explain in detail mode of action, therapeutic uses and adverse effects of alkylating agents.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Write short notes on sulfonamides.	
ii)	Give clinical systems and management of arsenic poisoning.	
iii)	What is anti-viral agents and explain acyclovir.	
iv)	Enlist anti-fungal drugs .write mode of action, adverse drug reaction and uses of polyene-antibiotics.	
v)	Drugs uses in treatment and management of COPD.	
vi)	Classify antiulcer agents and explain in details their role in management of ulcer.	
vii)	Explain mechanism of action of griseofulvin and fluconazole.	
viii)	Discuss sexually transmitted diseases and explain any one of them.	

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ix)	Classify antibiotics and write note on quinolones
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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Regular & Supplementary Summer Examination – 2024****Course: B. Pharmacy****Semester: VI****Subject Name: Herbal Drug Technology****Subject Code: BP603T****Max Marks: 75****Date: 18-06-2024****Duration: 3 Hr.****Instructions to the Students:**

1. All questions are compulsory
2. Draw diagrams/ figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions) (10 X 2) = 20

- i) Define the term Herb and Herbal medicinal products.
- ii) Explain Breeder's right.
- iii) Define Organic farming.
- iv) Enlist any two natural binders and disintegrants.
- v) Write health benefits of Honey as Nutraceutical.
- vi) Define biopesticides with examples.
- vii) Enlist any four evaluation parameters for Bhasma.
- viii) Explain drug interactions of Garlic.
- ix) Write any four examples of natural sweeteners.
- x) Enlist any four plant based institutes involved in working on herbs in India.

Q.2. Long Answers (Answer 2 out of 3) (10 X 2) = 20

- i) Describe in detail the method of preparation and general standardization parameters for Asava and Arishta.
- ii) Discuss the Part-I components of GMP (Schedule T) for ASU drugs.
- iii) Explain the basic principles involved in Homeopathy system of medicine.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Define Biopiracy. Discuss the case study of Neem and Curcuma.
- ii) Elaborate the herbs used in Hair care herbal cosmetics.
- iii) Explain in detail WHO guidelines for the assessment of herbal drugs
- iv) Discuss the manufacturing process and evaluation parameters for herbal syrup
- v) Define Nutraceuticals. Explain role of Spirulina and Ginger as Health food.
- vi) Explain the role of fixed oils and waxes in herbal cosmetics with examples.
- vii) Discuss the Herbs as significant natural excipients with few examples.
- viii) Elaborate the role of Nutraceuticals in Diabetes. Mention the significance of Ashwagandha as health food.
- ix) Discuss the herb-drug interactions of Hypericum and Pepper

***** END OF THE PAPER *****

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Regular/Supplementary Summer Examination – 2024****Course: B. Pharmacy****Semester: VI****Subject Name: BIOPHARMACEUTICS AND PHARMACOKINETICS****Subject Code: BP604T****Max Marks: 75****Date: 20-06-2024****Duration: 3 Hr.****Instructions to the Students:**

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions) (10 X 2) = 20

- i) Explain in short about an active transport of drug.
- ii) Write in short about non renal route of Excretion.
- iii) What is loading & maintenance dose?
- iv) Define bioavailability. What are the objectives of bioavailability studies?
- v) Define and explain renal clearance.
- vi) Explain in short about a passive transport of drug.
- vii) What are the advantages of administering a drug by constant rate i.v. infusion over oral administration?
- viii) Enlist the components of blood to which drug binds.
- ix) What is AUC & $t_{1/2}$?
- x) Give clinical significance of protein binding of drugs.

Q.2. Long Answers (Answer 2 out of 3) (10 X 2) = 20

- i) Enlist various factors affecting absorption and explain in detail pharmaceutical factors affecting absorption of drug from GIT
- ii) Write a detail note on kinetics of protein binding.
- iii) Define distribution of drug. Discuss various factors affecting distribution of drug.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Volume of distribution and its importance.
- ii) Write a note on causes of Non-linear pharmacokinetics.
- iii) What are various approaches used to enhance bioavailability of drug from its dosage form.
- iv) Write a note on In-Vitro and In-Vivo co-relation.
- v) What are various sites of drug metabolism in the body?
- vi) Write detailed note on Blood Brain Barrier.
- vii) Explain the design for one compartmental open model for the zero-order i.v. infusion.
- viii) Explain Michaelis Menten equation and determination of V_{max} and K_m .
- ix) Why drugs are better absorbed from small intestine? Explain.

***** END OF THE PAPER *****

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY
LONERE – RAIGAD – 402 103
End Semester Examination – Regular & Supplementary Summer 2024

Branch: B. Pharm.

Subject: Pharmaceutical Biotechnology

Subject Code: BP605T

Date: 24/06/2024

Semester: VI

Marks: 75

Time: 3hrs

Instructions: i) All questions are compulsory.
ii) Figures to the right indicate full marks.
iii) Draw the diagrams or flow charts wherever necessary.

Q. No.1 Objective type questions. (Answer all the questions)

(2×10 =20 Marks)

- A] What are microbial transformation give two examples?
- B] Write the importance of transposomes.
- C] Describe the term protein engineering.
- D] What is hypersensitivity? Enlist their types.
- E] Distinguish between humoral mediated and cell mediated immunity.
- F] What are batch culture and continuous culture?
- G] What are plasma substitutes? Give its therapeutic uses.
- H] Enlist different types of vectors used in genetic engineering.
- I] Define the term biotechnology.
- J] Describe the structure of immunoglobulin with a neat labeled diagram.

Q. No.2 Long answers (Answer 2 out of 3)

(10×2 = 20 Marks)

- A] What is enzyme immobilization? Write in detail different methods of enzyme immobilization.
- B] Discuss in detail the different immuno-blotting techniques in detail (Northern, Western ELISA etc)
- C] Describe construction and working of a fermenter. Discuss briefly on the production of penicillin by fermentation technology.

Q. No.3 Short answers (Answer 7 out of 9)

(7× 5 = 35 Marks)

- A] Describe biosensors. Illustrate the components and types of biosensors.
- B] Explain briefly transformation, transduction and conjugation.
- C] Describe the PCR. Write its applications.
- D] Discuss the general method of preparation of live attenuated bacterial vaccines.
- E] Give a brief account of the vectors used in genetic engineering with a neat diagram.
- F] Write in brief the collection and storage of whole human blood.
- G] Explain about the monoclonal antibodies with a neat diagram. Write its applications.
- H] Discuss the production of Vitamin B12 by fermentation.
- I] Explain the different types of mutagenic agents.

----- END OF PAPER -----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular/Supplementary Summer Examination – 2024

Course: B. Pharmacy

Semester: VI

Subject Name: Quality Assurance

Subject Code: BP606T

Max Marks: 75

Date: 26-06-2024

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1.	Objective Type Questions (Answer All the Questions)	(10X2) =20
i)	Write the importance of SOP in manufacturing.	
ii)	Enlist the significances of Batch Formula Record.	
iii)	Write about Waste Disposal.	
iv)	State the importance of Contamination Control.	
v)	Write the general provisions of GLP.	
vi)	Write brief on 'Quality Audit'.	
vii)	Give details on Handling of Return Good.	
viii)	Brief note on concept of GMP.	
ix)	State the importance of Records and Reports.	
x)	What is ISO 9000 and ISO 14000.	
Q.2.	Long Answers (Answer 2 out of 3)	(10X2) =20
i)	Explain the ICH Stability Testing Guidelines.	
ii)	Discuss in details about GLP in Pharmaceuticals Industry.	
iii)	Explain the quality controls tests for Containers and Closures.	
Q.3.	Short Answers (Answer 7 out of 9)	(5 X 7) = 35
i)	Write a note on calibration of pH meter.	
ii)	What are the Complaints? Add a note on evaluation of Complaints.	
iii)	Discuss about maintenance of Equipments.	
iv)	Compare the concept of QA and QC as per GMP.	
v)	Purchase specification and maintenance of Stores for Raw Materials.	
vi)	Note on Plant Layout of Pharmaceutical industry.	
vii)	Compare the concept of Qualification and Validation.	
viii)	Write brief on 'Secondary Packing Materials'.	
ix)	Discuss briefly the Sterile Area's importance & its maintenance.	
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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Regular/Supplementary Winter Examination – 2024

Course: B. Pharmacy

Semester: VI

Subject Name: Pharmaceutical Quality Assurance

Subject Code: BP606T

Max Marks: 75

Date: 03/01/2025

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Short Answer Questions (Answer All the Questions) (10X2) =20

- i) ICH guidelines.
- ii) Concept of GMP.
- iii) Secondary packing materials
- iv) Batch formula records.
- v) Waste disposal.
- vi) Concept of quality control.
- vii) Roles of head of production department
- viii) Standard operating procedure
- ix) Calibration.
- x) Sanitation in pharmaceutical plant.

Q.2. Long Answers (Answer 2 out of 3) (10X2) =20

- i) Compare calibration, qualification and validation. Describe calibration of UV-visible spectrophotometer.
- ii) Describe the design, construction and plant layout of Pharmaceutical Industry.
- iii) Write in detail ICH stability testing guidelines.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Write the quality control tests for glass containers.
- ii) What is QbD? Note down its tools briefly.
- iii) Write details on GMP with respect to sanitation and hygiene.
- iv) Compare the concept of QA and QC as per GMP.
- v) Discuss the quality control tests for rubber closures.
- vi) Give short note on waste disposal.
- vii) Differentiate qualification and validation.
- viii) Note on steps for registration for ISO 9000 & 14000
- ix) Give brief on maintenance of stores for raw materials.

*** END OF THE PAPER ***

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2024

Course: B. Pharmacy

Subject Name: Pharmacology II

Max. Marks: 75

Semester: V

Subject Code: BP503T

Duration: 03:00 Hrs.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1 Objective Type Questions (Answer all the questions) (10 X 2) = 20

- i) Write the physiological actions of ADH.
- ii) Explain in short the role of Substance -P.
- iii) What is hemodynamics?
- iv) What are uricosuric agents?
- v) Explain role of Folic acid as hematinics.
- vi) Write MOA of Streptokinase.
- vii) Explain in short Osmotic diuretics.
- viii) Write in short the physiological actions of mineralocorticoids.
- ix) Explain MOA of Oxytocin in uterine stimulation.
- x) What are combination pills?

Q.2 Long Answers (Answer 2 out of 3) (2 X 10) = 20

- i) Classify oral hypoglycemic agents. Explain pharmacology of 'Sulfonylurea' class drugs.
- ii) Classify Anti-arrhythmic drugs. Describe pharmacology of 'Class-I - Membrane stabilizing' agents.
- iii) Define Autocoids. Classify it. Describe biosynthesis, metabolism, physiological actions of Prostaglandins and pharmacology of its derivatives.

Q.3 Short Answers (Answer 7 out of 9) (7 X 5) = 35

- i) Classify Anticoagulants. Brief out the pharmacology of 'Coumarin' derivative drugs.
- ii) Write pharmacology of Non-selective reversible inhibitor of cyclooxygenase enzyme drugs.
- iii) Explain in detail pharmacology of Parathyroid hormone.
- iv) Describe pharmacology of Glucagon.
- v) Write about biosynthesis, metabolism and physiological role of Testosterone.
- vi) What are different types of bioassay? Describe bioassay of Insulin.
- vii) Explain pharmacology of Cardiac glycosides.
- viii) Classify antirheumatic drugs. Explain pharmacology of immunosuppressants.
- ix) Classify hormones. Write in detail pharmacology of Prolactin hormone.

*** END OF THE PAPER ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Regular Winter Examination – 2024****Course: B. Pharmacy****Semester: V****Subject Name: Pharmacognosy & Phytochemistry-II****Subject Code: BP 504T****Max Marks: 75****Date: 27/12/2024****Duration: 3 Hr.****Instructions to the Students:**

1. All questions are compulsory
2. Draw diagrams/ figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)**(10X2) = 20**

- i) Define Extraction Process.
- ii) Explain the isolation method of Citral.
- iii) Write source, chemical constituents and uses of Aloe.
- iv) Define Balsams with examples.
- v) Define primary and secondary metabolites.
- vi) Write the Vitali-Morin test. For which phytoconstituents it is used for detection.
- vii) Write any four uses of Taxol.
- viii) Enlist the Aromatic Amino Acids.
- ix) Enlist modern methods of extraction. (Any 4)
- x) Write the Utilization of Vinca alkaloids.

Q.2. Long Answers (Answer 2 out of 3)**(10X2) = 20**

- i) Brief the chemistry of Cardiac Glycosides and explain the drug Digitalis under pharmacognostic scheme.
- ii) Elaborate and draw the Shikimic acid pathway.
- iii) Discuss the Industrial production, estimation and utilization of Atropine and Diosgenin.

Q.3. Short Answers (Answer 7 out of 9)**(5 X 7) = 35**

- i) Elaborate the applications of Chromatography in the isolation, purification and identification of phytoconstituents.
- ii) Discuss the Isolation, Identification and Analysis of Glycyrrhetic acid.
- iii) Discuss the Industrial production and utilization of Forskolin.
- iv) Write a note on utilization of radioactive isotopes in the investigation of Biogenetic studies.
- v) Write source, chemistry and uses of Cinnamon bark and Clove bud.
- vi) Explain the identification tests for Asafoetida and Myrrh.
- vii) Write a note on Supercritical fluid extraction method.
- viii) Define Resins. Write a brief note on Guggul resin.
- ix) Discuss the Isolation, Identification and Analysis of Caffeine.

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Regular Winter Examination – 2024****Course: B. Pharmacy****Semester: V****Subject Name: Industrial Pharmacy I****Subject Code: BP502T****Max Marks: 75****Date: 04/01/2025****Duration: 3 Hr.****Instructions to the Students:**

- 1. All questions are compulsory**
- 2. Draw diagrams / figures wherever necessary**
- 3. Figures to right indicate full marks**

Q.1. Objective Type Questions (Answer All the Questions)**(10 X 2) = 20**

- i) State the role of humectant in tooth paste
- ii) State about various type of tablet
- iii) What is intrinsic solubility of drugs? Give its significance
- iv) What are disintegrants and give two examples.
- v) Name plasticizers used in capsules.
- vi) What do you mean by 'class 100' clean area
- vii) Write the ideal requirements of ophthalmic suspension
- viii) Give ideal properties of shampoos
- ix) What are abrasives? Give two examples.
- x) List out the manufacturing defects of tablets.

