# PACKAGING TECHNOLOGY ( SEMESTER - 6 )

## CS/B.Pharm/SEM-6/PT-610B/09

1. ..... *Signature of Invigilator*

2. ..... *Signature of the Officer-in-Charge*

***Reg. No.*** | | | | | | | | | | | | | | |

***Roll No. of the Candidate*** | | | | | | | | | | | | | | |

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**CS/B.Pharm/SEM-6/PT-610B/09**

**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009**

**PACKAGING TECHNOLOGY ( SEMESTER - 6 )**

Time : 3 Hours ] [ Full Marks : 70

***INSTRUCTIONS TO THE CANDIDATES :***

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

**No additional sheets are to be used and no loose paper will be provided**

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**FOR OFFICE USE / EVALUATION ONLY**

Marks Obtained

| | Group – A | | | | | | | | | | Group – B | | | Group – C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Question Number*** | | | | | | | | | | | | | | | | | ***Total Marks*** | ***Examiner's Signature*** |
| ***Marks Obtained*** | | | | | | | | | | | | | | | | | | |

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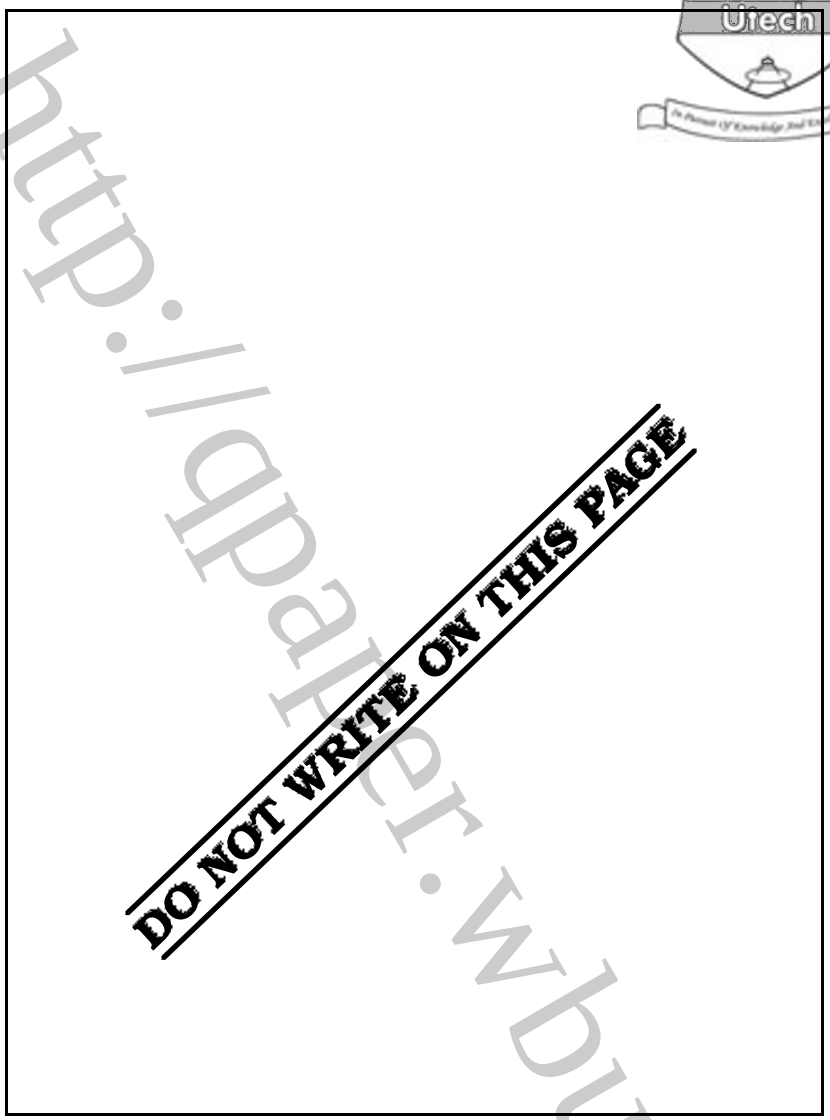
**Head-Examiner/Co-Ordinator/Scrutineer**

