14CHP21

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019
(Fourth Semester)

Branch - **CHEMISTRY**

ANALYTICAL CHEMISTRY

Time : Three Hours Maximum : 75 Marks

Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 15 = 75)

1 a Give the principle, instrumentation and applications of GSC. **(8)**
b Write notes on counter current chromatography. **(5)**
c Write the principle of HPLC. **(2)**

OR

d Explain the principle, instrumentation and applications of GLC. **(7)**
e Mention the applications of ion-exchangers, **(3)**
f Discuss briefly about gel permeation technique. **(5)**

2 a Explain the importance of meta stable peak. **(3)**
b Give an account of McLafferty rearrangement, **(7)**
c State and explain nitrogen rule. **(5)**

OR

d Write notes on ortho effect, **(3)**
e Describe about Retro-Diels-Alder cleavage, **(7)**
f Discuss about FAB mass spectroscopy. **(5)**

3 a Explain the principle, instrumentation and applicationsof single beam absorption spectrometer. (8)
b What are the applications of AAS? (5)
c Write the principle of atomic emission spectroscopy. (2)

OR

d Discuss the principle, instrumentation and applications of double beam absorption spectrometer. (7)
e Explain about the instrumentation and applications of AES. (5)
f Compare atomic absorption spectroscopy and atomic emission spectroscopy. (3)

4 a Discuss the principle and instrumentation of TGA. (5)
b What are the factors that affecting the thermograms? (5)
c Write notes on DSC. (5)

OR

d Give the principle of DTG and mention the factors which influencing the thermograms. (5)
e Give an account of DTA. (5)
f Write notes on thermometric titration. (5)

5 a What is called DME? And give the advantages. (5)
b List out the applications of polarography. (5)
c Briefly explain about cyclic voltametry. (5)

OR

d Write notes on (i) Residual current (ii) Diffusion current (iii) Migration current. (6)
e Discuss briefly about constant current and controlled potential method. (5)
f Write short notes on amperometric titrations. (4)