Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.PHARM (N)/SEM-7/PT-709A/2011-12

2011

PACKAGING TECHNOLOGY

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

i) Containers meant for storage of injectables are made of

a) lime-soda glass b) type-II glass

c) neutral glass d) type-I and type-II.

ii) Hermetic container is impervious to

a) moisture b) air

c) temperature d) microbes.

iii) Aluminium-Aluminium (Alu-Alu) package is used for the storage of

a) Aerosols b) Ointments

c) Tablets d) Pastes.

iv) Polyethylene terepthalate (PET) is a condensation polymer formed by the reaction of ethylene glycol with

a) Terepthalic acid b) Sulphuric acid

c) Polyamides d) None of these.

v) Conditions for testing paper and board packaging material is

a) 23°C ± 1°C, 50% RH

b) 29°C ± 1°C, 60% RH

c) 33°C ± 1°C, 80% RH

d) 43°C ± 1°C, 40% RH.

vi) Aluminium is used as a packaging material for its ability to resist.

a) Oxidation b) Corrosion

c) Hydrolysis d) Gas permeability.

vii) Which of the following is not a basic design for closures ?

a) Screw-on b) Crimp-on

c) Press-on d) Thrash-on.

viii) PVC starts degrading at

a) 280°F b) 212°F

c) 220°F d) 180°F.

ix) USP Type-I glass is

a) treated soda-lime glass

b) regular soda-lime galss

c) NP-general purpose soda-lime glass

d) borosilicate glass.

x) Clarity and brilliance is imparted to glass containers by using

a) Lead b) Boron oxide

c) Copper d) Iron oxide.

xi) Collapsible tubes made from lead are not used for pharmaceutical packaging due to

a) Inferior metal

b) Soft in nature

c) Risk of Lead poisoning

d) Not good in appearance.

xii) A very practical method of disposing plastic containers is

a) Incineration b) Open dumping

c) Sanitary landfill d) Composing.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Differentiate between 'Tamper resistant' and 'Tamper evident' packaging.

3. What are the advantages and disadvantages of metals as packaging materials ?

4. Write a short note on packaging of suppositories.

5. Discuss roll-on type of closure.

6. What do you mean by solid waste ? Briefly explain the different types of solid waste.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. What type of drugs are packed in aerosol containers ? Give a detailed account on the packaging of Metered Dose Inhalers. 4 + 11

8. a) Give details of hydrolytic resistance test of glass containers intended for parenteral use. Also depict the QC measures on rubber closures of parenterals.

   b) Write a note on the optical properties of glass. 10 + 5

9. Write short notes on any *three* of the following : 3 ∞ 5

   a) Polyethylene terepthalate plastic packaging

   b) Polyvinyl chloride plastic packaging

   c) Acrylics in plastic packaging

   d) Nylons in plastic packaging.

10. Explain the methods of strip and blister packaging mentioning their uses, advantages and disadvantages.

11. Write short notes on the following : $2 \times 7\frac{1}{2}$

    a) Drug-plastic interactions

    b) Impact extended conainers.