M.PHARM. SEM-I (CBCS-2019 COURSE) : MARCH - 2022
SUBJECT : MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES (COMMON FOR QUALITY ASSURANCE TECHNIQUES, PHARMACOLOGY, PHARMACEUTICS, PHARMACEUTICAL CHEMISTRY, PHARMACEUTICAL BIOTECHNOLOGY & PHARMACOGNOSY)

M-20708-2022
M-22409-2022
M-20709-2022
M-22410-2022

Day : Monday
Date : 21-03-2022

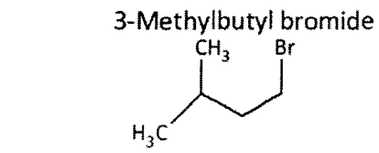
Time : 10:00 AM-TO 1:00 P.M.
Max. Marks : 75

N.B.

1) **Q.No. 1 and Q.No. 5** are **COMPULSORY**. Out of remaining questions answer **ANY TWO** from **each** section.
2) Answers to both sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate **FULL** marks.

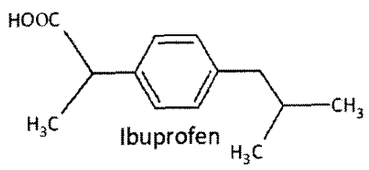
SECTION – I

Q.1 The PMR data for 3-methylbutyl bromide is given below. Assign the chemical shifts and multiplicities to all protons in the structure. **(08)**



PMR, ppm :- 3.45 (t,2H), 1.8 (m,1H), 1.42 (m, consists of a doublet and a triplet, 2H), 1.1 (d, 6H)

Q.2 Ibuprofen gave the following m/z values in EIMS analysis. Assign the fragments to the obtained m/z values. Show your work properly. **(15)**



EIMS (70 Ev) :- m/z-206, 163, 161 (100%), 119, 91

Q.3 Discuss important regions of IR spectrum with suitable examples. Discuss the effect of conjugation on absorption maxima of the compound. Discuss factors affecting fluorescence. **(15)**

Q.4 Write notes on **ANY TWO** of the following : **(15)**

a) Principle and instrumentation of flame emission spectroscopy
b) Instrumentation and applications of AAS
c) Fourier-Transform IR spectrometer

PTO

SECTION – II

Q.5 Describe principle, applications and advantages of Ion exchange chromatography. **(07)**

Q.6 Describe in details principle, instrumentation, applications and important chromatographic parameters of High Performance Thin Layer Chromatography. **(15)**

Q.7 Describe in details principle, working, types of electrodes and applications of Potentiometry. **(15)**

Q.8 Write notes on **ANY TWO** of the following : **(15)**

a) Moving boundary electrophoresis
b) TGA
c) Bioluminescence assays

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