Q.2. Long Answers (Answer 2 out of 3)**(10 X 2) = 20**

- i) Discuss about different properties related to Preformulation study.
- ii) (A) With a neat labeled diagram, explain rotary compression process of tablet manufacturing. (B) Discuss the defects in film coating process.
- iii) Define Aerosol; explain with the help of diagram the various part of Aerosol packaging. Discuss various propellant use in aerosol preparation

Q.3. Short Answers (Answer 7 out of 9)**(5 X 7) = 35**

- i) Write a short note on A) Peltitization process B) Container and Closer
- ii) What are the desirable characteristics of oral liquids? Describe their manufacturing and packaging
- iii) Describe quality control tests for tablets
- iv) Discuss the production and in process quality control tests of soft gelatin capsules.
- v) Write a note on formulation & preparation of lipsticks.
- vi) What are various types of coating? Discuss the sugar coating process in detail.
- vii) Elaborate the process of the large scale production of injectable grade water.
- viii) Explain the felling process of hard gelatin capsule
- ix) What are the various source of contamination in parenteral production and write method to

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular Summer Examination – 2024

Course: B. Pharmacy

Semester: V

Subject Name: Medicinal Chemistry-II

Subject Code: BP501T

Max Marks: 75

Date: 19/12/2024

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)**(10 X 2) = 20**

- i) Explain briefly mechanism of action of alkylating agents
- ii) Mention the structures and uses of amlodipine and nicardipine.
- iii) Write the structure and uses of synthetic estrogens.
- iv) Write briefly about nitro vasodilators
- v) Write the structure and uses of menadione and clopidogrel.
- vi) What are glucosidase inhibitors? Give example with structure
- vii) Enlist the insulin preparations
- viii) Give the structure and uses of mannitol
- ix) Outline synthesis of Acetazolamide
- x) Write any two structures of anilide derivatives used as local anesthetic.

Q.2. Long Answers (Answer 2 out of 3)**(10 X 2) = 20**

- i) What are antihistaminic agents? Classify them with suitable examples and write the synthesis of diphenhydramine HCl
- ii) Classify local anaesthetic agents and explain their SAR and mechanism of action. outline the synthesis procaine.
- iii) Define and Classify antineoplastic agents with suitable examples. Explain the synthesis and uses of Methotrexate.

Q.3. Short Answers (Answer 7 out of 9)**(5 X 7) = 35**

- i) Explain the chemistry of cardiac glycosides used in CHF.
- ii) Describe the stereochemistry of steroids.
- iii) Define anticoagulants and give the mechanism of action and synthesis of Warfarin
- iv) What are hypoglycemic agents? Describe structural activity relationship of sulfonylureas.
- v) Write a note on gastric proton pump inhibitors.
- vi) Write a note on antithyroid drugs and give the structure and uses of any two.
- vii) What are potassium sparing diuretics? Outline the synthesis and medicinal uses Chlorthiazide.
- viii) Discuss mechanism of action of drugs used for erectile dysfunction and give any two structures and uses.
- ix) Classify antianginal agents and outline the synthesis of nitroglycerine.

***** END OF THE PAPER *****

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Winter Examination – 2024

Course: B. Pharmacy Semester:

Subject Name: Pharmaceutical Jurisprudence Subject Code: BP505T

Max Marks: 75 Date: 02/01/2025 Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions) (10X2) = 20

- i) Write the importance of D & C Act
- ii) What is Copyright?
- iii) Match the following
 1. Development of Drug Industry in India a. Col. R. N. Chopra
 2. Health Survey and Planning Committee b. Dr. A. L. Mudaliar
 3. Health Survey Development Committee c. Sir Josef Bhore
 4. Drug Enquiry Committee d. Mr. Jaishukhla Hathi
- iv) Write about Adulterated drug?
- v) What is National List of Essential Medicines
- vi) Define Medical Practitioners as per Pharmacy Act 1948
- vii) Define Drug and Magic remedies
- viii) What is Restricted license as per D&C Act?
- ix) What is drug abuse?
- x) What is schedule P and Schedule R

Q.2. Long Answers (Answer 2 out of 3) (10X2) = 20

- i) What are the Offence and Penalties as per NDPS Act?
- ii) Write in detail about grant of license and condition of license for manufacture of drug
- iii) Write about Bonded and Non-Bonded Manufacturing of Medicinal and Toilet Preparations

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) What is loan and repackaging license?
- ii) Write duties and qualification of drug inspector
- iii) Differentiate between State and Joint pharmacy
- iv) Write the Objectives, constitutions and functions of PCI
- v) What is National Pharmaceutical Pricing Authority and write the features of DPCO 2013
- vi) Short note on medicinal and toilet preparation
- vii) Write about Salient feature of drug & remedies
- viii) Give the code of Ethics for Pharmacist in relation to his job and trade
- ix) Write a note on Central Drug Laboratory and their functions

***** END OF THE PAPER *****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular Winter Examination – 2024

Course: B. Pharmacy

Subject Name: Industrial Pharmacy I

Max Marks: 75

Date: 04/01/2025

Semester: V

Subject Code: BP502T

Duration: 3 Hr.

Instructions to the Students:

- 1. All questions are compulsory**
- 2. Draw diagrams / figures wherever necessary**
- 3. Figures to right indicate full marks**

Q.1. Objective Type Questions (Answer All the Questions)

(10 X 2) = 20

- i) State the role of humectant in tooth paste
- ii) State about various type of tablet
- iii) What is intrinsic solubility of drugs? Give its significance
- iv) What are disintegrants and give two examples.
- v) Name plasticizers used in capsules.
- vi) What do you mean by 'class 100' clean area
- vii) Write the ideal requirements of ophthalmic suspension
- viii) Give ideal properties of shampoos
- ix) What are abrasives? Give two examples.
- x) List out the manufacturing defects of tablets.

Q.2. Long Answers (Answer 2 out of 3)

(10 X 2) = 20

- i) Discuss about different properties related to Preformulation study.
- ii) (A) With a neat labeled diagram, explain rotary compression process of tablet manufacturing. (B) Discuss the defects in film coating process.
- iii) Define Aerosol; explain with the help of diagram the various part of Aerosol packaging. Discuss various propellant use in aerosol preparation

Q.3. Short Answers (Answer 7 out of 9)

(5 X 7) = 35

- i) Write a short note on A) Pelletization process B) Container and Closer
- ii) What are the desirable characteristics of oral liquids? Describe their manufacturing and packaging
- iii) Describe quality control tests for tablets
- iv) Discuss the production and in process quality control tests of soft gelatin capsules.
- v) Write a note on formulation & preparation of lipsticks.
- vi) What are various types of coating? Discuss the sugar coating process in detail.
- vii) Elaborate the process of the large scale production of injectable grade water.
- viii) Explain the felling process of hard gelatin capsule
- ix) What are the various source of contamination in parenteral production and write method to

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**Regular/Supplementary Winter Examination – 2024****Course: B. Pharmacy****Semester: VI****Subject Name: Pharmaceutical Biotechnology****Subject Code: BP605T****Max Marks: 75****Date: 30/12/2024****Duration: 3 Hr.****Instructions to the Students:**

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)**(10X2) = 20**

- A) Write advantages & disadvantages of solid state fermentation.
- B) Define terms- A) Transformation B) Transduction
- C) Write the functions of MHC.
- D) Define vector. Write the features of good vector.
- E) Differentiate between monoclonal antibodies and polyclonal antibodies.
- F) What is enzyme immobilization? Enlist the methods of enzyme immobilization.
- G) What is the role of primer in PCR?
- H) Enlist the enzymes used in gene cloning.
- I) Name four mutagenic agents.
- J) What is genetic engineering?

Q.2. Long Answers (Answer 2 out of 3)**(10X2) = 20**

- A) Describe in detail different biotransformation reactions with special reference to steroids.
- B) Explain different types of biosensor and applications of biosensors used in diagnostics.
- C) Explain in detail the general methods of recombinant DNA technology.

Q.3. Short Answers (Answer 7 out of 9)**(5 X 7) = 35**

- A) Describe in brief structure of immunoglobulin.
- B) Write note on generic organization of eukaryotes.
- C) Explain the principle and applications of ELISA test.
- D) Explain in detail production of hepatitis B vaccine by recombinant technology.
- E) What is basis of type-II hypersensitivity reaction? Explain with suitable example.
- F) Explain the principle of protein engineering with neat labeled flow chart.
- G) Describe in brief different types of fermenters.
- H) What is PCR? Explain the applications of PCR.
- I) Write in brief production and importance of different plasma substitutes.

***** END OF THE PAPER *****

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
WINTER SEMESTER EXAMINATION – 2024

Course: B. Pharmacy

Semester: VI

Subject Name: Biopharmaceutics and Pharmacokinetics

Subject Code: BP604T

Max Marks: 75

Date: 26/12/2024

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)

(10 X 2) = 20

- i) Define Apparent volume of distribution.
- ii) Write about objectives of bioavailability studies.
- iii) Differentiate Passive transport and Active transport.
- iv) Write clinical significance of protein binding of drugs.
- v) What is BCS classification of drugs?
- vi) Write in short about non renal route of Excretion.
- vii) What are the different methods used to calculate the AUC?
- viii) Plot plasma drug concentration Vs time profile of drug.
- ix) Write formulas for calculating loading dose and maintenance dose.
- x) Enlist various factors which affect renal excretion of drugs.

Q.2. Long Answers (Answer 2 out of 3)

(10 X 2) = 20

- i) Define Non-linear pharmacokinetic. Explain methods to determine non linearity and causes of non-linearity.
- ii) Define drug absorption. Explain factors influencing absorption of drug.
- iii) Discuss in detail one compartment open model for a drug administered as IV bolus.

Q.3. Short Answers (Answer 7 out of 9)

(5 X 7) = 35

- i) Explain drug plasma-level time curve along with its Pharmacokinetics parameters.
- ii) Write a note on IVIVC correlations.
- iii) Describe about the physiological barriers to the distribution of drugs.
- iv) Explain the factors affecting protein binding of drugs.
- v) Write the methods to enhance the bioavailability of poorly soluble drugs.
- vi) Write a note on Mammillary and Catenary models.
- vii) Explain the dissolution apparatus type-I and type-II as per USP.
- viii) Explain different mechanisms of drug absorption.
- ix) Explain Phase-I reactions of drug metabolism.

*** END OF THE PAPER ***

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2024

Course: B. Pharmacy

Subject Name: Herbal Drug Technology

Max Marks: 75

Date: 23/12/2024

Semester: VI

Subject Code: BP603T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams/ figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions) (10 X 2) = 20

- i) Define the term herbal medicine and herbal drug preparation.
- ii) Enlist any four plant based industries involved in working on herbs in India.
- iii) Define Biopesticides.
- iv) Enlist any two natural colorants, sweeteners.
- v) Explain the role of Amala as a Nutraceutical.
- vi) Explain drug interactions of Hypercium.
- vii) Enlist any four evaluation parameters for Churna.
- viii) Write briefly about Schedule T.
- ix) Define the term Patent.
- x) Explain Farmer's right.

Q.2. Long Answers (Answer 2 out of 3) (10 X 2) = 20

- i) Explain the basic principles, diagnosis and treatment in Ayurvedic system of medicine.
- ii) Discuss the WHO guidelines for the assessment of herbal drugs.
- iii) Describe in detail the method of preparation and general standardization parameters for Bhasma.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Discuss in detail Processing of herbal raw materials.
- ii) Discuss the herb-drug interactions of Garlic and Ephedra.
- iii) Explain Schedule Z of Drugs & Cosmetics Act for ASU drugs.
- iv) Write a short note on Phytosomes.
- v) Define herbal excipients. Write a note on natural binders.
- vi) Describe the composition and functions of ASU DTAB.
- vii) Explain the present scope and future prospects Herbal drugs industry.
- viii) Elaborate the herbs used in skin care herbal cosmetics.
- ix) Mention the significance of Ginseng as health food.

*** END OF THE PAPER ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Semester Examination – 2024

Course: B. Pharmacy

Subject Name: Pharmacology-III

Max Marks: 75

Date: 20/12/2024

Semester: VI

Subject Code: BP602T

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions) (10 X 2) = 20

- i) Define the terms Expectorants and anti-tussive with suitable examples of each.
- ii) Define and classify anti-asthmatic drugs.
- iii) What do you mean by monoclonal antibodies with suitable examples.
- iv) What are antifungal agents and classify it with examples.
- v) Write any five therapeutic uses of Penicillin antibiotics
- vi) Write Uses and side effects of Chloramphenicol.
- vii) Enlist sexual transmitted diseases and their treatment.
- viii) Write clinical symptoms and management of barbiturate and morphine poisoning
- ix) What are immunostimulants and Immunosuppressant with suitable examples.
- x) Classify anthelmintic drugs.

Q.2. Long Answers (Answer 2 out of 3) (10 X 2) = 20

- i) State General principles of treatment of poisoning and Explain causes, clinical symptoms, pharmacological and non-pharmacological management of organophosphate poisoning.
- ii) Write Classification, mechanism of action, indications, Adverse drug reactions, Contraindication of tetracycline antibiotic.
- iii) Explain in detail malaria life cycle and write mechanism of action, adverse drug reactions of Quinine.

Q.3. Short Answers (Answer 7 out of 9) (5 X 7) = 35

- i) Define the term diarrhoea and classify anti diarrhoeal agents with suitable examples.
- ii) What is DOTS therapy and explain it.
- iii) Define, classify with suitable examples of antileprotic drugs. Explain MOA of Dapsone.
- iv) What is cotrimoxazole and explain MOA, uses of it.
- v) Write classification, mechanism of action, and side effects Fluoroquinolones.
- vi) What are anti-amoebic drugs and explain MOA, Uses of metronidazole.
- vii) Explain the terms superinfection, drug resistance with suitable examples of each.
- viii) Define and explain genotoxicity and teratogenicity.
- ix) Define the term Chronopharmacology and explain significance of chronotherapy.

