8 0 Registration No: 102 102 102 102 Total Number of Pages: 02 MPA101T/ MPC101T/ / MPG101T/ MPH101T/ MPL101T/ MQA101T 1st Semester Regular / Back Examination: 2021-22 MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES BRANCH(S): ANALYSIS & QUALITY ASSURANCE, PHARMACEUTICAL ANALYSIS/ CHEMISTRY/ PHARMACOGNOSY/ 102 102 102 PHARMACEUTICAL TECHNOLOGY, PHARMACEUTICS/ PHARMACOLOGY/ PQA Time: 3 Hour Max Marks: 75 Q.Code: OF587 Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III. The figures in the right hand margin indicate marks. 102 102 102 (2×10) Answer the following questions: Q1 a) What are chromophores and Auxochromes. Give examples? At wave number 1710 to 1740 cm-1 what are the functional groups that may appear for an organic compound in IR spectrum. c) What is quenching? Give two examples of quencher. Define chemical shift. Write the significance TMS. 102 102 What is the difference between the base peak and the molecular ion peak? What is HPLC and UHPLC. Write the advantages of UHPLC over HPLC. g) What is theoretical plate. Write its significance. h) Write the sources of X-Rays. Write the importance of X-Ray crystallography in structure elucidation. Why is nitrogen gas used in TGA analysis? j) When and why, for a pharmaceutical preparation, one can proceed for DTA or 102 DSC analysis2 102 102 102 102 102 Part-II Focused-Short Answer Type Questions- (Answer Any Seven) (5×7)Q2 a) Briefly discuss the electronic transition in UV spectroscopy. b) Explain the principle and application of capillary electrophoresis. Explain about spin-spin coupling and its importance in NMR. Explain Bragg's equation. 102 102 102 102 e) What is shielding and de-shielding write the importance of J constant. Write the criteria for fluorescence and its pharmaceutical application. Write the principle instrumentation and application of flame photometry. Explain the principle involved in Gas-chromatography. Explain the functional group region of IR spectrum. How will you proceed for an IR spectrum. Interpretation 102 102 102 102

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Part-III Long Answer Type Questions (Answer Any Two) Discuss instrumentation and principle of mass spectroscopy with a diagram Q3 (10)Write a note on any two. (10)Paper electrophoresis. b) Ion exchange chromatography c) MALDI d) HPTLC Explain solvents and selection criteria for UV spectroscopy. Discuss various Q5 (10)sample preparation techniques for IR spectroscopy. What are the electrodes used in potentiometry. Write the principle of DSC and Q6 (10)application of TGA.

Registration No: 0 Total Number of Pages: 01 M.Pharm MPH102T 1st Semester Regular / Back Examination: 2021-22 DRUG DELIVERY SYSTEM BRANCH(S): PHARMACEUTICAL TECHNOLOGY, PHARMACEUTICS Time: 3 Hour Max Marks : 75 Q.Code: OF629 Answer Question No.1 (Part-1) which is compulsory, any seven from Part-II and any two from Part-III. The figures in the right hand margin indicate marks. Part-I Q1 Answer the following questions: (2×10) What are toxoids? Why permeation enhancers are used for TDDS? b) What is pharmacogenetics? d) What is the importance of adhesive rims for TDDS? Differentiate proteins and peptides: f) Classify pH-sensitive drug delivery systems. g) Mention the importance of swelling index? What is wicking agent? Give an example. h) Define rate limiting step of a dosage form. What do you mean by Fickian diffusion? Part-II Q2 Focused-Short Answer Type Questions- (Answer Any Seven) (5×7)Personalized medicine b) Various approaches for SR/CR formulations. c) Polymer application in pharmacy d) Osmotic activated Drug Delivery Systems a) 3-D printing f) Single shot vaccines g) Telepharmacy Approaches to extend GI transit. Barriers for protein delivery. Part-III Long Answer Type Questions (Answer Any Two) Name various skin barriers for penetration of drug. Discuss in detail the (10)technologies involved in TDDS. Differentiate between CR and SR; Discuss various mechanisms of Drug Delivery (10)from SR/CR formulations in detail.

Write the Principle of muco-adhesion, discuss in detail about formulation and

Mention the drawbacks for ocular permeation. Discuss various drug delivery

evaluation of buccal drug delivery systems

systems for eye.

