23/11/16

Total No. of printed pages = 4

PY 132706

Roll No. of candidate | | | | | | | | | | |

2016

B. Pharm 7th Semester End-Term Examination

PHARMACEUTICAL ANALYSIS – III

Full Marks –100 Pass Marks – 35 Time – Three hours

The figures in the margin indicate full marks for the questions.

1. A. Define any *six* of the following terms : 2×6=12

(i) Chromophore with example

(ii) Molecular ion

(iii) Spin-Spin relaxation

(iv) Nitrogen rule

(v) Retention time and Retention volume

(vi) Phosphorescence

(vii) Gradient elution.

[Turn over

B. Answer any *six* of the following questions : 3×6=18

(i) What are the differences between atomic absorption spectroscopy and emission flame spectroscopy ?

(ii) What is the effect of moisture in IR spectrum of compounds ?

(iii) Why is the Reverse Phase HPLC more commonly used than Normal Phase HPLC ?

(iv) What is McLafferty rearrangement ? Give example.

(v) What is the problem of using Nujol as mulling agent in IR Spectroscopy and how this can be solved ?

(vi) Why TMS is used as a reference standard in NMR spectroscopy ?

(vii) Why methanol is a good solvent for UV but not for IR Spectroscopy ?

2. Answer any *eight* of the following questions : 5×8=40

(i) With a neat diagram, discuss laminar-flow burner.

(ii) How can the mass spectrum be used to find the molecular formula and molecular weight of the organic compound ?

(iii) Discuss the principle of flame emission spectroscopy.

(iv) Discuss the applications of IR Spectroscopy

(v) What are the fctors affecting fluorescence and phosphorescence ?

(vi) Explain with example how non-linear molecules have (3n-6) vibrational degrees of freedom whereas liner molecules have (3n-5) vibrational degrees of freedom.

(vii) Write the basic principle of HPLC. Draw a schematic diagram of HPLC instrument.

(viii) Discuss different types of columns used in Gas Liquid Chromatography.

(ix) With a neat diagram, write note on Photo-multiplier detector.

(x) Calculate the number of NMR signals for the following compunds :

(a) CH_3CH_2CHO

(b) CH_3CHBr_2

(c) CH_3OH

(d) $CH_3CHOHCH_3$

(e) CH_3COOCH_3

3. Answer any *three* of the following questions : 3×10=30

(i) Explain different electronic transition after absorption of UV or visible light. Discuss different absorption and intensity shifts in UV Spectroscopy.

(ii) Describe various molecular vibrations in IR Spectroscopic technique. Discuss solid and liquid sample handling technique in IR Spectroscopy.

(iii) Describe the theory of NMR Spectroscopy. Discuss chemical shift.

(iv) Write in detail about the principle and technique of Radio Immuno Assay.