Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name: Instrumental Methods of Analysis-II

Subject Code: 4SC04IMA1 **Branch: B.Sc.(Micro,Biotech)**

Semester: 4 **Date: 10/05/2016** **Time: 02:30 To 05:30** **Marks: 70**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) Define the term – anion and cation.
b) Define linear velocity.
c) What is capacity factor, k' in column chromatography?
d) Name the mobile phase used in HPLC?
e) Define the term: retention time in Gas chromatography.
f) Name various gases used in gas chromatography.
g) How much optimum voltage is needed for electrophoresis?
h) Write the equation for Kd in partition chromatography.
i) Name any three major components of electrophoresis apparatus.
j) What is the role of separating gel in electrophoresis?
k) Write full form of SDS-PAGE.
l) What is the role of ladder in thin layer chromatography?
m) Mention the Use of auto injectors in HPLC.
n) What do you mean by adsorption equilibrium?

Attempt any four questions from Q-2 to Q-8

Q-2 Discuss in detail about definition, principle, instrumentation and parts of gas chromatographs with diagram. **(14)**

Q-3 Discuss principle, classification and basic components of column chromatography. **(14)**

Q-4 **Attempt all questions** **(14)**

a) Write a note on column preparation for column chromatography. **(7)**
b) Discuss the principle and instrumentation for HPLC. **(7)**

Q-5		**Attempt all questions**	**(14)**
	a)	Discuss SDS – PAGE in detail.	**(7)**
	b)	Discuss ascending and descending types of chromatography and its application.	**(7)**
Q-6		**Attempt all questions**	**(14)**
	a)	Explain agarose gel electrophoresis of DNA.	**(7)**
	b)	Describe various types of detectors used in HPLC.	**(7)**
Q-7		**Attempt all questions**	**(14)**
	a)	Explain various application of gas chromatography.	**(5)**
	b)	Write a note on thin layer chromatography.	**(5)**
	c)	Mention the differences between HPLC & HPTLC.	**(4)**
Q-8		**Attempt all questions**	**(14)**
	a)	Discuss principle of electrophoresis in detail.	**(5)**
	b)	Discuss advantages and disadvantages of HPLC.	**(5)**
	c)	Write a note on application of partition chromatography.	**(4)**