Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – II • EXAMINATION – SUMMER • 2014

Subject Code: 1921501 Date: 29-05-2014

Subject Name: Modern Pharmaceutical Analysis

Time: 02:30 pm - 05:30 pm Total Marks: 80

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the principle for proteins and peptide sequence analysis by Sanger and Edman degradation.	**06**
	(b)	Discuss the role of Iso electric focusing in analysis of proteins and peptides.	**05**
	(c)	What is polymorphism? Explain its significance in formulation development.	**05**
Q.2	**(a)**	Discuss pre column and post column derivatization in amino acid analysis.	**06**
	(b)	What is tryptic mapping? Write its uses and limitations.	**05**
	(c)	Explain the principle of flow injection analysis. State its applications.	**05**
Q.3	**(a)**	Describe the role of chromatography in compendial testing of API.	**06**
	(b)	Discuss the applications of NIR technique in solid oral dosage form analysis.	**05**
	(c)	Explain the principle of ion exchange chromatography for analysis of proteins and peptides.	**05**
Q.4	**(a)**	What are radiopharmaceuticals? Describe the quality control tests performed for their evaluation.	**06**
	(b)	Describe the different types of microscopy and write applications of each in solid state analysis.	**05**
	(c)	Describe bioburden testing of parenteral product solution and write its significance.	**05**
Q.5	**(a)**	Describe bacterial endotoxin testing for parenteral dosage forms.	**06**
	(b)	Define cosmetics. Describe various tests for evaluation of shampoos.	**05**
	(c)	Describe the role of NMR spectroscopy in solid state analysis with suitable examples.	**05**
Q. 6	**(a)**	Enlist the quality control tests for medicinal plant material as per WHO. Describe any two in brief.	**06**
	(b)	Discuss the role of isolation techniques in degradation and impurity analysis.	**05**
	(c)	What are the different types of impurities encountered in pharmaceuticals? Describe the analytical methods used for determination of each type.	**05**
Q.7	**(a)**	Describe ICH quality guidelines in brief.	**06**
	(b)	Discuss the principle and applications of DSC in analysis of drugs.	**05**
	(c)	Write the procedure and significance of determining bulk density and angle of repose for powders.	**05**

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