



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Pharm/SEM-2/MPT-208(2)/2013**

**2013**

**MOLECULAR PHARMACOLOGY**

Time Allotted : 3 Hours

Full Marks : 70

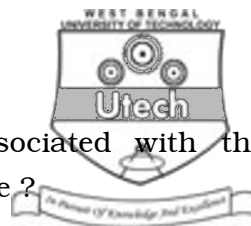
*The figures in the margin indicate full marks.*

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

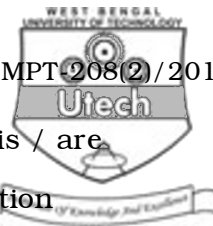
**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following :  
10 × 1 = 10
  - i) A shift of a dose response curve to the right without change in maxima signifies
    - a) Non-competitive antagonism
    - b) Competitive agonism
    - c) Non-competitive agonism
    - d) Competitive antagonism.
  - ii) Which one of the following is known as the 'guardian of the genome' ?
    - a) Cyclins
    - b) Cdks
    - c) p53
    - d) Cytochrome P450.
  - iii) "Cold Antigen" is associated with which one of the following ?
    - a) Western Blotting
    - b) Immunostaining
    - c) RT PCR
    - d) RIA.



- iv) Which one of the following is associated with the pathophysiology of Alzheimer's disease ?
- a) Neuronal plasticity
  - b) Ventromedial Nucleus
  - c) Falx cerebri
  - d) None of these.
- v) Rotenone is a herbicide, that precipitates
- a) Parkinson's disease      b) Alzheimer's disease
  - c) Myesthenia gravis      d) none of these.
- vi) Which family of proteins serve as check points in apoptotic cell death ?
- a) JAK-2      b) Cytokines
  - c) Bcl-2      d) None of these.
- vii) Immunosuppressant action of Cyclosporine is due to
- a) Activation of natural killer (NK) cells
  - b) Increased catabolism of IgG antibodies
  - c) Inhibition of the gene transcription of interleukins
  - d) Interference with antigen recognition.
- viii) BRCA1 and BRCA2 genes are responsible for which of the following cancer ?
- a) Breast      b) Colon
  - c) Prostate      d) Lungs.



- ix) The method for artificial transformation is / are
- a) Microinjection                      b) Lipofection  
c) Electroporation                      d) all of these.
- x) Which is the most common pathogenic LRRK2 mutation that causes idiopathic PD ?
- a) S130P                                      b) A54T  
c) G2019S                                  d) None of these.
- xi)  $G_i$  coupled receptor signaling involves
- a) C-AMP                                    b) PKC  
c)  $IP_3$  and DAG                      d) PKG.
- xii) MPTP neurotoxicity can be blocked by
- a) selegiline                                b) donezepil  
c) rotenone                                 d) none of these.

**GROUP – B**

**( Short Answer Type Questions )**

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

2. Write a note on HLA in Myesthania Gravis.
3. Write a note on the influence of serotonin on human behaviour ?
4. What are spare receptors ? How do thy help in pharmacological evaluation of drug ?                      2 + 3
5. Expand ELISA. Write a short note on direct ELISA.
6. Write briefly on the probable aetiology of cancer with the different steps of development.



**GROUP – C**

**( Long Answer Type Questions )**

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

7. What is *r*-DNA Technology ? Discuss in detail the procedure for Insulin production by *r*-DNA Technology. Write the application of *r*-DNA Technology.
8. What are the principal genes involved in Parkinson's diseases ? Write briefly about genomic structure and functional domain of LRRK2 gene.  $3 + 12$
9. Why is p53 called as guardian of the genome ? Write in brief about the induction of p53 response. What are the tangles? Write in detail about two genes responsible for pathogenesis of Alzheimer's disease.  $2 + 4 + 2 + 7$
10. What is meant by confluence in cell culture and how does it differ from senescence ? What are the different steps involved in cell culture ? Write in brief about the preservation of cell culture.  $2 + 10 + 3$
11. Write in detail about the following in context of Alzheimer's pathology :
  - a) App gene
  - b) PS-1 gene
  - c) PS-2 gene
  - d) APOE4,  $4 + 3 \frac{1}{2} + 3 \frac{1}{2} + 4$