(10)

(10)

Q5

Q6

Registration No: Total Number of Pages: 01 M.Pharm MPH103T 1st Semester Regular / Back Examination: 2021-22 MODERN PHARMACEUTICS BRANCH(S): PHARMACEUTICAL TECHNOLOGY, PHARMACEUTICS Time: 3 Hour Max Marks: 75 Q.Code: OF679 Answer Question No.1 (Part-1) which is compulsory, any seven from Part-II and any two from Part-III. The figures in the right hand margin indicate marks. Part-I Q1 Answer the following questions: (2×10) What are the objectives of preformulation studies? Why is Real-Time stability testing performed? What is SMEDDS? d) State the scope of validation. What do you mean by Quality by Design? What is a Contour Plot? g) Define multiple emulsion and microemulsion. What are the main objectives of cGMP? How does decompression affect the quality of tablets? What is Chi square test? Rart-II Q2 Focused-Short Answer Type Questions- (Answer Any Seven) (5×7)Write about the theories of dispersion. Write a short note on accelerated stability testing. How is pyrogen testing of parenterals performed? what are the different types of process validation? Write about the ICH guidelines for calibration of equipments. Give a brief note on master formula record. Write about the principles of GMP. Explain product recall system. Give a brief note on ANOVA test. Part-III Long Answer Type Questions (Answer Any Two) Q3 Describe briefly about the compression force-time profiles of tablets. (10)

Illustrate the different concepts of Total Quality Management.

Discuss about the optimization techniques in pharmaceutical formulations.

Describe briefly about the URS, DQ, IQ, OQ, and PQ processes of facilities.

(10)

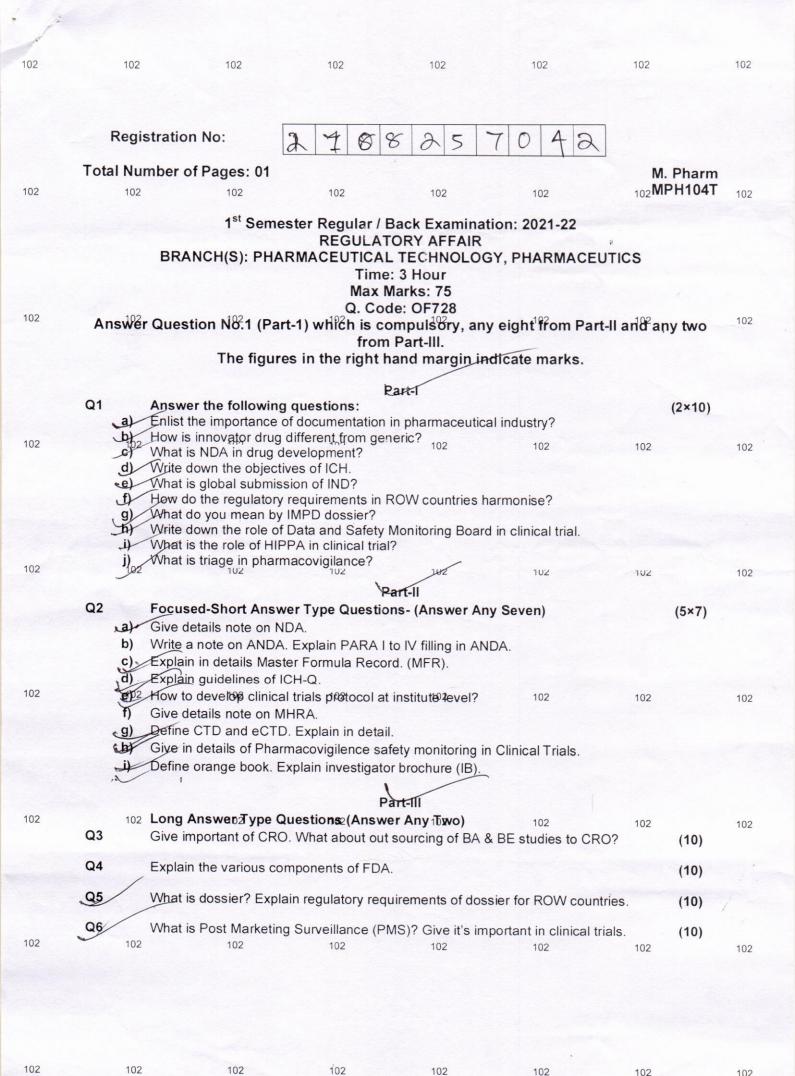
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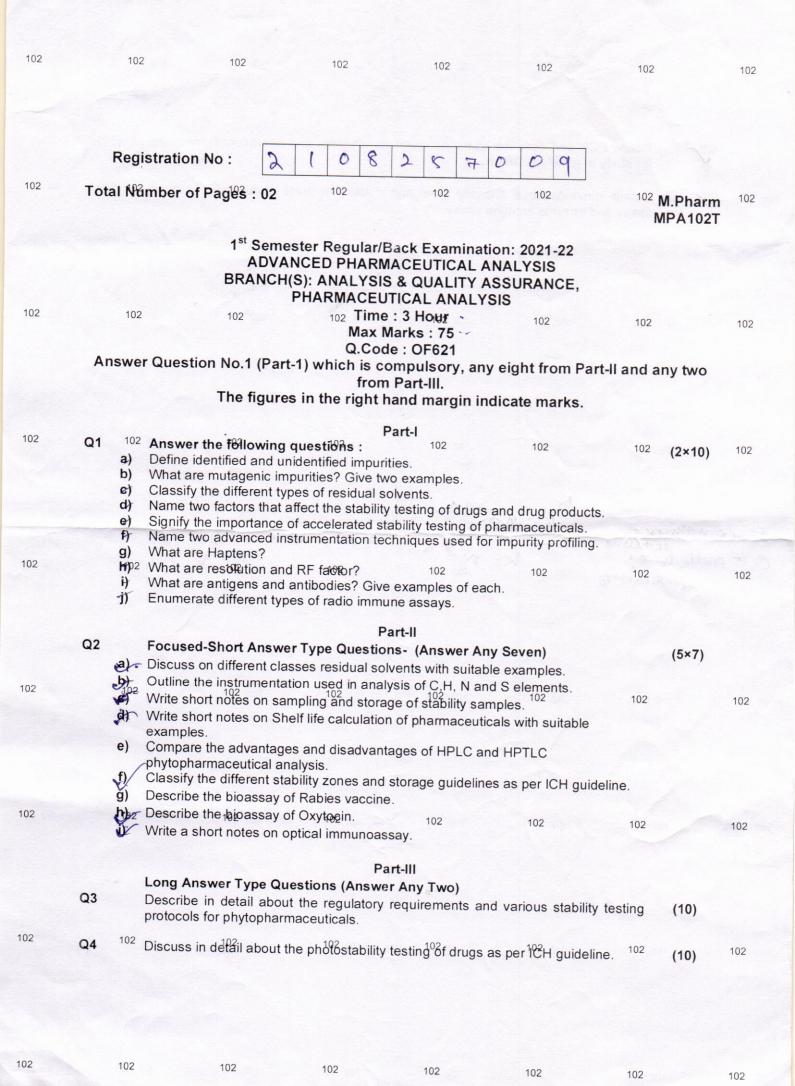
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Q4

