

V.P. AND R.P.T.P. SCIENCE COLLEGE, VALLABHVIDYANAGAR  
B.Sc. (SEMESTER-V) EXAMINATION  
INTERNAL TEST - 2016  
Thursday, 6<sup>th</sup> October  
11.00 am to 12.30 pm  
PHYSICAL CHEMISTRY: US05C CHE06



Marks-25

**Q -1. Choose and write the most appropriate option for the following. (03)**

(i) When polymorphism occurs in elements, it is known as

(a) enantiotropy      (b) monotropy      (c) allotropy      (d) none of these

(ii) Adsorbed acetic acid on activated charcoal is -----

(a) adsorbate      (b) adsorbent      (c) both a and b      (d) none

(iii) The percentage of halogenated pesticides in the environment can be determined by

(a) TCD      (b) ECD      (c) FID      (d) FPD

**Q-2. Give answers of any two questions given below. (04)**

(i) Define following terms: (a) phase, (b) component.

(ii) Differentiate: physisorption and chemisorption.

(iii) Enlist the important requirements of carrier gas in gas chromatography.

**Q-3. Draw and discuss the phase diagram in which two components form a compound with congruent melting point. (06)**

OR

**Q-3. Discuss in detail the phase diagram of water system. (06)**

**Q-4. Starting with assumption, derive Langmuir adsorption isotherm. (06)**

OR

**Q-4. Enlist applications of adsorption and discuss any five of them. (06)**

**Q-5. Enlist general requirements of detectors and discuss any two. (06)**

OR

**Q-5. (a) Enlist important requirements of solid inert support in gas chromatography. (03)**

(b) What is the value of HETP for 2 meter long column if the peak with retention time of 10 minutes and having a width of 20 seconds? (03)