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# PACKAGING TECHNOLOGY

## SEMESTER - 6

Time : 3 Hours ] [ Full Marks : 70

### GROUP – A

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following : 10 ∞ 1 = 10

i) All of the following are the plastic resins *except*

a) Polyethylene b) Polyvinyl chloride

c) Sodalime d) Polystyrene. ☐

ii) Amber colour in glass is produced by using

a) Calcium oxide b) Iron oxide

c) Zinc oxide d) Alumina. ☐

iii) Which of the following metal containers is not suitable for packaging of dry cosmetics ?

a) Shallow drawn containers

b) Deep drawn containers

c) Formed aluminium foil containers

d) Impact extruded containers. ☐



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iv) Which of the following is hydrophilic plastic ?

a) High density polyethylene b) Polypropylene

c) Nylon d) Polyvinyl chloride. ☐

v) Which one is the cheapest metal used for packaging ?

a) Tin b) Aluminium

c) Lead d) Linings. ☐

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

a) Aerosols b) Ointments

c) Tablets d) Pastes. ☐

vii) Heat-sealing characteristics can be imparted to cellophane film by using

a) PVC b) PVDC

c) HDPE d) LDPE. ☐

viii) Water attack test of glass containers can be done by measuring

a) amount of alkali released in water

b) amount of acid released in water

c) silicate levels

d) turbidity. ☐

ix) Terne plate is mild steel with an alloy coating of

a) 10% tin and 90% lead b) 20% tin and 80% lead

c) 50% tin and 50% lead d) 90% tin and 10% lead. ☐



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x) The USP specifications for light resistant containers require the glass to provide protection against light of wavelength

a) 2400 to 3500 Å b) 2800 to 4500 Å

c) 2900 to 4500 Å d) 3500 to 4900 Å. ☐

xi) 'Push through' and 'peelable' type liddings are related to

a) blister package b) strip package

c) end folded wrapper d) sealed tubes. ☐

xii) Nylon consists of

a) a dibasic acid & a monoamine

b) a monobasic acid & a diamine

c) a dibasic acid & a diamine

d) a monobasic acid & a monoamine. ☐

## GROUP – B

### ( Short Answer Type Questions )

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

2. Write a short note on composition of glass.

3. Why are plastics considered as important packaging materials for pharmaceuticals ?

4. Discuss briefly on packaging of TDDS.

5. Differentiate between 'Tamper Resistant' & 'Tamper Evident' packagings.

6. Write down a note on 'closures for parenteral & ophthalmic preparation'.



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## GROUP – C

**( Long Answer Type Questions )**

Answer any *three* of the following. $3 \infty 15 = 45$

7. What are the advantages of plastic container over glass container ? Which polymers are used as materials of plastic containers ? Describe about the physicochemical characteristics and advantages of polyethylene, nylon and polypropylene. 2 + 1 + 12

8. Write in detail about the containers used for packaging of aerosols. 15

9. Write a brief explanatory note on Drug-Plastic interactions with appropriate examples. 15

10. a) What are the different types of glasses used for pharmaceutical purposes ?

    b) Write a note on type I and type II glasses.

    c) How are glass containers manufactured ?

    d) Write a short note on coloured glass and light protection. 2 + 6 + 4 + 3

11. a) What do you mean by the term 'solid waste' ?

    b) Briefly explain about the different types of solid wastes.

    c) How are plastic containers disposed safely ?

    d) Write notes on sanitary landfill and incineration. 2 + 3 + 2 + 8

12. a) Why are metals used as packaging material ? What are their drawbacks ?

    b) Which metals are considered as modern packaging metals ?

    c) Write notes on any *two* of the following :

        i) Shallow drawn containers

        ii) Formed aluminium foil containers

        iii) Deep drawn containers. $5 + 1 + ( 2 \infty 4\frac{1}{2} )$

END



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