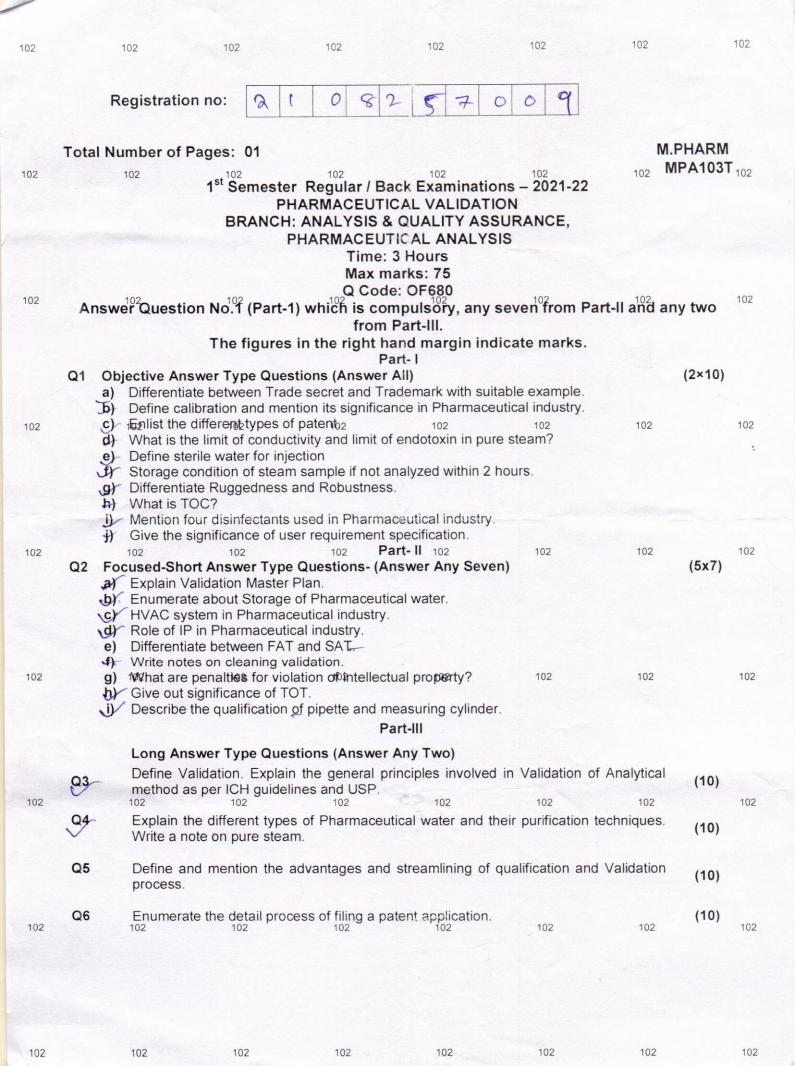
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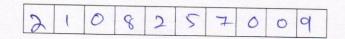


