Registration No: | | | | | | | | | | |

Total Number of Pages : 01 **M.Pharm**
MPC101T

1st Semester Regular Examination 2019-20
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES
BRANCH : Chemistry
Max Marks: 75
Time : 3 Hours
Q.CODE : HR571

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any TWO from Part-C.
The figures in the right hand margin indicate marks.

Part-A

Q1 **Only Short Answer Type Questions (Answer All-10)** **(2 x 10)**

a) Differentiate between normal phase and RP-HPLC
b) What is TMS and it's applications in NMR?
c) What is finger print region and its importance?
d) What is parent and Base peak? How it helps in structural elucidation of a compound?
e) What is self and chemical quenching in Flourimetry?
f) Differentiate between Retention time and Retention volume and their uses in GC.
g) Why is nitrogen gas used in TGA analysis?
h) Why is it important to select the buffers pH for electrophoresis?
i) Define the term λmax and Bathochromic shift.
j) Why X rays are used in crystallography?

Part-B

Q2 **Only Focused-Short Answer Type Questions- (Answer Any FIVE out of SEVEN)** **(5 x 7)**

a) How multicomponent drugs are estimated by difference spectroscopic technique by UV?
b) What is vibrational coupling? Why CO_2 gives two absorption peaks in IR spectrum?
c) Differentiate between Flame emission spectroscopy and AAS. Which one is superior and why?
d) What is spin-spin coupling? How the multiplicity of signals in NMR calculated by using Pascal triangle?
e) Write down the principle involved in CIMS and FIMS.
f) Write down the separation principle of Ion-exchange chromatography.
g) How DNA sample are analysed by Gel electrophoresis?
h) What is Bragg's law? Write short note on rotating crystal technique.
i) Write down the principle of TGA. Give the TGA curve for $AgNO_3$.

Part-C

Only Long Answer Type Questions (Answer Any TWO out of FOUR)

Q3 Write down the principle of EIMS and what are the different ions produced by MS during ionization. **(10)**

Q4 What is chemical shift and how it is measured? Write down the different factors affecting the chemical shift value in NMR. **(10)**

Q5 Write down the principle, instrumentation and applications of GC. **(10)**

Q6 Explain the principle and sample preparation techniques for IR analysis. **(10)**