*** END OF THE PAPER ***

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Winter Examination – 2024

Course: B. Pharmacy

Semester: VI

Subject Name: Medicinal Chemistry III

Subject Code: BP601T

Max Marks: 75

Date: 18/12/2024

Duration: 3 Hr.

Instructions to the Students:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q.1. Objective Type Questions (Answer All the Questions)

(10 X 2) = 20

- i) Define Prodrugs. Give their application.
- ii) Discuss the mechanism of action of Trimethoprim.
- iii) Outline the synthesis of Dapsone.
- iv) Draw the structure of two Tetracycline's.
- v) Write down the synthesis of Isoniazid.
- vi) Enlist the applications of combinatorial chemistry.
- vii) Write the mode of action of Aminoglycosides.
- viii) Give the structure and uses of Lincomycin.
- ix) Discuss the Partition coefficient.
- x) Write the structure and uses of Chloroquine.

Q.2. Long Answers (Answer 2 out of 3)

(10 X 2) = 20

- i) Write in detail about classification of beta lactam antibiotics depending on its chemical structure. Give emphasis on chemistry and degradation of beta lactam antibiotics.
- ii) Classify sulphonamides with suitable examples. Write the SAR and chemistry of sulpha drugs. Outline the synthesis of Sulfamethoxazole.
- iii) Give detailed account on various approaches used in drug designing.

Q.3. Short Answers (Answer 7 out of 9)

(5 X 7) = 35

- i) Write a note on urinary tract anti-infective agents.
- ii) Classify Antiviral agents with examples. Write the synthesis of Acyclovir.
- iii) Outline the synthesis of Miconazole and Chloramphenicol.
- iv) Discuss the antiprotozoal agents.
- v) Give brief account on synthetic anti-tubercular drugs.
- vi) Write a note on QSAR and its significance.
- vii) Give emphasis on folate reductase inhibitors.
- viii) Outline the synthesis of Ciprofloxacin and give its uses.
- ix) Add a note on synthetic antifungal agents. Give the synthesis of Tolnaftate.

*** END OF THE PAPER ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2023

Monday, Date: 17-07-2023

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Course- B. Pharmacy

Sem-VI

Subject Name- Biopharmaceutics & Pharmacokinetics

Subject code- BP604T

Max. Mark- 75

Duration-3 hrs

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

(10 x 2) = 20

Q. 1. Objective Type Questions (Answer all the questions)

- i) Define i) Absorption ii) Distribution.
- ii) Define Volume of Distribution
- iii) Why there is need of Biotransformation.
- iv) Enlist Dissolution test apparatus according to USP.
- v) Define i) Cmax ii) Tmax.
- vi) Compare between Plasma protein binding & Tissue binding.
- vii) Draw a presentation for One compartment first order absorption model for extravascular route of administration.
- viii) Explain mixed order kinetics.
- ix) Draw a presentation for Two compartment open model for intravenous Infusion.
- x) Explain Zero order Kinetics.

Q. 2. Long Answers (Answer 2 out of 3)

(5x10) = 20

- i) Explain nonlinearity, methods to determine nonlinearity & causes of nonlinearity.
- ii) Explain one compartment open model for intravenous infusion.
- iii) Explain factor influencing drug absorption of drug.

Q. 3. Short Answers (Answer 7 out of 9)

(7x5) = 35

- i) Explain methods of measurement of Bioavailability.
- ii) Explain mechanism of drug absorption.
- iii) Explain chemical pathways of drug biotransformation.
- iv) Explain one compartment open model for intravenous injection.

v) Explain Mammillary model

vi) Write a note on protein binding of drugs.

vii) Explain kinetics of multiple dosing.

viii) Explain renal clearance with factors affecting renal clearance.

ix) Explain factor affecting distribution of drug.

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-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2023

Date: 12/07/2023

Course : B. Pharmacy
Subject Name : Pharmacology: III
Max Marks : 75

Sem:
Subject Code :
Duration:

VI
BP602T
3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Give reason: 'Chloramphenicol causes gray baby syndrome.'
- ii) Write mechanism of action of Cotrimoxazole.
- iii) What is mechanism of action of penicillin?
- iv) Define Antitussives along with Examples.
- v) Classify Antimicrobial agents based on chemical structure.
- vi) Give symptoms of morphine poisoning and specific antidote used for it.
- vii) Define emetics and antiemetics with example
- viii) What are immunosuppressants? Explain in brief.
- ix) Define carcinogenicity and teratogenicity.
- x) What is acute, sub acute and chronic toxicity?

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Classify antineoplastic agents with examples and explain in detail mode of action, therapeutic uses and adverse effects of alkylating agents
- ii) Explain malaria cycle. Classify Antimalarial drugs with example and Discuss mechanism of action of Chloroquine.
- iii) What is peptic ulcer? Classify Antiulcer agents. Write the Pharmacology of PPIs

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Discuss clinical symptoms and management of barbiturates poisoning
- ii) What is COPD ?Explain management of COPD
- iii) Define Respiratory stimulant with examples? Write MOA & therapeutic Uses of any one drug.

- iv) Define and classify Anti-fungal drugs. Explain anyone antifungal drug in detail.
- v) What are antibiotics? Give mode of action, adverse effect, therapeutic applications and contraindication for aminoglycoside antibiotics.
- vi) What is Tuberculosis? Classify Ant tubercular drugs and give mechanism of action for Isoniazid.
- vii) What is Urinary tract infection? Explain treatment for it.
- viii) Explain how biological clock works with significance of chronotherapy
- ix) Explain drugs used in the treatment of diarrhea.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer- 2023

Course: B. Pharmacy

Sem: 6th

Subject Name: Medicinal Chemistry-III

Subject Code: BP601T

Max Marks: 75

Date: 10/07/2023

Duration: 3 Hr

Instructions:

1. All questions are compulsory
 2. Draw diagrams / figures wherever necessary
 3. Figures to right indicate full marks
-

Q. 1. Objective Type questions (Answer all the questions)

(10* 2) =20

- i. Write the structure and uses of Penicillin-G.
- ii. Give the synthesis of Isoniazid.
- iii. List out important anti-viral agents. Draw the structure of acyclovir.
- iv. Write the structure of any two anti-malarial drugs.
- v. What are antiprotozoal agents? Write the structure of metronidazole.
- vi. What are anthelmintics? Give examples.
- vii. Give the structure and IUPAC name of Dapsone.
- viii. Write the synthesis of para amino salicylic acid.
- ix. Define anti-tubercular agents? Name the causative organism for tuberculosis.
- x. Enlist the parameters of QSAR.

Q. 2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i. Define and Classify antimalarial agents with examples. Give the mechanism of action and outline the synthesis of chloroquine.
- ii. What are anthelmintics? Classify with suitable examples. Outline the synthesis and mechanism of action of Mebendazole.
- iii. What are antibiotics? Classify with examples. Discuss the SAR & MOA of tetracyclines.

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i. What are aminoglycosides? Write the mechanism and SAR of aminoglycoside antibiotics.
- ii. Write a note on urinary tract anti-infective agents.
- iii. What are Sulphonamides? Explain their SAR.
- iv. Write a note on combinatorial chemistry and its applications.
- v. Define and classify anti-tubercular agents with examples. Write the MOA of isoniazid.
- vi. Add a note on synthetic antifungal agents. Give the synthesis of Tolnaftate.
- vii. Write a note on prodrug concept and applications of prodrugs design.

—END OF THE PAPER—

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination –Summer2023

Date:27/07/2023

Course :	B. Pharmacy	Sem:	3rd
Subject Name :	Pharmaceutical Jurisprudence	Subject Code :	BP505T
Max Marks :	75	Duration :	3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) What are Spurious Drugs?
- ii) Give the qualification required for the post of Drug Inspector in India.
- iii) Define "Coca derivatives" as per Narcotic Drugs and Psychotropic Substances Act
- iv) Who is Register Pharmacist as per Pharmacy Act 1948.
- v) What are Magic Remedies?
- vi) What is Euthanasia process in animal experimentation.
- vii) What is National List of Essential Medicines.
- viii) What does 'Information' means according to Right to Information Act?
- ix) What is Trade Mark?
- x) Match the following
 1. Drug Enquiry Committee
 2. Health Survey Development Committee
 3. Health Survey and Planning Committee
 4. Development of Drug Industry in India
 - a. Mr. Jaisukhlal Hathi
 - b. Sir Josef Bhore
 - c. Dr. A. L. Mudaliar
 - d. Col. R. N. Chopra

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Explain in detail the provisions for the Manufacture of drugs under the Drug and Cosmetics Act 1940.
- ii) Explain in details the working of Bonded and Non-Bonded Manufacturing of Medicinal and Toilet Preparations.
- iii) Give the objectives of Prevention of Cruelty to Animals Act and Explain the CPCSEA guidelines for Breeding, Transfer and Experimentation on Animals.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Write the objectives, constitutions and various functions of PCI
- ii) Write a short note on Drug Technical Advisory Board (DTAB).
- iii) What is National Pharmaceutical Pricing Authority (NPPA) and Explain salient features of DPCO 2013.
- iv) Describe the objectives, constitution and functions of Narcotics and Psychotropic Consultative Committee
- v) Illustrate the findings and recommendations of drugs enquiry committee.
- vi) Give the code of ethics for pharmacist in relation to his job and trade.
- vii) What is IPR? Explain the process of application and grant of Patent in India.
- viii) Discuss the prohibited and exempted advertisements under Drugs and Magic Remedies Act and Rules.
- ix) Give the objectives of Medical Termination of Pregnancy Act. and Explain in detail legal framework for the Medical Termination of Pregnancy under the Act.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer23

Date: 19/07/2023

Course: B. Pharmacy	Sem: VI	
Subject Name: Pharmaceutical Biotechnology	Subject Code: BP605T	
Max Marks: 75	Duration:	3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) What are plasmids? Give one example.
- ii) What is protein engineering?
- iii) Write the classification of hypersensitivity reactions.
- iv) Define terms: a) Transcription b) Translation
- v) Define antigen and antibody..
- vi) Differentiate the Vaccine and toxoid
- vii) Define vector. Write the features of a good vector.
- viii) What is gene therapy?
- ix) Enlist the enzymes used in DNA cloning
- x) Name four mutagenic agents.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Explain in details about production and purification of monoclonal antibodies by hybridoma technology
- ii) Describe the general method of recombinant DNA technology.
- iii) Explain different methods of enzyme immobilization with their advantages and disadvantages

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) What are biosensors? Write its principle and its functions.
- ii) Write a detailed note on cloning vectors.
- iii) What is PCR? Write the working principle of PCR.
- iv) Write in brief the Collection, Processing and Storage of whole human blood.
- v) Write in brief the southern blot technique and mention its applications.
- vi) Explain different types of mutations.
- vii) Write a note on microbial biotransformation in production of steroidal medicinal agents.
- viii) Describe the structure and functions of MHC.
- ix) Explain the production of Penicillin by fermentation technology with a neat labelled flow chart.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 22

Date: 14/07/2023

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Course : B. Pharmacy

Sem: VI

Subject Name : Herbal Drug Technology

Subject Code :BP603T

Max Marks : 75

Duration: 3Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define Herbal Medicine and Herbal Medicinal Product
- ii) Give four examples of Nutraceuticals used in treatment of Cancer with their use
- iii) List any four plant based industries in India
- iv) Describe standardization of Bhasma
- v) Name two Herbs used in Dental Care with their biological source
- vi) What is schedule Z
- vii) Give biological source and health benefits of Spirulina
- viii) Write note on natural sweeteners
- ix) Define Patent and Biopiracy
- x) Discuss the objectives of GMP

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Explain in detail WHO and ICH guideline for assessment of herbal drug
- ii) Describe different good agriculture practices in cultivation of medicinal plants
- iii) Discuss raw materials in hair care products as hair tonics.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Discuss principle involved in Homeopathy system
- ii) Write possible side effects and interactions of drug Ginkobiloba and Garlic
- iii) Explain Liposomes as a novel dosage form
- iv) Explain regulation of manufacture of ASU drugs
- v) Explain role of nutraceuticals and health benefit in Irritable Bowel Syndrome with example
- vi) Write note on Biodynamic agriculture
- vii) Write in detail farmers rights
- viii) Describe general requirements for GMP for ASU medicines
- ix) Write a brief note on Herbs used in skin care cosmetics as protecting and antiaging agents

——END OF THE PAPER——

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2022

Date: 20/02/2023

Course :	B. Pharmacy	Sem :	VI
Subject Name :	Quality Assurance	Subject Code :	BP 606 T
Max Marks :	75	Duration :	3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Enlist benefits of ISO14000.
- ii) Define NABL accreditation.
- iii) Give the difference between QA and QC.
- iv) Enlist Q series of ICH Guidelines.
- v) What is contamination and cross contamination?
- vi) Define TQM. Discuss its advantages.
- vii) What is Batch Formula Record?
- viii) Classify packaging material used in the pharmaceutical industry with example.
- ix) Define Qualification and Calibration.
- x) What is warehousing and material management?

