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**B.Pharm. (Semester – VII)(CGPA) Examination, 2018**  
**PHARMACEUTICAL ANALYSIS – V**

Day and Date : Thursday, 13-12-2018  
Time : 10.30 a.m. to 1.30 p.m.

Max. Marks : 70

1. Multiple Choice Questions : (15 ×1=15)

- 1) Pre-washing step in HPTLC is done by using
  - A) Water
  - B) Ethanol
  - C) Methanol
  - D) Benzene
- 2) \_\_\_\_\_ technique where separation of sample mixture was carried out by continuous addition of mobile phase.
  - A) Elution
  - B) Frontal analysis
  - C) Displacement analysis
  - D) None of these
- 3) \_\_\_\_\_ are not separated by gel chromatography.
  - A) Racemic mixtures
  - B) Enantiomeric mixtures
  - C) Isomers
  - D) All of these
- 4) The  $t'_R = t_R - t_M$  is an equation of
  - A) Adjusted retention time
  - B) Retention time
  - C) Adjusted retention volume
  - D) Retention volume
- 5) Derivatization procedures in HPLC are carried for
  - A) To allow chromatography of compounds
  - B) To improve resolution
  - C) To improve sensitivity of the method
  - D) All of these
- 6) \_\_\_\_\_ mechanism is involved in paper chromatography.
  - A) Adsorption
  - B) Partition
  - C) Ion exchange
  - D) Affinity
- 7) Calcium sulphate is mixed with silica gel which acts as a \_\_\_\_\_ in TLC.
  - A) Excipients
  - B) Flowing agent
  - C) Binder
  - D) Additive

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- 2) Define and classify chromatography.
  - 3) Explain in detail on steps involved in HPTLC.
  - 4) Explain with suitable diagram principle of size exclusion chromatography. Enlist its applications.
  - 5) Define the terms retention time, retention volume, isocratic elution, gradient elution and  $R_f$  value.
  - 6) What is Gas chromatography ? Give its types and limitations.
3. Answer **any three** of the following questions. **(3×10=30)**
- 1) Explain with suitable diagram instrumentation of HPLC.
  - 2) Write on any four detectors used in Gas chromatography.
  - 3) Write in detail on Ion exchange chromatography.
  - 4) What is paper chromatography ? Write on different papers used for it. Give difference between TLC and paper chromatography.
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