QP Code: 101350 **Reg No: ……**

First Year M.Pharm Degree Examinations August 2017

Modern Analytical and Research Methods

(Common for all branches)

Time: 3 hrs **Maximum Marks: 100**

- ***Answer all questions***
- ***Draw diagrams wherever necessary***

Essays: **(2x20 =40)**

1. Describe the theory, instrumentation and applications of double beam spectroflourimeter with a neat diagram. Explain why spectroflourimeter is more sensitive and selective than UV spectrophotometer. (16+4=20)

2. Explain the principle, instrumentation and applications of dispersive IR. (16+4=20)

Short Essays: **(6x10=60)**

3. Explain in detail with examples, how absorption maxima of conjugated dienes and unsaturated carbonyl compounds are calculated by Woodward-Fieser rules.

4. Define correlation and regression. Mention the statistical significance of student T- test, F-test and Chi-square test.

5. Explain the following terms ● Coupling constant ●Spin decoupling ● NOE

6. Enumerate the various ions formed during ionization process and its significance in the elucidation of molecular structure

7. What is two dimensional and reverse phase chromatography. Compare TLC with HPTLC.

8. Explain Bragg's law and the principle, technique and application of X-ray diffraction

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