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Discuss the importance of Good Laboratory Practices. Explain protocol content of Non-clinical laboratory study.
- ii) What is Validation? Explain types of validation and discuss validation master plan.
- iii) Define Quality control. Explain quality control test for containers.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Define airlock. Enlist different types of airlock and explain their working.
- ii) Discuss in brief different elements of GLP.
- iii) Discuss the QSEM guidelines as per ICH.
- iv) Write about the concept of quality by design (QbD) in pharma industry.
- v) Write a note on Master Formula Record.
- vi) Discuss qualification of UV-Visible Spectrophotometer.
- vii) Explain steps involved in complaint handling.
- viii) Explain various documents maintained by quality control department.
- ix) Explain about personnel responsibilities, training and hygiene.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 22/07/2023

Course : B. Pharmacy
Subject Name : Medicinal Chemistry- II
Max Marks : 75

Sem: V
Subject Code : BP501T
Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Write mechanism of action of chlorthiazide.
- ii) What is arrhythmia? Classify Anti-arrhythmic Drugs.
- iii) What are Antihistaminic agents? Classify them.
- iv) What are oral contraceptives?
- v) How antimetabolites will act as an anticancer agent?
- vi) Classify antianginal drugs.
- vii) Write synthetic scheme for warfarin.
- viii) How Digoxin will help to cure congestive heart failure ?
- ix) Write synthetic scheme for tolbutamide.
- x) Brief about stereochemistry of steroids.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Explain mechanism of action and SAR of local anesthetic agents. Give the synthetic route of dibucaine.
- ii) Classify the oral hypoglycemic agents with examples and explain biguanides and thiazolidinediones in details.
- iii) What are antihypertensive drugs? Classify them with examples and add a note on loop diuretics.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Note on Anti-hyperlipidemic agents.
- ii) What are steroids? Write a note on corticosteroids.
- iii) What is hyperthyroidism. Write a note on antithyroid drugs.
- iv) Explain proton pump inhibitors with examples.
- v) Explain alkylating agents as antineoplastic drugs.
- vi) Write synthesis of diphenhydramine and promethazine.
- vii) Classify anti anginal drugs.
- viii) Note on calcium channel blockers.
- ix) Explain the mechanism of action of vasodilators with examples.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**End Semester Examination - Winter 2022**

Course :	B. Pharmacy	Date: 24/07/2023
Subject Name :	Industrial Pharmacy I	Sem: V
Max Marks :	75	Subject Code : BP502T
		Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define Enteric coating and give its advantages
- ii) Explain the significance of isotonicity in parenteral
- iii) Write the BCS classification of drugs
- iv) Write pyrogen test for parenteral
- v) What are pellets? Give advantages and disadvantages of pellets
- vi) Define cosmetics and give classification of cosmetics with examples.
- vii) Write identification test for emulsion.
- viii) What is simple syrup and Justify why preservatives are not added in simple syrup?
- ix) What is tablet tooling ?
- x) What is the difference between flocculated & deflocculated suspension?

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Describe the components , types of aerosol system and Explain the evaluation test for aerosol
- ii) What is tablet? Explain the classification of tablet in detail along with the excipients used in the formulation of tablets.
- iii) Differentiate between Hard gelatin and soft gelatin capsule. Discuss manufacturing and filling methods of hard gelatin capsule

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Define emulsion and explain different methods used in preparation of emulsion
- ii) Write formulation consideration & labeling for ophthalmic preparation
- iii) Elaborate manufacturing consideration of suspension.
- iv) Explain quality control test for packaging material
- v) Write a note on pelletization process.

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- vi) Explain the types of tablet coating and defects in coating.
 - vii) Discuss Production facilities and Controlled environment required for parenteral preparation
 - viii) Write a note on formulation of lipsticks and shampoo
 - ix) Elaborate principal areas of preformulation research

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Biopharmaceutics & Pharmacokinetics

Subject Code: BP604T

Max. Marks: 75

Date: 22/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

i) Drug absorption by passive diffusion is

- | | |
|------------------------|---------------------|
| a) Non ionic diffusion | b) Energy dependent |
| c) Uphill transport | d) Saturable |

ii) Acidic drugs mainly bind to

- | | |
|---------------------------------|--------------|
| a) α - Acid glycoprotein | b) Antigens |
| c) human serum albumin | d) Vitamin A |

iii) In general, the presence of food in the gastrointestinal tract (GIT) reduces the rate and extent of drug absorption due to

- a) Enhanced presystemic drug elimination
- b) High viscosity of the GIT contents
- c) Increased adsorption of the drug on the GI contents
- d) Increased dissolution of the drug in the GI contents

iv) Calculate the volume of distribution of drug, when 300 mg dose is administered showed the initial blood drug concentration of 30 microgram/mL?

- | | | | |
|--------|---------|----------|---------|
| a) 9 L | b) 10 L | c) 100 L | d) 90 L |
|--------|---------|----------|---------|

v) Gaseous and volatile substances are excreted through one of the following routes.

- | | |
|-----------|--------------|
| a) Dermal | b) Pulmonary |
| c) Renal | d) Salivary |

vi) Which is NOT a marker for renal drug excretion?

- a) Creatinine
- b) Glucose
- c) Inulin
- d) Probenicid

vii) One of the following is the phase II drug biotransformation reaction?

- a) Acetylation
- b) Deamination
- c) Hydrolysis
- d) Reduction

viii) Conjugation with Glutathione useful for

- a) water soluble metabolite formation
- b) detoxification
- c) enhancing biological half life
- d) Reduction

ix) What does the word "open" mean in the one compartment open model?

- a) Unidirectional input and output
- b) The drug readily mixes with the blood
- c) The drug easily enters
- d) Easy absorption

x) In one compartment open model drug disposition, the drug is eliminated by one of the following patterns:

- a) Biexponentially
- b) Nonexponentially
- c) Triexponentially
- d) Monoexponentially

xi) In one compartment open model drug disposition, the assigned one compartment is:

- a) Body
- b) Blood
- c) Gastrointestinal tract
- d) Liver

xii) In which of the model peripheral compartments are connected to a central compartment in series?

- a) Catenary model
- b) Physiologic model
- c) Compartment model
- d) Mammillary model

xiii) Steady state plasma concentration (C_{ss}) depends on following factors except

- a) Clearance
- b) Dosing interval
- c) Dose
- d) Elimination half life

xiv) Total systemic clearance in two compartment open model is calculated by

- a) hybrid first order constants for slow elimination phase and apparent volume of distribution
- b) hybrid first order constants for slow elimination phase and Clearance
- c) hybrid first order constants for slow elimination phase and AUC
- d) hybrid first order constants for slow elimination phase and rapid distribution phase

xv) The dosing interval depends on one of the following

- a) Apparent volume of distribution b) AUC
c) Clearance d) Plasma Elimination half life

xvi) The loading dose of a drug is based upon the desired plasma drug concentration and

- a) Time taken for complete elimination
b) Percentage of drug excreted unchanged in urine
c) Percentage of drug bound to plasma protein
d) Apparent volume of distribution

xvii) One of the following statements is correct with respect to non-linear pharmacokinetics.

- a) First order b) First order followed by zero order
c) Pseudo first order d) Zero order

xviii) Xenobiotic means

- a) foreign to body b) Produced by bacteria
c) produced by xerophytes d) synthesized in the body

xix) The volume of distribution of a drug is

- a) an expression of total body volume
b) a measure of total fluid volume
c) a relationship between the total amount of drug in body and plasma concentration of drug
d) proportional to bioavailability of the drug

xx) What is the reason of complicated penetration of some drugs through Blood brain barrier?

- a) High lipid solubility of drug
b) High endocytosis degree in a brain capillary
c) Absence of pores in the brain capillary endothelium
d) Meningitis

Q. 2. Long Answers) = $2 \times 10 = 20$ (Answer 2 out of 3) 604 BP T

- i) Describe One compartment open model. Deduce the monoexponential equation of disposition of drugs. Illustrate assessment of Pharmacokinetic parameters after IV bolus administration of drug for One compartment open model.
- ii) Define absorption. List factors influencing absorption of drugs. Discuss physicochemical factors in detail.

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iii) Define Bioavailability and bioequivalence. Explain Pharmacokinetic & Pharmacodynamic Methods of assessing bioavailability.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9) 604

- i) List USP *In vitro* dissolution test apparatus and illustrate any 4 apparatus.
- ii) Compare active and passive transport of drug absorption mechanism.
- iii) Differentiate between loading dose and maintenance dose.
- iv) Describe physiological models.
- v) Illustrate Phase I metabolism reactions with example.
- vi) Explain Wagner Nelson method for estimation of K_a .
- vii) Illustrate factors causing Non-linearity in pharmacokinetics with example of drugs.
- viii) Explain protein binding of drugs.
- ix) Explain mechanism of renal excretion. State the equation of renal clearance.
List factors affecting renal excretion of drugs.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Pharmaceutical Biotechnology

Subject Code: BP605T

Max. Marks: 75

Date: 30/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

i)biosensors are based on the principle of sound vibrations.

- | | |
|------------------|-------------------|
| a) Piezoelectric | b) Optical |
| c) Calorimetric | d) Potentiometric |

ii) Which type of restriction endonucleases is used most in genetic engineering?

- | | |
|-------------|------------|
| a) Type I | b) Type II |
| c) Type III | d) Type IV |

iii) A segment of DNA that reads the same from forward and backward is called

- | | |
|--------------------|----------------------|
| a) palindromic DNA | b) complementary DNA |
| c) plasmid DNA | d) copy DNA |

iv) Which of the following is not included in immobilization process?

- | | |
|---------------|------------------|
| a) Absorption | b) Adsorption |
| c) Entrapment | d) Cross-linking |

v) Most commonly used plasmid vector in genetic engineering is

- | | |
|------------|------------|
| a) pBR 322 | b) pBR 328 |
| c) pBR 232 | d) pBR 832 |

vi) Name the class of immunoglobulin which has a pentameric structure?

- | | |
|---------|---------|
| a) IgE | b) Ig G |
| c) Ig A | d) IgM |

vii) Restriction endonucleases are utilised in genetic engineering as.....

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- a) Molecular build up at nucleotides
- b) Molecular degradation to DNA break up
- c) Molecular cement for combining DNA
- d) Molecular scalpels for cutting DNA

viii) What will be the consequence of not having an origin of replication (ori) in the vector?

- a) If an ori is absent, replication of vector would not take place
- b) As the cells divide after taking up the vector, both the daughter cells would be having the vector
- c) A colony of transformed colonies is observed
- d) The vector won't be taken up by the cell

ix) The hybridomas are made by _____.

- a) Fusing T cells with myeloma cells
- b) Fusing T helper cells with myeloma cells
- c) Fusing B cells with myeloma cells
- d) Fusing B memory cells with myeloma cells

x) Cell-mediated immunity is carried out by _____. While humoral immunity is mainly carried out by _____.

- a) B cells/T cells
- b) Epitopes/Antigens
- c) T cells/B cells
- d) Antibodies/Antigens

xi) Type IV hypersensitivity is also called as _____.

- a) Immediate hypersensitivity
- b) Delayed hypersensitivity
- c) Cytotoxic hypersensitivity
- d) Immune complex hypersensitivity

xii) Which immunoglobulin is responsible for humoral sensitivity and histamine release?

- a) IgE
- b) IgM
- c) IgG
- d) IgA

xiii) _____ technique is used for amplification of RNA molecules

- a) Nested PCR
- b) Real time quantitative PCR
- c) Anchored PCR
- d) Reverse Transcription PCR (RT-PCR)

xiv) The transfer of genetic material from one bacterium to another via virus is called.....

- a) Transformation
- b) Conjugation
- c) Recombination
- d) Transduction

xv) Which of the following characteristics is not true of a plasmid?

- a) It is a circular piece of DNA.
- b) It is required for normal cell function.
- c) It is found in bacteria.
- d) It can be transferred from cell to cell.

xvi) The mutation which will not affect the length of a protein is _____.

- a) Nonsense mutation
- b) Missense mutation
- c) Frame shift mutation
- d) Reverse Mutation

xvii) Which of the following technique is suitable for identifying mRNA molecule in a sample

- a) Western blotting
- b) Southern blotting
- c) Eastern blotting
- d) Northern blotting

xviii) The chemical nature of humulin produced by rDNA technology is

- a) lipid
- b) protein
- c) polysaccharide
- d) nucleic acid

xix) A period during which the growth rate of cells gradually increases is known as _____.

- a) Lag phase
- b) Stationary phase
- c) Log phase
- d) Deceleration phase

xx) It is necessary to have _____ in the nutrient medium for the production of Vitamin B12.

- a) Manganese
- b) Phosphate
- c) Cobalt
- d) Calcium

Q. 2. Long Answers Questions (Answer 2 out of 3) (2 x 10) = 20

- i) Define enzyme immobilization. Elaborate different methods of enzyme immobilization and give their applications.
- ii) Describe the steps involved in r-DNA technology and its application in detail.
- iii) Illustrate immuno-blotting technique? Discuss in detail the different methods of immuno-blotting techniques.

Q. 3. Short Answers Questions (Answer 7 out of 9) (7 x 5) = 35

- i) Define the cloning vector. Explain the different types of cloning vectors.
- ii) Illustrate Hybridoma technology and give the role of HAT medium in monoclonal antibody production.
- iii) State the mutation and comment on different types of mutation.
- iv) Discuss the structure and functions of different types of MHC.
- v) Explain in detail the construction of a typical fermenter with a suitable diagram.
- vi) Define biosensor. Illustrate the components and types of biosensors.

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- vii) Write a note on PCR technique
- viii) Elaborate in detail any four methods of gene transfer along with diagrams.
- ix) Compare different types of hypersensitivity reactions.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**End Semester Examination – Summer 2022****Course: B. Pharmacy****Sem: VI****Subject Name: Pharmacology-III****Subject Code: BP602T****Max. Marks: 75****Date: 16/07/2022****Duration: 3.45 Hrs.****Instructions –**

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

1. If one of the following microorganisms has been proposed as a probable cause of persistent gastritis and peptic ulcer disease.

- | | |
|-------------------------|------------------------------------|
| A) Campylobacter jejuni | B) Escherichia coli |
| C) Helicobacter pylori | D) Calymmatobacterium granulomatis |

2. If any of those medicine classes is used to treat asthma.

- | | |
|-----------------------|-----------------------------|
| A) Methylxanthines | B) M-cholinoblocking agents |
| C) Beta2 – stimulants | D) All of above |

3. Select the side-effect characteristic for non-selective beta 2-adrenomimics.

- | | |
|---------------------------------------|----------------|
| A) Depression of the breathing centre | B) Tachycardia |
| C) Peripheral vasoconstriction | D) Dry mouth |

4. The mechanism of methylxanthines action is.

- | |
|---|
| A) Inhibition of the enzyme phosphodiesterase |
| B) Beta2 -adrenoreceptor stimulation |
| C) Inhibition of the production of inflammatory cytokines |
| D) Inhibition of M-cholinoreceptors |

5. Choose the drug belonging to membrane stabilizing agents.

- | | |
|----------------|------------------------|
| A) Zileutin | B) Sodium cromoglycate |
| C) Zafirlucast | D) Montelukast |

6. Gastric acid secretion is under the control of the following agents EXCEPT.

- | | |
|--------------|------------------|
| A) Histamine | B) Acetylcholine |
| C) Serotonin | D) Gastrin |

7. Select the drug which inhibits peristalsis of GIT.

- 47
- A) Castor oil
C) Loperamide

- B) Bisacodyl
D) Sorbitol

8. The medication on the list below has the potential to reverse gynecomastia

- A) Omeprazole
C) Cimetidine
B) Pirenzepine
D) Sucralfate

9. Select the drug stimulating the protective function of the mucous barrier and the stability of the mucous membrane against damaging factors:

- A) De-nol
C) Sucralfate
B) Misoprostol
D) Omeprazole

10. Select the mechanism of Metoclopramide antiemetic action:

- A) H1 and H2-receptor blocking effect
B) M-cholinoreceptor stimulating effect
C) M-cholinoblocking effect
D) D2-dopamine and 5-HT₃-serotonin receptor blocking effect

11. Currently the drug of choice for empiric treatment of typhoid fever is:

- A) Chloramphenicol
C) Levofloxacin
B) Cotrimoxazole
D) Ampicillin

12. Clavulanic acid is combined with amoxicillin because

- A) It kills bacteria that are not killed by amoxicillin
B) It reduces renal clearance of amoxicillin
C) It counteracts the adverse effects of amoxicillin
D) It inhibits beta lactamases that destroy amoxicillin

13. Penicillins interfere with bacterial cell wall synthesis by:

- A) Inhibiting synthesis of N-acetyl muramic acid pentapeptide.
B) Inhibiting conjugation between N-acetyl muramic acid and N-acetyl glucosamine.
C) Inhibiting transpeptidases and carboxypeptidases which cross link the peptidoglycan residues.
D) Counterfeiting for D-alanine in the bacterial cell wall.