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102 102 102 102 102 102 MPA104T 102 1st Semester Regular Examinations 2021-22 FOOD ANALYSIS THEORY BRANCH: ANALYSIS & QUALITY ASSURANCE, PHARMACEUTICAL ANALYSIS Time: 3 Hours Max marks: 75 Q Code: OF718 102 Answer Question No.7 (Part-1) which is compulsory, any seven from Part-II and any twofrom Part-The figures in the right hand margin indicate marks. Part-I Q1 Objective Answer Type Questions (Answer All) (2x10)Why is defatting of samples for carbohydrate analysis being done? Give importance of saponification value and iodine value for lipids? What are types of preservatives used in food products? 102 102 Classify vitamins based on lipophilicity. d) 102 Define sweeteners. Give examples of sweeteners obtained from nature. e Enumerate common adulterants of milk. (f) Give the examples of monosaccharide and disaccharides. Explain Ninhydrin test? if Give methods for determination of ethyl alcohol in fermentation products. tty What is AGMARK? 102 Part- II₁₀₂ 102 Q2 Focused-Short Answer Type Questions- (Answer Any Seven) 102 (5x7)Comment in brief on hydrogenation of vegetable oils. -bT Give an account of pharmacokinetics of carbohydrates. Enumerate the protein structure. Cel Explain the principle and procedure for analysis of Vitamin C. ,d) 1000 How will you quantitatively determinestarch and urea in milk? 102 Write notes on organophosphorus and organochloride pesticides. f) g) Explain the determination of rancidification of food. Describe about analysis of protein by Biuret assay method." Summarize the functions of USFDA. * Part-III 102 102 Long Answer Type Questions (Answer Any Two) 102 Q3 Discuss the principle of microbial assay of Vitamins of B series. (10)Illustrate the types and methods of detection of Synthetic and Natural Dyes (10)usedin food industry. What do you mean by crude fibre and dietary fibre? How they are estimate? 102 102 102 102 (10)102 102 Q6 Describe the procedures for determination of adulterations in fat and oils. (10)

M.PHARM

Registration No: 0 Total Number of Pages: 02 M.Pharm MPC102T 1st Semester Regular Examination: 2021-22 ADVANCED ORGANIC CHEMISTRY -I BRANCH(S): CHEMISTRY Time: 3 Hour Max Marks: 75 Q.Code: OF620 Answer Question No.1 (Part-1) which is compulsory, any seven from Part-II and any two from Part-III. The figures in the right hand margin indicate marks. Part-I Q1 Answer the following questions: (2×10) a) Enumerate the synthesis of Metronidazole Differentiate synthon and retron with suitable example. How do you deprotect the MOM and Trityl protection of primary alcohol? C) Write the formation of Vilsmeyer-Haack reagent. How do you know if a reaction is SN1 or SN2? et Write the structure and one application of dicyclohexyl carbodimide (DCC). What is an allylic shift? What is its importance in organic reactions? g) What is Bemthson Acridines synthesis? it Why are the products derived out of Saytzeff's rule more stable? Why is the Sharpless asymmetric epoxidation enantioselective? Part-II Focused-Short Answer Type Questions- (Answer Any Seven) Q2 (5×7)Write the mechanism and synthetic applications of Mitsunobu reaction. a Describe in detail about the factors influencing bimolecular substitution reactions. Explain the effect of substituents on reactivity and orientation of mono substituted c) Write a note on Debus-Radziszewski imidazole synthesis. e) Compare E1 and E2 reactions. Discuss the factors affecting E2 reactions. Discuss the chemistry and uses of Wittig reagent. Describe the protection and deprotection methods for 1,2- diols. h). Outline the synthesis of Celecoxib with reagents used and reaction conditions followed. i) Write a short note on Functional group interconvertion (FGI) with examples. Part-III Long Answer Type Questions (Answer Any Two) Discuss the method of formation, stability, relative reactivity and synthetic Q3 (10)applications of carbocations.

