

Roll No. 

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Total No. of Pages : 01

Total No. of Questions : 06

**M.Pharm(Pharmaceutical Chemistry) (2017 & Onwards) (Sem.-1)****MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES****Subject Code : MPC-101T****M.Code : 74663****Time : 3 Hrs.****Max. Marks : 75****INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

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|----|--|----|
| 1. | a. Write down the theory and modes of molecular vibrations in IR spectroscopy. | 5  |
|    | b. Describe the theory and the laws of UV-visible spectroscopy.                | 5  |
|    | c. Discuss the factors affecting fluorescence.                                 | 5  |
| 2. | a. Write down the applications of NMR spectroscopy.                            | 10 |
|    | b. Discuss the spin-spin coupling.   | 5  |
| 3. | Write short notes on the followings :  |    |
|    | a. Thin layer chromatography.  | 5  |
|    | b. Ultra high performance chromatography.                                      | 5  |
|    | c. Gas chromatography.   | 5  |
| 4. | a. Discuss the "Nitrogen rule" with appropriate examples.                      | 5  |
|    | b. Describes the FAB and MALDI.  | 10 |
| 5. | Discuss the following :  |    |
|    | a. Pharmaceutical applications of potentiometry.                               | 5  |
|    | b. Factors affecting results in TGA.   | 5  |
|    | c. Principle of Thermal techniques and thermal transitions.                    | 5  |
| 6. | Write briefly on the following :   |    |
|    | a. Capillary electrophoresis.  | 5  |
|    | b. Applications of X-ray diffraction.  | 5  |
|    | c. Pharmaceutical applications of DSC.   | 5  |

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**