14. The most frequent side effect of oral ampicillin is:

- A) Nausea and vomiting
C) Constipation
B) Diarrhea
D) Urticaria

15. Select the 3rd generation cephalosporin that can be used only by parenteral route:

- A) Cefpodoxime proxetil
C) Ceftibuten
B) Ceftizoxime
D) Cefixime

16. Chloramphenicol inhibits bacterial protein synthesis by:

- A) Binding to 30S ribosome and inhibiting attachment of aminoacyl tRNA
B) Binding to 50S ribosome and preventing peptide bond formation

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- C) Binding to 50S ribosome and blocking translocation of peptide chain
- D) Binding to both 30S and 50S ribosome and inducing misreading of mRNA code

17. The aminoglycoside antibiotic causes more hearing loss than vestibular disturbance as toxic effect.

- A) Streptomycin
- B) Gentamicin
- C) Kanamycin
- D) Sisomicin

18. The following antineoplastic drug is a mitotic inhibitor and causes metaphase arrest:

- A) Busulfan
- B) Vincristine
- C) Cytarabine
- D) Procarbazine

19. Choose the azole antifungal drug which is used only topically:

- A) Ketoconazole
- B) Fluconazole
- C) Itraconazole
- D) Econazole

20. Select the drug that acts by inhibiting HIV protease enzyme

- A) Zalcitabine
- B) Efavirenz
- C) Stavudine
- D) Nelfinavir

Q. 2. Long Answers = $2 \times 10 = 20$ (Answer 2 out of 3) 602 T

- I. Discuss in detail mode of action, therapeutic uses, adverse effects and drug interactions of tetracycline.
- II. Classify antineoplastic agents with example. Explain in detail mode of action, therapeutic uses and adverse effects of alkylating agents.
- III. Enumerate drugs used in treatment of tuberculosis. Discuss in detail treatment of tuberculosis.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9)

- a) Discuss clinical symptoms and management of barbiturates poisoning.
- b) Write a note on teratogenicity.
- c) Discuss sexually transmitted diseases and treatment.
- d) Classify Antimalarial drugs. Explain MOA of primaquine
- e) Explain mechanism of action and therapeutic uses of rifampicin.
- f) Explain mechanism of action of griseofulvin and fluconazole.
- g) Discuss in detail pharmacology of glucocorticoids.
- h) Drugs used in the treatment and management of COPD.
- i) Classify antiulcer agents. Explain MOA of Omeprazol

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Medicinal Chemistry-III

Subject Code: BP601T

Max. Marks: 75

Date: 13/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- i) Basic Nucleus of Cephalosporins and Penicillins is.....
 - a) Lactone
 - b) Thiazole
 - c) Lactam Ring
 - d) Beta Lactam Ring
- ii) Streptomycin is produced by which of the following organisms?
 - a) Streptomyces griseus
 - b) Streptomyces fradiae
 - c) Streptomyces noursei
 - d) Streptomyces nodosus
- iii) What is Target for clavulanic acid?
 - a) Lactamase
 - b) L-alaracemase
 - c) The transpeptidase enzyme
 - d) Penicillin acylase
- iv) Aminoglycosides work by irreversibly binding to the..... ribosomal subunit.
 - a) 50S
 - b) 30S
 - c) both
 - d) none
- v) Benzyl Penicillin is chemical name for which of the following penicillin..?
 - a) Penicillin-G
 - b) Penicillin-V
 - c) Penicillin-F
 - d) Phenethicin
- vi) Chemically tetracycline is derivative of.....
 - a) Purine
 - b) Pyridine
 - c) Octahydronaphthacene
 - d) Phenanthrene
- vii) Which is naturally occurring anti-malaria drug?
 - a) Quinacrine
 - b) Artemisinin
 - c) Mepacrine
 - d) Mefloquine
- viii) Chloroquine can be synthesized by reaction of 4-diethylamino-1-methylbutylamine with?
 - a) 4,7-dichloroquinoline
 - b) α -naphthol
 - c) β -naphthol
 - d) None of the above
- ix) What is co-trimoxazole?
 - a) Sulphamethoxazole + trimethoprim, 3:1

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- b) Sulfadoxine + pyrimethamine
c) Sulphamethoxazole + trimethoprim, 5:1
d) Sulfacetamide, Sulfathiazine and sulfabenzamide
- x) Identification of a new chemical entity as a potential therapeutic agent (From Hit to Lead) is known as
a) Drug discovery
b) Drug development
c) Both of above
d) None of above
- xi) In QSAR, study of medicinal chemistry Q stands for
a) Qualitative
b) Quantitative
c) Both
d) Quantam
- xii) Identify the metabolite of prontosil responsible for its antibacterial activity?
a) Sulphacetamide
b) Sulphanilamide
c) PABA
d) Probenec
- xiii) A combination of medications which applied to treat tuberculosis is
a) 1-thia-4-azabicyclo[3.2.1]heptane
b) 4-thia-1-azabicyclo[3.2]heptane
c) 4-thia-1-azabicyclo[3.2.0]heptane
d) 1-thia-4-azabicyclo[1.2.3]heptane
- xiv) Which of the following is noncompetitive inhibitor of the enzyme reverse transcriptase in HIV?
a) Lamivudine
b) Nevirapine
c) Ritonavir
d) Tenofovir
- xv) Sulphonamides do not have adverse drug interaction with
a) Oral coagulants
b) Sulphonylureas
c) Hydantoin anticoagulants
d) Dihydrofolatereductase inhibitors
- xvi) The essential structural unit for the anthelmintic activity of mebendazole is:
a) Benzoyl group
b) Benzimidazole
c) Methyl carbamate
d) Imidazole
- xvii) Artemisinin contains the following group in its structure?
a) An endoperoxide
b) An exoperoxide
c) An epoxide
d) An acid hydrazide
- xviii) Identify the antibiotic obtained from streptomyces sp. but not having antibacterial property. In fact it is suicide inhibitor of beta lactamases.
a) Azetronam
b) Cilastatin
c) Clavulanic acid
d) Imipenem
- xix) Methotrexate is thought to exert its action by.....
a) Interfering with purine synthesis
b) Intracellular formation of an amine adduct
c) Forming a conjugate with nucleic acids
d) Inhibiting the synthesis of folic acid by inhibiting dihydrofolate synthetase
- xx) Chloramphenicol has two asymmetric centers. What is the configuration and optical activity of the active form of the antibiotics?
a) D-threo, (-)
b) L-threo, (+)
c) D- erythro, (-)
d) L- erythro, (+)

Q. 2. Long Answers

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2 x 10 = 20 (Answer 2 out of 3)

1. What are antibiotics? Give Chemical Classification of antibiotics with structures. Discuss in brief about Chemistry and SAR of antibiotics containing Penam ring system.
2. Classify antimalarial agents. Discuss SAR and MOA of 4-aminoquinolines and 8-aminiquinolines. Outline the synthetic scheme for Chloroquine.
3. Classify Sulphonamides with structures. Write Chemistry and MOA of Sulpha drugs. Add note of DHFR inhibitor. Give the synthesis of Trimethoprim.

Q. 3. Short Answers

7 x 5 = 35 (Answer 7 out of 9)

- i) Discuss chemistry, SAR and MOA of Tetracycline.
- ii) What are anti-mycobacterial agents? Draw the structures of any two anti-tubercular drugs. Outline the synthesis of p-amino salicylic acid.
- iii) Write in brief about anthelmintics. Outline synthetic scheme for Mebendazole.
- iv) What are aminoglycosides? Write MOA and Chemistry of aminoglycosides.
- v) Define Prodrug. Give the Applications of Prodrug with examples.
- vi) Classify antiviral agents. Discuss in brief about RTI's.
- vii) Discuss chemistry, SAR, MOA of fluoroquinolone antibacterial agents giving synthetic of Ciprofloxacin.
- viii) Write a note on combinational chemistry & its applications in drug discovery.
- ix) Give chemical classification of antifungal drugs with example. discuss chemistry of Imidazole antifungal

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Herbal Drug Technology

Subject Code: BP603T

Max. Marks: 75

Date: 19/07/2022

Duration: 3.45 Hrs.

Instructions —

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = $20 \times 1 = 20$ (All the questions are compulsory)

i) Dissolution test is done to check

- a) Hardness b) Weight variation
c) Absorption of drug in blood d) Concentration of drug in formulation

ii) Shodhana and Marana processes are associated with formulation.

- a) Avaleha b) Bhasma c) Aristas d) Gutika

iii) Undesired plants in the field are known as

- a) Herbs b) Weeds c) Cover crops d) Buffers

iv).....practiced and introduced surgery in Ayurveda.

- a) Charaka b) Nagarjuna c) Dhanwantari d) Sushrut

v) Ashwagandha exhibits therapeutic activity due to the presence of

- a) Withanolides b) Atropine c) Diosgenin d) Catechin

vi) Stevia is an example of.....

- a) Natural binder b) Natural colorant c) Natural thickener d) Natural sweetener

vii) Full form of IPR

- a) Intellectual Property Rights b) Indian Property Rights
c) Intellectual Personal Rights d) Intellectual Property Reserve

viii) is not a member of ASU DTAB.

- a) Drug controller of India b) Director of CDL
c) Pharmacognosist appointed by Central government d) President of PCI

ix) Spreadability test is performed for.....formulation.

- a) Tablet b) Syrup c) Cream d) Shampoo

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- x) Most popular Indian herbal industry Dabur was established in....
 a) 1920 b) 1884 c) 1832 d) 1882
- xi) As per ICH guidelines sub section Q1B deals with...
 a) Stability testing of new dosage form b) Stability data evaluation
 c) Photo stability testing d) Stability testing of new drug
- xii) Churna is the formulation of the category
 a) Shampoo b) Powder mixture c) Tablet d) Cream
- xiii) In the case study of Neem, patent was claimed for activity.
 a) Antiseptic b) Antiviral c) Antiulcer d) Fungicidal
- xiv) Regulation in production of ASU drugs is done by
 a) Schedule Z b) Schedule P c) Schedule O d) Schedule N
- Xv) Alcohol content of Asava/Arishta is in the range of.....
 A) 8-12 % v/v B) 20-25 % v/v C) 15-20 % v/v D) 4-7 % v/v
- xvi) Hypericin is the chemical constituent of
 a) Ashwagandha b) St.John's wort c) Ephedra d) Ginseng
- xvii) Dr.Samuel Hahnemann did the experiments on his own healthy body with the drug....
 a) Rauwolfia b) Fenugreek c) Cinchona d) Ginseng
- xviii) Azadirachtin is one of the potent components of
 a) Neem b) Turmeric c) Tulsi d) Kava-kava
- xix) Full form of ICH.
 a) Indian Council for Harmonisation b) International Council for Harmonisation
 c) International Course for Harmonisation d) Indian Course for Harmonisation
- xx).is NOT an Ayurvedic formulation.
 a) Bhasma b) Gutika c) Syrup d) Lehya

Q. 2. Long Answers = $2 \times 10 = 20$ (Answer 2 out of 3) 60 3

- Explain Asava and Arishta with its method of preparation and standardization parameters.
- Discuss the Part-I components of GMP (Schedule T) for ASU drugs.
- Highlight the role of Nutraceuticals in Diabetes. Mention the significance of Amla and Ashwagandha as health food.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9)

- Illustrate different Good Agricultural practices in cultivation of medicinal plants.
- Write a brief note on herbs used in skin care herbal cosmetics.

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- iii) Investigate the possible side effects and interactions of the drug Hypercium and Ginseng.
- iv) Explain the Phytosomes as Novel dosage forms.
- v) Brief the term Biopiracy. Elucidate patent case study of Curcuma.
- vi) Describe the composition and functions of ASU DTAB.
- vii) Recognize the present scope and future prospects of Herbal drug industry in India.
- viii) Write a note on Herbs as significant natural excipients.
- ix) Mention the basic principles involved in Ayurvedic system of medicine.

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Pharmaceutical Quality Assurance

Subject Code: BP606T

Max. Marks: 75

Date: 28/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- 1) NABL accreditation has a validity period of _____ years.
a) 1 b) 2 c) 3 d) 4
- 2) The is a process of assurance that the specific system, premises or equipment are able to achieve the predetermined acceptance criteria to confirm the attributes.
a) Validation master plan b) Calibration
b) Evaluation d) Qualification
- 3) ISO Certification is valid for _____ years.
a) 1 b) 2 c) 3 d) 4
- 4) Which guideline stands for evaluation of stability data?
a) Q1B b) Q1C c) Q1D d) Q1E
- 5) P-D-C-A stands for.....
a) Proceed-Do-Check-Act b) Plan-Do-Check-Act
c) Plan-Do-Correct-Act d) Prepare-Do-Check-Act
- 6) Physical dimension of equipment and accessories comes under which qualification?
a) Operational qualification (OQ) b) Installation qualification (IQ)
c) Performance qualification (PQ) d) Design qualification (DQ)
- 7) _____ airlock is mainly used in Parenteral manufacturing areas.

a) 5

b) 3

c) 10

d) 7

20) Only complaint sample shows OOS result, due to improper storage and retained sample meets specifications, this complaint is categorized as _____

a) Confirmed complaint

b) Non-confirmed complaint

c) Counter complaint

d) Tamper complaint

Q. 2. Long Answers = 2 x 10 = 20 (Answer 2 out of 3) 606

1. Describe process of harmonization and elaborate the ICH stability testing guidelines.
2. Write in detail about Analytical Method Validation. Give process of Calibration of pH meter.
3. Explain the quality control tests for glass containers and rubber closures.

