



Name : .....  
Roll No. : .....  
Invigilator's Signature : .....

**CS / B. PHARM (N) / SEM-6 / PT-606/ 2011**

**2011**

**PHARMACEUTICS  
( PHARMACEUTICAL 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 :

$10 \times 1 = 10$

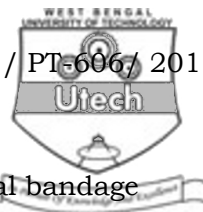
- i) Lecithin, which is used as common additive in parenteral formulations, acts as
  - a) Anti-oxidant                      b) Emulsifier
  - c) Tonicity modifier              d) Stabilizer.
- ii) HEPA filters are installed in parenteral production area
  - a) for Laminar air-flow
  - b) to prevent cross-contamination
  - c) to limit the amount of particulate matter in the area
  - d) all of these.

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- iii) Coacervation phase separation is a technique for manufacturing
- a) Transdermal therapeutic system
  - b) Liposomes
  - c) Osmotic tablets
  - d) Microcapsules.
- iv) Amber colour in glass is produced by using
- a) Calcium oxide                      b) Iron oxide
  - c) Zinc oxide                              d) Alumina.
- v) Water for injection differs from sterile distilled water as it is free from
- a) particulate matter              b) carbon dioxide
  - c) preservatives                      d) pyrogens.
- vi) Determine the % of NaCl required to make 1% w/v solution of procaine HCl iso-osmotic with blood plasma (provided NaCl equivalent of 1% procaine HCl=0.21)
- a) 0.69                                      b) 0.59
  - c) 0.169                                      d) 0.259.
- vii) In diffusion controlled transdermal drug delivery system
- a) drug is homogeneously dispersed in polymer and then moulded into a patch
  - b) drug is directly dispersed in polymer patch
  - c) drug reservoir is encapsulated in rate controlling polymer patch
  - d) none of these.



- viii) Elastomer is a component of
- a) Surgical gauge
  - b) Surgical bandage
  - c) Protective
  - d) Rubber adhesive.
- ix) Liposomes are
- a) uni- or multi-layered vesicles of phospholipids
  - b) enzymes
  - c) fibrinopeptides
  - d) red blood cells.
- x) Type III glass is
- a) borosilicate glass
  - b) treated sodalime glass
  - c) sodalime glass
  - d) general purpose sodalime glass
- xi) Which of the following forms have predictably highest solubility ?
- a) Stable polymorph
  - b) Metastable polymorph
  - c) Amorphous form
  - d) Pseudopolymorph.
- xii) Paratonic solution means
- a) Hypotonic solution
  - b) Hypertonic solution
  - c) both (a) and (b)
  - d) none of these.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. Differentiate between 'WFI' and 'SWFI'.
3. What is isotonicity ? Discuss the method of adjusting isotonicity of parenterals.
4. What is the difference between liposomes and niosomes ?  
What are the advantages of liposomes ?

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5. Write briefly on adhesive tapes used in secondary wound dressing.
6. Write short notes on any two of the following :  $2 \times 2\frac{1}{2}$ 
  - a) Coarse filter
  - b) High efficiency filter
  - c) Absolute filter.

### GROUP – C

#### ( Long Answer Type Questions )

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

7. Write down the uses of tin, aluminium and lead as packaging material. Explain drug-plastic interaction. What is meant by tamper resistant packaging ?  $8 + 4 + 3$
8. Define and classify Novel drug delivery systems with examples. What are the economic reasons for developing NDDS ? Mention their advantages and limitations. Explain briefly the various implantable delivery systems with specific examples.  $( 1 + 2 ) + 2 + 3 + 7$
9. What is preformulation and what are its goals ? Discuss the role of polymorphism in formulation development.  $5 + 10$
10. Define microencapsulation. Write notes on the method of preparation of microcapsules. How do you evaluate microcapsules ?  $2 + 8 + 5$
11. Write short notes on the following :  $2 \times 7\frac{1}{2}$ 
  - a) The U.S.P. tests for evaluation of glass containers
  - b) Essential pre-requisites of drugs to be selected for controlled release formulations.

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