Explain the retrosynthetic strategies for synthesis of three, four and five membered

(10)

Q4

rings.

Q5 Mention the heterocyclic nucleus present and also the steps involved in the synthesis of Chloroquine and Trimethoprim. (10)Discuss the protection and deprotection techniques used for amino acids with Q6 (10)suitable examples.

Registration No:

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Total Number of Pages: 02

M.Pharm MPC103T

1st Semester Regular / Back Examination: 2021-22 ADVANCED MEDICINAL CHEMISTRY BRANCH(S): Chemistry

> Time: 3 Hour Max Marks: 75 Q.Code: OF673

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

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions:

(2×10)

- a) Define hit, lead and candidate in drug Discovery?
- b) What is the significance of eudysmic ratio (eudismic ratio)?
- c) What are the challenges of making COX-1 selective inhibitors?
- d) Write the applications of leukotrienes?
- e) Name a local constraint and write its benefit in the design of peptidomimetics.
- f) What is the difference between neutral antagonist and inverse agonist?
- g) Differentiate between carrier linked prodrugs and bioprecursors.
- h) What is the significance of analog design?
- i) What is the difference between cofactor & prosthetic group?
- j) Write the chemical structure and uses of any one ACE inhibitor?

Part-II

Q2 Focused-Short Answer Type Questions- (Answer Any Seven)

(5×7)

- a) Is it true that the active site of an enzyme can be synthetically developed? If true, illustrate. If false, substantiate with reasons.
- Discuss the role of bioisosterism in drug research.
- c) What are indirect acting sympathomimetic agents? Write the structure and uses of any one indirect acting sympathomimetic drug.
- (d) Explain various forces involved in drug-receptor interactions.
- e) Write a brief note on genetic principles of drug resistance.
- f) How does rigid analog and alteration of chain branching help in analog design.
- Give an account on chemistry of prostaglandin.
- b) Write a short note on design of non-covalently binding enzyme inhibitors.
 - Briefly discuss the role of enantioselectivity in drug metabolism.

Part-III

Long Answer Type Questions (Answer Any Two)

- Write the classification and SAR of H1 receptor antagonists. Give the mode of action and synthesis of any one new generation H1 receptor antagonist. (10)
- What is a prodrug? Explain the attempts made on drug molecules to enhance the aqueous solubility, gastrointestinal absorption and CNS specific delivery with suitable examples.

102		102	102	102	102	102	
	Q5 Define	nandida i di					
		s the design of p	s. What are the septidomimetics is	eir advantages by incorporating o	over peptides as conformational cor	drugs? straints.	(10)
102	Q6 What identifi	are different s ication technique	tages of drug	discovery? Disc	cuss in detail t	he lead	(10)
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				P	Part-I				
	Q1	a)	Answer the following Biological source and	questions:			(2	×10)	
102		b)92	Structure of Pacletaxe	102	102	102	102	102	
		c) d)	Structure of Lovastatin						
		e)	Biological source and Structure of Testostero	uses of Ergot one					
		f)	Structure of Squalene						
		g) h)	Biological source and Name some anti-diabe	uses Gymnema sy	ylvestre				
102		i)	What is hybridoma tec	hnology - Form	of my brid ce	11, B-lymphatic all	a temor cel	1	
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	00			Pa	art-II				
	Q2	a)	Focused-Short Answ Describe about one Ar	er Type Question	ns- (Answer A	ny Seven)	(5×7)		
		þ)	What isCurare alkaloid	s. Describe about	its Pharmacolo	gical activity.			
		c)	Describe in brief about Describe the structural	the methods of st	tructural elucida	tion of Alkaloid			
102		e) 02	Discuss the structural	elucidation and ste	ereochemistry o	or epnedrine f reserpine	102	102	
More of		f) g)	Enumerate isolation ar Describe the chemistry	id purification of fl	avonoids			102	
Kenin		h)	Discuss the structural e	elucidation of citra	L				
		i)	What is Recombinant I	DNA technology					
				Pa	rt-III				
102	Q3		Long Answer Type Q	uestions (Answe	r Any Two				
102	43	102	Discuss about drug affe	ecting abpervous	systemowith exa	ample 102	102	10) 102	
	Q4		Enumerate in detail a example	bout the chemis	try of macrolid	antibiotic with a s	uitable (10)	
	Q5		What is alkaloid, clasmolecular modification	ssify and describ	be about the	isolation, purificatio	n and ('	10)	
102	Q6	102	Give a note q _{θ2} clinical a	applicațion and re	cent advances i	n ₁₀₂	102 (*	10) 102	