Q. 3. Short Answers = 7 x 5 = 35 (Answer 7 out of 9)

1. Explain the process of Complaint Handling.
2. Describe Elements of QbD.
3. Explain principles and procedure for NABL accreditation.
4. Write a note on Training and Personnel health and hygiene. Explain in short Maintenance of sterile areas.
5. Give an account of purchase specifications and maintenance of stores for raw materials.
6. Discuss the Protocol for Conduct of a Nonclinical Laboratory Study and Records and Reports per GLP.
7. Write a note on Quality Audit and Master Formula Record.
8. Differentiate between QA & QC. Enlist the steps for registration for ISO 9000.
9. Write a short note on Good Warehousing Practice.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Medicinal Chemistry-III

Subject Code: BP601T

Max. Marks: 75

Date: 13/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

- i) Basic Nucleus of Cephalosporins and Penicillins is.....
 - a) Lactone
 - b) Thiazole
 - c) Lactam Ring
 - d) Beta Lactam Ring
- ii) Streptomycin is produced by which of the following organisms?
 - a) Streptomyces griseus
 - b) Streptomyces fradiae
 - c) Streptomyces noursei
 - d) Streptomyces nodosus
- iii) What is Target for clavulanic acid?
 - a) Lactamase
 - b) L-alaracemase
 - c) The transpeptidase enzyme
 - d) Penicillin acylase
- iv) Aminoglycosides work by irreversibly binding to the..... ribosomal subunit.
 - a) 50S
 - b) 30S
 - c) both
 - d) none
- v) Benzyl Penicillin is chemical name for which of the following penicillin..?
 - a) Penicillin-G
 - b) Penicillin-V
 - c) Penicillin-F
 - d) Phenethicin
- vi) Chemically tetracycline is derivative of.....
 - a) Purine
 - b) Pyridine
 - c) Octahydronaphthacene
 - d) Phenanthrene
- vii) Which is naturally occurring anti-malaria drug?
 - a) Quinacrine
 - b) Artemisinin
 - c) Mepacrine
 - d) Mefloquine
- viii) Chloroquine can be synthesized by reaction of 4-diethylamino-1-methylbutylamine with?
 - a) 4,7-dichloroquinoline
 - b) α -naphthol
 - c) β -naphthol
 - d) None of the above
- ix) What is co-trimoxazole?
 - a) Sulphamethoxazole + trimethoprim, 3:1

- b) Sulfadoxine + pyrimethamine
- c) Sulphamethoxazole + trimethoprim, 5:1
- d) Sulfacetamide, Sulfathiazine and sulfabenzamide

x) Identification of a new chemical entity as a potential therapeutic agent (From Hit to Lead) is known as

- a) Drug discovery
- b) Drug development
- c) Both of above
- d) None of above

xi) In QSAR, study of medicinal chemistry Q stands for

- a) Qualitative
- b) Quantitative
- c) Both
- d) Quantam

xii) Identify the metabolite of prontosil responsible for its antibacterial activity?

- a) Sulphacetamide
- b) Sulphanilamide
- c) PABA
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xiii) A combination of medications which applied to treat tuberculosis is

- a) 1-thia-4-azabicyclo[3.2.1]heptane
- b) 4-thia-1-azabicyclo[3.2]heptane
- c) 4-thia-1-azabicyclo[3.2.0]heptane
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xiv) Which of the following is noncompetitive inhibitor of the enzyme reverse transcriptase in HIV?

- a) Lamivudine
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- d) Tenofovir

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- a) Oral coagulants
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- c) An epoxide
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xviii) Identify the antibiotic obtained from streptomycetes sp. but not having antibacterial property. In fact it is suicide inhibitor of beta lactamases.

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- b) Cilastatin
- c) Clavulanic acid
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- b) Intracellular formation of an amine adduct
- c) Forming a conjugate with nucleic acids
- d) Inhibiting the synthesis of folic acid by inhibiting dihydrofolate synthetase

xx) Chloramphenicol has two asymmetric centers. What is the configuration and optical activity of the active form of the antibiotics?

- a) D-threo, (-)
- b) L-threo, (+)
- c) D- erythro, (-)
- d) L- erythro, (+)

Q. 2. Long Answers 601 T

2 x 10 = 20 (Answer 2 out of 3)

1. What are antibiotics? Give Chemical Classification of antibiotics with structures. Discuss in brief about Chemistry and SAR of antibiotics containing Penam ring system.
2. Classify antimalarial agents. Discuss SAR and MOA of 4-aminoquinolines and 8-aminoquinolines. Outline the synthetic scheme for Chloroquine.
3. Classify Sulphonamides with structures. Write Chemistry and MOA of Sulpha drugs. Add note of DHFR inhibitor. Give the synthesis of Trimethoprim.

Q. 3. Short Answers

7 x 5 = 35 (Answer 7 out of 9)

- i) Discuss chemistry, SAR and MOA of Tetracycline.
- ii) What are anti-mycobacterial agents? Draw the structures of any two anti-tubercular drugs. Outline the synthesis of p-amino salicylic acid.
- iii) Write in brief about anthelmintics. Outline synthetic scheme for Mebendazole.
- iv) What are aminoglycosides? Write MOA and Chemistry of aminoglycosides.
- v) Define Prodrug. Give the Applications of Prodrug with examples.
- vi) Classify antiviral agents. Discuss in brief about RTI's.
- vii) Discuss chemistry, SAR, MOA of fluoroquinolone antibacterial agents giving synthetic of Ciprofloxacin.
- viii) Write a note on combinational chemistry & its applications in drug discovery.
- ix) Give chemical classification of antifungal drugs with example. Discuss chemistry of Imidazole antifungal

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Pharmacology-III

Subject Code: BP602T

Max. Marks: 75

Date: 16/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

1. If one of the following microorganisms has been proposed as a probable cause of persistent gastritis and peptic ulcer disease.

- | | |
|-------------------------|------------------------------------|
| A) Campylobacter jejuni | B) Escherichia coli |
| C) Helicobacter pylori | D) Calymmatobacterium granulomatis |

2. If any of those medicine classes is used to treat asthma.

- | | |
|-----------------------|-----------------------------|
| A) Methylxanthines | B) M-cholinoblocking agents |
| C) Beta2 – stimulants | D) All of above |

3. Select the side-effect characteristic for non-selective beta 2-adrenomimics.

- | | |
|---------------------------------------|----------------|
| A) Depression of the breathing centre | B) Tachycardia |
| C) Peripheral vasoconstriction | D) Dry mouth |

4. The mechanism of methylxanthines action is.

- A) Inhibition of the enzyme phosphodiesterase
- B) Beta2 -adrenoreceptor stimulation
- C) Inhibition of the production of inflammatory cytokines
- D) Inhibition of M-cholinoreceptors

5. Choose the drug belonging to membrane stabilizing agents.

- | | |
|----------------|------------------------|
| A) Zileutin | B) Sodium cromoglycate |
| C) Zafirlucast | D) Montelukast |

6. Gastric acid secretion is under the control of the following agents EXCEPT.

- | | |
|--------------|------------------|
| A) Histamine | B) Acetylcholine |
| C) Serotonin | D) Gastrin |

7. Select the drug which inhibits peristalsis of GIT.

- 62
- A) Castor oil
 - C) Loperamide

- B) Bisacodyl
- D) Sorbitol

8. The medication on the list below has the potential to reverse gynecomastia
- A) Omeprazole
 - B) Pirenzepine
 - C) Cimetidine
 - D) Sucralfate
9. Select the drug stimulating the protective function of the mucous barrier and the stability of the mucous membrane against damaging factors:
- A) De-nol
 - B) Misoprostol
 - C) Sucralfate
 - D) Omeprazole
10. Select the mechanism of Metoclopramide antiemetic action:
- A) H1 and H2-receptor blocking effect
 - B) M-cholinoreceptor stimulating effect
 - C) M-cholinoblocking effect
 - D) D2-dopamine and 5-HT3-serotonin receptor blocking effect
11. Currently the drug of choice for empiric treatment of typhoid fever is:
- A) Chloramphenicol
 - B) Cotrimoxazole
 - C) Levofloxacin
 - D) Ampicillin
12. Clavulanic acid is combined with amoxicillin because
- A) It kills bacteria that are not killed by amoxicillin
 - B) It reduces renal clearance of amoxicillin
 - C) It counteracts the adverse effects of amoxicillin
 - D) It inhibits beta lactamases that destroy amoxicillin
13. Penicillins interfere with bacterial cell wall synthesis by:
- A) Inhibiting synthesis of N-acetyl muramic acid pentapeptide.
 - B) Inhibiting conjugation between N-acetyl muramic acid and N-acetyl glucosamine.
 - C) Inhibiting transpeptidases and carboxypeptidases which cross link the peptidoglycan residues.
 - D) Counterfeiting for D-alanine in the bacterial cell wall.
14. The most frequent side effect of oral ampicillin is:
- A) Nausea and vomiting
 - B) Diarrhea
 - C) Constipation
 - D) Urticaria
15. Select the 3rd generation cephalosporin that can be used only by parenteral route:
- A) Cefpodoxime proxetil
 - B) Ceftizoxime
 - C) Ceftibuten
 - D) Cefixime
16. Chloramphenicol inhibits bacterial protein synthesis by:
- A) Binding to 30S ribosome and inhibiting attachment of aminoacyl tRNA
 - B) Binding to 50S ribosome and preventing peptide bond formation

- C) Binding to 50S ribosome and blocking translocation of peptide chain
 D) Binding to both 30S and 50S ribosome and inducing misreading of mRNA code

17. The aminoglycoside antibiotic causes more hearing loss than vestibular disturbance as toxic effect.

- A) Streptomycin
 B) Gentamicin
 C) Kanamycin
 D) Sisomicin

18. The following antineoplastic drug is a mitotic inhibitor and causes metaphase arrest:

- A) Busulfan
 B) Vincristine
 C) Cytarabine
 D) Procarbazine

19. Choose the azole antifungal drug which is used only topically:

- A) Ketoconazole
 B) Fluconazole
 C) Itraconazole
 D) Econazole

20. Select the drug that acts by inhibiting HIV protease enzyme

- A) Zalcitabine
 B) Efavirenz
 C) Stavudine
 D) Nelfinavir

Q. 2. Long Answers) = 2 x 10 = 20 (Answer 2 out of 3) 602 (22)

I. Discuss in detail mode of action, therapeutic uses, adverse effects and drug interactions of tetracycline.

II. Classify antineoplastic agents with example. Explain in detail mode of action, therapeutic uses and adverse effects of alkylating agents.

III. Enumerate drugs used in treatment of tuberculosis. Discuss in detail treatment of tuberculosis.

Q. 3. Short Answers = 7 x 5 = 35 (Answer 7 out of 9)

- Discuss clinical symptoms and management of barbiturates poisoning.
- Write a note on teratogenicity.
- Discuss sexually transmitted diseases and treatment.
- Classify Antimalarial drugs. Explain MOA of primaquine
- Explain mechanism of action and therapeutic uses of rifampicin.
- Explain mechanism of action of griseofulvin and fluconazole.
- Discuss in detail pharmacology of glucocorticoids.
- Drugs used in the treatment and management of COPD.
- Classify antiulcer agents. Explain MOA of Omeprazol

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

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Sem: VI

Subject Name: Herbal Drug Technology

Subject Code: BP603T

Max. Marks: 75

Date: 19/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
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Q. 1. Multiple Choice Questions (MCQs) = $20 \times 1 = 20$ (All the questions are compulsory)

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- a) Natural binder b) Natural colorant c) Natural thickener d) Natural sweetener

vii) Full form of IPR

- a) Intellectual Property Rights b) Indian Property Rights
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65
x) Most popular Indian herbal industry Dabur was established in....

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xiv) Regulation in production of ASU drugs is done by

- a) Schedule Z b) Schedule P c) Schedule O d) Schedule N

Xv) Alcohol content of Asava/Arishta is in the range of.....

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- a) Neem b) Turmeric c) Tulsi d) Kava-kava

xix) Full form of ICH.

- a) Indian Council for Harmonisation b) International Council for Harmonisation
c) International Course for Harmonisation d) Indian Course for Harmonisation

xx).is NOT an Ayurvedic formulation.

- a) Bhasma b) Gutika c) Syrup d) Lehy

Q. 2. Long Answers = 2 x 10 = 20 (Answer 2 out of 3) 603

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ii) Discuss the Part-I components of GMP (Schedule T) for ASU drugs.
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- iv) Explain the Phytosomes as Novel dosage forms.
- v) Brief the term Biopiracy. Elucidate patent case study of Curcuma.
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- vii) Recognize the present scope and future prospects of Herbal drug industry in India.
- viii) Write a note on Herbs as significant natural excipients.
- ix) Mention the basic principles involved in Ayurvedic system of medicine.

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Biopharmaceutics & Pharmacokinetics

Subject Code: BP604T

Max. Marks: 75

Date: 22/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

i) Drug absorption by passive diffusion is

- | | |
|------------------------|---------------------|
| a) Non ionic diffusion | b) Energy dependent |
| c) Uphill transport | d) Saturable |

ii) Acidic drugs mainly bind to

- | | |
|---------------------------------|--------------|
| a) α - Acid glycoprotein | b) Antigens |
| c) human serum albumin | d) Vitamin A |

iii) In general, the presence of food in the gastrointestinal tract (GIT) reduces the rate and extent of drug absorption due to

- a) Enhanced presystemic drug elimination
- b) High viscosity of the GIT contents
- c) Increased adsorption of the drug on the GI contents
- d) Increased dissolution of the drug in the GI contents

iv) Calculate the volume of distribution of drug, when 300 mg dose is administered showed the initial blood drug concentration of 30 microgram/mL?

- | | | | |
|--------|---------|----------|---------|
| a) 9 L | b) 10 L | c) 100 L | d) 90 L |
|--------|---------|----------|---------|

v) Gaseous and volatile substances are excreted through one of the following routes.

- | | |
|-----------|--------------|
| a) Dermal | b) Pulmonary |
| c) Renal | d) Salivary |

vi) Which is NOT a marker for renal drug excretion?

- 69
- a) Creatinine
 - b) Glucose
 - c) Inulin
 - d) Probencid

vii) One of the following is the phase II drug biotransformation reaction?

- a) Acetylation
- b) Deamination
- c) Hydrolysis
- d) Reduction

viii) Conjugation with Glutathione useful for

- a) water soluble metabolite formation
- b) detoxification
- c) enhancing biological half life
- d) Reduction

ix) What does the word "open" mean in the one compartment open model?

- a) Unidirectional input and output
- b) The drug readily mixes with the blood
- c) The drug easily enters
- d) Easy absorption

x) In one compartment open model drug disposition, the drug is eliminated by one of the following patterns:

- a) Biexponentially
- b) Nonexponentially
- c) Triexponentially
- d) Monoexponentially

xi) In one compartment open model drug disposition, the assigned one compartment is:

- a) Body
- b) Blood
- c) Gastrointestinal tract
- d) Liver

xii) In which of the model peripheral compartments are connected to a central compartment in series?

- a) Catenary model
- b) Physiologic model
- c) Compartment model
- d) Mammillary model

xiii) Steady state plasma concentration (C_{ss}) depends on following factors except

- a) Clearance
- b) Dosing interval
- c) Dose
- d) Elimination half life

xiv) Total systemic clearance in two compartment open model is calculated by

- a) hybrid first order constants for slow elimination phase and apparent volume of distribution
- b) hybrid first order constants for slow elimination phase and Clearance
- c) hybrid first order constants for slow elimination phase and AUC
- d) hybrid first order constants for slow elimination phase and rapid distribution phase

xv) The dosing interval depends on one of the following

- a) Apparent volume of distribution b) AUC
c) Clearance d) Plasma Elimination half life

xvi) The loading dose of a drug is based upon the desired plasma drug concentration and

- a) Time taken for complete elimination
b) Percentage of drug excreted unchanged in urine
c) Percentage of drug bound to plasma protein
d) Apparent volume of distribution

xvii) One of the following statements is correct with respect to non-linear pharmacokinetics.

- a) First order b) First order followed by zero order
c) Pseudo first order d) Zero order

xviii) Xenobiotic means

- a) foreign to body b) Produced by bacteria
c) produced by xerophytes d) synthesized in the body

xix) The volume of distribution of a drug is

- a) an expression of total body volume
b) a measure of total fluid volume
c) a relationship between the total amount of drug in body and plasma concentration of drug
d) proportional to bioavailability of the drug

xx) What is the reason of complicated penetration of some drugs through Blood brain barrier?

- a) High lipid solubility of drug
b) High endocytosis degree in a brain capillary
c) Absence of pores in the brain capillary endothelium
d) Meningitis

Q. 2. Long Answers) = $2 \times 10 = 20$ (Answer 2 out of 3) 602

- i) Describe One compartment open model. Deduce the monoexponential equation of disposition of drugs. Illustrate assessment of Pharmacokinetic parameters after IV bolus administration of drug for One compartment open model.
- ii) Define absorption. List factors influencing absorption of drugs. Discuss physicochemical factors in detail.

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iii) Define Bioavailability and bioequivalence. Explain Pharmacokinetic & Pharmacodynamic Methods of assessing bioavailability.

Q. 3. Short Answers = $7 \times 5 = 35$ (Answer 7 out of 9) 604

- i) List USP *In vitro* dissolution test apparatus and illustrate any 4 apparatus.
- ii) Compare active and passive transport of drug absorption mechanism.
- iii) Differentiate between loading dose and maintenance dose.
- iv) Describe physiological models.
- v) Illustrate Phase I metabolism reactions with example.
- vi) Explain Wagner Nelson method for estimation of K_a .
- vii) Illustrate factors causing Non-linearity in pharmacokinetics with example of drugs.
- viii) Explain protein binding of drugs.
- ix) Explain mechanism of renal excretion. State the equation of renal clearance.
List factors affecting renal excretion of drugs.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Summer 2022

Course: B. Pharmacy

Sem: VI

Subject Name: Pharmaceutical Biotechnology

Subject Code: BP605T

Max. Marks: 75

Date: 30/07/2022

Duration: 3.45 Hrs.

Instructions –

1. All questions are compulsory
2. Answers to MCQs should be written in full sentences
3. Draw diagrams / figures wherever necessary
4. Figures to right indicate full marks

Q. 1. Multiple Choice Questions (MCQs) = 20 x 1 = 20 (All the questions are compulsory)

i)biosensors are based on the principle of sound vibrations.

- | | |
|------------------|-------------------|
| a) Piezoelectric | b) Optical |
| c) Calorimetric | d) Potentiometric |

ii) Which type of restriction endonucleases is used most in genetic engineering?

- | | |
|-------------|------------|
| a) Type I | b) Type II |
| c) Type III | d) Type IV |

iii) A segment of DNA that reads the same from forward and backward is called

- | | |
|--------------------|----------------------|
| a) palindromic DNA | b) complementary DNA |
| c) plasmid DNA | d) copy DNA |

iv) Which of the following is not included in immobilization process?

- | | |
|---------------|------------------|
| a) Absorption | b) Adsorption |
| c) Entrapment | d) Cross-linking |

v) Most commonly used plasmid vector in genetic engineering is

- | | |
|------------|------------|
| a) pBR 322 | b) pBR 328 |
| c) pBR 232 | d) pBR 832 |

vi) Name the class of immunoglobulin which has a pentameric structure?

- | | |
|---------|---------|
| a) IgE | b) Ig G |
| c) Ig A | d) IgM |

vii) Restriction endonucleases are utilised in genetic engineering as.....

- a) Molecular build up at nucleotides
- b) Molecular degradation to DNA break up
- c) Molecular cement for combining DNA
- d) Molecular scalpels for cutting DNA

viii) What will be the consequence of not having an origin of replication (ori) in the vector?

- a) If an ori is absent, replication of vector would not take place
- b) As the cells divide after taking up the vector, both the daughter cells would be having the vector
- c) A colony of transformed colonies is observed
- d) The vector won't be taken up by the cell

ix) The hybridomas are made by _____.

- a) Fusing T cells with myeloma cells
- b) Fusing T helper cells with myeloma cells
- c) Fusing B cells with myeloma cells
- d) Fusing B memory cells with myeloma cells

x) Cell-mediated immunity is carried out by _____ While humoral immunity is mainly carried out by _____

- a) B cells/T cells
- b) Epitopes/Antigens
- c) T cells/B cells
- d) Antibodies/Antigens

xi) Type IV hypersensitivity is also called as _____.

- a) Immediate hypersensitivity
- b) Delayed hypersensitivity
- c) Cytotoxic hypersensitivity
- d) Immune complex hypersensitivity

xii) Which immunoglobulin is responsible for humoral sensitivity and histamine release?

- a) IgE
- b) IgM
- c) IgG
- d) IgA

xiii) _____ technique is used for amplification of RNA molecules

- a) Nested PCR
- b) Real time quantitative PCR
- c) Anchored PCR
- d) Reverse Transcription PCR (RT-PCR)

xiv) The transfer of genetic material from one bacterium to another via virus is called.....

- a) Transformation
- b) Conjugation
- c) Recombination
- d) Transduction

xv) Which of the following characteristics is not true of a plasmid?

- a) It is a circular piece of DNA.
- b) It is required for normal cell function.
- c) It is found in bacteria.
- d) It can be transferred from cell to cell.

xvi) The mutation which will not affect the length of a protein is _____.

- a) Nonsense mutation
- b) Missense mutation
- c) Frame shift mutation
- d) Reverse Mutation

xvii) Which of the following technique is suitable for identifying mRNA molecule in a sample

- a) Western blotting
- b) Southern blotting
- c) Eastern blotting
- d) Northern blotting

xviii) The chemical nature of humulin produced by rDNA technology is

- a) lipid
- b) protein
- c) polysaccharide
- d) nucleic acid

xix) A period during which the growth rate of cells gradually increases is known as _____.

- a) Lag phase
- b) Stationary phase
- c) Log phase
- d) Deceleration phase

xx) It is necessary to have _____ in the nutrient medium for the production of Vitamin B12.

- a) Manganese
- b) Phosphate
- c) Cobalt
- d) Calcium

Q. 2. Long Answers Questions (Answer 2 out of 3) 605 (2 x 10) = 20

- i) Define enzyme immobilization. Elaborate different methods of enzyme immobilization and give their applications.
- ii) Describe the steps involved in r-DNA technology and its application in detail.
- iii) Illustrate immuno-blotting technique? Discuss in detail the different methods of immuno-blotting techniques.

Q. 3. Short Answers Questions (Answer 7 out of 9) (7 x 5) = 35

- i) Define the cloning vector. Explain the different types of cloning vectors.
- ii) Illustrate Hybridoma technology and give the role of HAT medium in monoclonal antibody production.
- iii) State the mutation and comment on different types of mutation.
- iv) Discuss the structure and functions of different types of MHC.
- v) Explain in detail the construction of a typical fermenter with a suitable diagram.
- vi) Define biosensor. Illustrate the components and types of biosensors.

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vii) Write a note on PCR technique

viii) Elaborate in detail any four methods of gene transfer along with diagrams.

ix) Compare different types of hypersensitivity reactions.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 08/02/2023

Course: B. Pharmacy
Subject Name: Medicinal Chemistry-II
Max Marks: 75

Sem: V
Subject Code: BP501T
Duration: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define diuretics with suitable examples.
- ii) Discuss the MOA of calcium channel blocker.
- iii) Classify anti-arrhythmic agents?
- iv) Discuss the MOA of Heparin.
- v) Draw the structure of Cortisone and Hydrocortisone.
- vi) How antimetabolites act as anticancer agents?
- vii) Discuss the role of nitric oxide in human body?
- viii) Write the scheme of synthesis of Benzocaine.
- ix) Explain the diseases of Thyroid gland with suitable example.
- x) Write a note on oral contraceptives.

Q. 2. Long Answers (Answer 2 out of 3)

(2 x 10) = 20

- i) Classify the antihypertensive agents? Discuss in detail about ACE inhibitors and Angiotensin II Receptor Blocker along with SAR.
- ii) Give the classification of Antidiabetic agents with structures from each class. Discuss the SAR of sulfonylureas and draw the synthesis of Tolbutamide.
- iii) Classify antihistaminic agents by giving examples of each class. Explain in detail H1 antagonists and outline the synthesis of Diphenhydramine hydrochloride.

Q. 3. Short Answers (Answer 7 out of 9)

(7 x 5) = 35

- i) Explain the chemistry and MOA of cardiac glycosides.
- ii) Discuss in detail about loop diuretics and thiazide diuretics.
- iii) Justify the sentence "Nitro vasodilator act as anti-anginal agent" with suitable example.
- iv) Classify antihyperlipidemic agents with suitable example. Explain MOA of HMG -CoA Reductase Inhibitors.
- v) Classify local anesthetics with suitable example and explain SAR of local anesthetics.
- vi) Discuss in detail about testosterone sex hormone with its structure, metabolism and SAR.
- vii) Classify anticancer agent with suitable examples and explain Alkylating agents.

- viii) Give an account of anticoagulants. Write the synthesis of warfarin.
- ix) Discuss proton pump inhibitors along with MOA.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 10/02/2023

Course : B. Pharmacy
Subject Name : Industrial Pharmacy-I
Max Marks : 75

Sem: V
Subject Code : BP502T
Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) What is BCS classification of drug? Enlist each class with example.
- ii) Explain preformulation with definition, goals and objectives.
- iii) Enlist manufacturing defects in tablet.
- iv) Define granulation. Give objectives and enlist methods of granulation.
- v) Define tablet. Enlist types of tablet.
- vi) Write difference between hard gelatin and soft gelatin capsule.
- vii) Write cleaning of containers and closures of parenteral
- viii) Explain any two excipient used in ophthalmic preparation.
- ix) Write a note on pull sealing method.
- x) Give steps involved in pressure and cold filling of aerosol manufacturing

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Enlist and explain pelletization techniques.
- ii) What is parenteral product? Write in detail quality control tests.
- iii) Define pharmaceutical aerosol. Describe the major components of same.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Explain in detail physical properties of new drug molecule.
- ii) Enlist evaluation test of tablet. Explain any four.
- iii) Define excipient. Write excipients used in tablet.
- iv) Explain emulsion and suspension with definition, advantages, limitation and types.
- v) Give the filling methods of hard gelatin capsules.
- vi) Add a note on quality control test of soft gelatin capsule.
- vii) Discuss the preparation and evaluation of eye ointment.
- viii) Describe the formulation and preparation of shampoo.
- ix) Explain quality control test for glass.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 13/02/2023

Course : B. Pharmacy
Subject Name : Pharmacology-II

Sem: V
Subject Code
:BP503T

Max Marks : 75

Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Explain electro-physiology of heart.
- ii) Classify anti arrhythmic drugs.
- iii) Explain mode of action of Nitroglycerine.
- iv) Explain therapeutic uses of anti coagulants.
- v) Define and classify autacoids.
- vi) Explain role of growth hormone and enlist Growth hormone inhibitors.
- vii) Explain uses of Vitamin D.
- viii) Classify Non-Steroidal Anti-Inflammatory Drugs.
- ix) Explain action of Prolactin inhibitor-Bromocriptine
- x) Enlist fibrinolytics.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Explain in detail Etiology, drug classification, Pharmacology of antihypertensive drugs.
- ii) Discuss Synthesis, storage, role and pharmacology of thyroid hormones
- iii) Explain Principle and types of Bioassay. Discuss insulin bioassay.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Discuss mechanism of action of Digitalis
- ii) Explain pharmacology of Hematinics
- iii) Discuss Pharmacology of diuretics
- iv) Explain histamine their physiological role and classify anti-histaminics.
- v) Explain Pharmacology of Anti gout drugs
- vi) Discuss insulin preparations and oral hypoglycemic agents
- vii) Describe role of estrogen and progesterone as oral contraceptive drugs.
- viii) Discuss anti-hyperlipidemic drugs
- ix) Explain action of Prostaglandins

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2022

Date: 15/02/2023

Course: B. Pharmacy

Subject Name: Pharmacognosy & Phytochemistry-II

Max Marks: 75

Sem: V

Subject Code: BP504T

Duration: 3 Hr.

I. Objective Type Questions

(10 X 2 = 20)

- i) Define the term extraction and electrophoresis.
- ii) Explain morphology of Senna leaflet
- iii) Draw a well labelled diagram of Soxhlet assembly and percolator
- iv) Define the term metabolic pathway and metabolites.
- v) Write the biological source and identification test of Cinchona bark.
- vi) Draw a well labelled diagram of Fennel fruit transverse section.
- vii) Define radioactive isotopes with examples.
- viii) Write Biological source and uses of Asafoetida.
- ix) Classify tannins with suitable examples
- x) Write in short applications of HPLC.

II. Long Answers (Answer 2 out of 3)

(2 X 10 = 20)

- i) Define and classify alkaloids with suitable examples and write in detail about Vinca.
- ii) Discuss in detail methods of extraction of Phytoconstituents.
- iii) Explain in detail shikimic acid pathway with its role in biosynthesis of metabolites.

III. Short Answers (Answer 7 out of 9)

(7 X 5 = 35)

- i) Write synonyms, biological source, chemical constituent, identification test and uses of Digitalis.
- ii) Write Industrial production, estimation and utilization of Sennosides.
- iii) Briefly explain Steps involved in tracer techniques.
- iv) Write about isolation, identification, analysis of Curcumin
- v) Define the term chromatography and add a note on TLC
- vi) Write Industrial production, estimation and utilization of Atropine
- vii) Write difference between Sumatra benzoin & Siam benzoin.
- viii) Give isolation identification and analysis of Caffeine.
- ix) Write synonyms, biological source, chemical constituent, morphology and uses of Fennel.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 17/02/2023

Course	: B. Pharmacy	Sem:	V
Subject Name	: Pharmaceutical Jurisprudence	Subject Code	: BP505T
Max Marks	: 75	Duration	: 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Define following terms as per Narcotics drugs and Psychotropic substances Act, 1985:
a) Addict
b) Narcotic drug
- ii) Define according to D&C Act, 1940
a) Loan License
b) Cosmetic
- iii) Give formula for calculation of retail price of formulation as per DPCO 1995. Explain each term in formula.
- iv) What is code of ethics? Write down any two recommendations of DEC.
- v) What following schedules prescribe according to D&C Act, 1940?
a) Schedule H-1 b) Schedule G
- vi) Write down objectives of Right to Information Act, 2005.
- vii) Explain circumstances under which Registered Medical Practitioner can terminate pregnancy as per Medical Termination of Pregnancy Act, 1971.
- viii) Mention different sale licenses required for wholesale and retail of drugs as per D&C Act, 1940.
- ix) Write powers of Drug Inspector.
- x) Explain storage of schedule-X drugs under D&C Act, 1940.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Write down requirements of labelling of drugs as per D&C Act 1940
- ii) Define: a) Advertisement b) Magic Remedy. Write down objectives and classes of prohibited advertisements of Drugs and Magic Remedies Act, 1954.
- iii) Write objectives, offences and penalties under NDPS Act, 1985.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Explain purpose of Pharmaceutical legislation and duties of Pharmacist in relation to his profession.
- ii) What is Patent? What is the process of application of patent in India?
- iii) Define Bonded manufactory. Discuss its structure and manufacturing requirements.
- iv) Write constitution and functions of PCI.
- v) Define spurious drugs and give objectives of D&C Act 1940.
- vi) Give procedure for preparing first register & write down qualification required for entry on it as per Pharmacy Act 1948.

- vii) Discuss schedule N with reference to entrance, premises, furniture and equipments.
- viii) Write short note on Institutional Animal Ethics Committee.
- ix) Define:
 - a) Toilet Preparation
 - b) Maximum Retail Price
 - c) Repatriate
 - d) Ceiling Price
 - e) Spirit store

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 07/02/2023

Course : B. Pharmacy
Subject Name : Medicinal Chemistry-III

Sem: VI
Subject Code : BP601T
Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1 Objective type Questions (Answer all the questions)

10 x 2=20M

1. Define the term antibiotic with suitable example.
2. Write a note on- Macrolide antibiotic
3. Classify anti-tubercular agents.
4. Write about quinolones.
5. Comment on- Antifungal antibiotics.
6. Write about folate reductase inhibitors.
7. What are various approaches used in drug design.
8. Enlist different applications of combinatorial chemistry.
9. What are anthelmintics.
10. Define the term prodrugs.
11. Explain classification and SAR of Sulfonamides.
12. Explain etiology of malaria

Q2. Long Answer Questions. (2 Out of 3)

2 x 10=20M

1. Explain in brief about stereochemistry, structure activity relationship and uses of β -lactam Antibiotics.
2. Write a note on- Synthetic anti tubercular agents.
3. Explain in brief about Antiviral agents.

Q. 3 Short Answer Questions. (7 Out of 9)

7 x 5=35M

1. Explain Pharmacophore modeling and docking techniques.
2. Write a note on solid phase synthesis.
3. Explain in brief about dapsone.
4. Comment on- Biguanides and dihydro triazines.
5. Explain in brief about stereochemistry and structure activity relationship of Aminoglycosides.
6. Explain unclassified antibiotics with suitable examples.
7. Explain in brief about structure activity relationship of quinolones.
8. What are Tetracyclines?
9. Write in brief about Anti-protozoal Agents.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 09/02/2023

Course	: B. Pharmacy	Sem:	VI
Subject Name	: Pharmacology: III	Subject Code	: BP602T
Max Marks	: 75	Duration:	3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) What is Digestant? Give examples.
- ii) What is Nasal decongestant? Give its examples.
- iii) What is mechanism of action of Griseofulvin?
- iv) Define Antitussives along with Examples.
- v) Classify Antimicrobial agents based on chemical structure.
- vi) Give reason: 'Chloramphenicol causes Gray baby syndrome.'
- vii) What is mean by Chronopharmacokinetics?
- viii) What is Poison? Give types of Poisoning.
- ix) Give mechanism of action of Dapsone.
- x) What are Immunosuppressants? Give examples

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Define Bronchial Asthma and classify Anti asthmatic drugs with example and give pharmacology of any one Bronchodilator.
- ii) Explain malaria cycle. Classify Antimalarial drugs with example and Discuss mechanism of action of Chloroquine.
- iii) What is Chemotherapy? Classify Antineoplastic agents with example. Write Mechanism of action of Alkylating agents.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Define and classify drugs used in Peptic ulcer. Give mechanism of action of Omeprazole.
- ii) What are Respiratory stimulants? Give pharmacology of Doxapram.
- iii) Discuss clinical Sign and symptoms along with management of Barbiturate poisoning.

- iv) Define and classify Anti-emetic drugs. Write the effects of metoclopramide on GIT.
- v) What are antibiotics? Give mode of action, adverse effect, therapeutic applications and contraindication for Tetracycline.
- vi) What is Tuberculosis? Classify Antitubercular drugs and give mechanism of action for Isoniazid.
- vii) What are sexually transmitted diseases? Explain treatment for them.
- viii) What is Biorhythm? Explain in detail concept of Chronopharmacology
- ix) Classify sulphonamides. Give its mechanism of action.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Supplementary Semester Examination – Winter 2022

Date: 11/02/2023

Course: B.Pharmacy Sem: VI

Subject Name: Herbal Drug Technology

Max Marks: 75

Subject code: BP603T

Duration : 3 hr

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary

Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions)

(10x2)= 20

- i) Define Herb and herbal medicine product.
- ii) Explain Ephedra herb drug interaction.
- iii) Explain basic principles of Ayurveda.
- iv) Explain Ginger as Nutraceutical in CVS.
- v) Define Patent and Biopiracy.
- vi) Give biological source and health benefits of Spirulina.
- vii) Discuss the objectives of GMP.
- viii) Explain Alfalfa drug as role of nutraceutical in Diabetes.
- ix) Name two Herbs used in Dental Care with their biological source.
- x) What is IPR and give its types.

Q.2. Long answers (Answers 2 out of 3)

(2x10)= 20

- i) Explain method of preparation and evaluation parameters for Asava, Arishta and Bhasma.
- ii) Explain in detail raw material used for Hair care cosmetics.
- iii) Describe different good agriculture practices in cultivation of medicinal plants.

Q.3 Short answers (Answers 7 out of 9)

(7x5)=35

- i) Write institutions involved in work on medicinal & aromatic plants in India.
- ii) Explain regulation of manufacture of ASU drugs
- iii) Write in brief note on Farmers and Breeder's right.
- iv) Explain Homeopathy system of medicines.
- v) Write a note on organic farming.
- vi) Explain Liposomes as a novel dosage form
- vii) Define and classify herbal excipients with examples.
- viii) Write in detail about case study of Curcuma.
- ix) Explain WHO & ICH guidelines for stability testing of herbal drugs.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

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Tuesday, Date: 14-02-2023

Course- B. Pharmacy

Sem-VI

Subject Name- Biopharmaceutics & Pharmacokinetics

Subject code- BP604T

Max. Mark- 75

Duration-3 hrs

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Give characteristics of an active transport mechanism.
- ii) What is enterohepatic cycling of a drug?
- iii) List factors affecting protein binding of drugs.
- iv) Give benefits of drug clearance.
- v) Comment on particle size as a tool to enhance bioavailability of drugs.
- vi) What is apparent volume of distribution.
- vii) Differentiate between transcellular & paracellular transport.
- viii) Write importance of urinary excretion data.
- ix) Enlist patient related factors of GI absorption of drugs.
- x) Explain concept of clearance.

Q. 2. Long Answers (Answer 2 out of 3) (5x10) = 20

- i) Define drug absorption. Discuss physiochemical factors influencing GI absorption of drugs.
- ii) Explain in detail one compartment open model- intravenous bolus administration.
- iii) Discuss the methods used for enhancing bioavailability through enhancement of drug solubility or dissolution rate.

Q. 3. Short Answers (Answer 7 out of 9) (7x5) = 35

- i) Explain various theories of drug dissolution.
- ii) Write a note on non-renal routes of drug excretion.
- iii) Explain passive diffusion & facilitated diffusion mechanism of drug transport.
- iv) What is IVIVC? Give its significance.
- v) Explain sigma minus method for determination of pharmacokinetic parameters.
- vi) Write a note on protein binding of drugs.

vii) Discuss about pH partition hypothesis.

viii) Explain method of residuals.

ix) Explain two compartment open model for IV bolus administration.

-----END OF THE PAPER-----

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2022

Date: 16/02/2023

Course:	B. Pharmacy	Sem: VI	
Subject Name:	Pharmaceutical Biotechnology	Subject Code: BP605T	
Max Marks:	75	Duration:	3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Write the applications of genetic engineering.
- ii) Enlist various enzymes used in rDNA technique with their functions.
- iii) Differentiate between Major Histocompatibility Complex(MHC) class I and class II molecules.
- iv) Define Immunity. Enlist types of immunity
- v) Give role of microbes in industry.
- vi) Define Antigen and Antibody.
- vii) Give the roles of Southern and Western blotting techniques.
- viii) Define: transduction and conjugation.
- ix) Comment on cloning vectors. Give their examples.
- x) Differentiate between prokaryotic and eukaryotic cells.

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) What is enzyme immobilization? Describe methods of enzyme immobilization along with their applications.
- ii) Explain in detail about the production and purification of monoclonal antibodies by hybridoma technology. Give their applications.
- iii) Explain the basic principle of rDNA technology. Write a detailed account on human insulin production by rDNA technology.

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Write a short note on PCR.
- ii) Explain the types of mutation and mutants with suitable examples.
- iii) Elucidate the structure of immunoglobulins with neat labelled diagram.
- iv) Explain about the production of penicillin by fermentation technique.
- v) Write a note on dried human plasma and plasma substitutes.
- vi) Illustrate large scale production fermenter design with its various controls.
- vii) Describe type I hypersensitivity reaction with suitable diagram.
- viii) Illustrate the working principle and applications of biosensors.
- ix) Elaborate ELISA technique.

-----END OF THE PAPER-----

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – Winter 2022

Date: 20/02/2023

Course : B. Pharmacy
Subject Name : Quality Assurance
Max Marks : 75

Sem: VI
Subject Code : BP 606 T
Duration : 3 Hr.

Instructions:

1. All questions are compulsory
2. Draw diagrams / figures wherever necessary
3. Figures to right indicate full marks

Q. 1. Objective Type Questions (Answer all the questions) (10 x 2) = 20

- i) Differentiate between QA and QC.
- ii) What are purchase specifications for equipment?
- iii) Define validation and calibration.
- iv) What is master formula record? Give example.
- v) Enlist philosophies of TQM. Explain any one.
- vi) Explain different types of process validation.
- vii) Explain hydrolytic resistance test for glass containers.
- viii) Enlist steps for ISO registration.
- ix) Define Recall and classify it.
- x) What is SOP and quality audit?

Q. 2. Long Answers (Answer 2 out of 3) (2 x 10) = 20

- i) Discuss in detail Analytical Method Validation.
- ii) Give scope for NABL accreditation and discuss in detail procedure for it.
- iii) Give purpose of ICH guidelines and discuss ICH stability testing guideline

Q. 3. Short Answers (Answer 7 out of 9) (7 x 5) = 35

- i) Write a note on maintenance of sterile area and control of contamination.
- ii) Describe complaint evaluation.
- iii) Discuss in brief different elements of GLP.
- iv) Describe quality control tests for rubber.
- v) Write a note on Good Warehousing Practice.
- vi) Explain elements of QbD.
- vii) Discuss qualification of UV-Visible Spectrophotometer.
- viii) Write a note on personnel training, health and hygiene. Give an account of their responsibilities.
- ix) Discuss equipment qualification.

-----END OF THE PAPER-----