



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Sc. (H)/BT/SEM-6/MBT-603/2012**

**2012**

**MEDICAL BIO-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 × 1 = 10

i) When cancer cells gain the ability to move independently and invade other tissues, they are said to have

- |                |                 |
|----------------|-----------------|
| a) evolved     | b) metastasized |
| c) metamorphed | d) mobilized.   |

ii) Which of the following is the usual treatment of hemophilia A ?

- a) Blood transfusion
- b) Liver transplant
- c) Bone marrow transplant
- d) Infusion of factor VIII as needed.



- iii) Which of the following is *not* true regarding adeno-associated virus ?
- a) It contains double-stranded DNA
  - b) It may integrate into the host chromosome
  - c) It may exist in the cell as an episome
  - d) It may be associated with insertional mutagenesis when used as a gene therapy vector.
- iv) Which of the following vectors targets both dividing and non-dividing cells ?
- a) Retrovirus
  - b) Adenovirus
  - c) Adeno-associated virus
  - d) Herpes virus.
- v) Which vector used in gene therapy has proved useful in the treatment of sickle cell disease ?
- a) Retrovirus
  - b) Adenovirus
  - c) Adeno-associated virus
  - d) Herpes virus.
- vi) The first Biotech company formed in 1976 is
- a) Monsanto
  - b) Genetech
  - c) Invivo-Gen
  - d) Sigma.
- vii) Humulin is made from
- a) Plasmid
  - b) Bacteria
  - c) Virus
  - d) Yeast.

- GROUP – B**

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

- 6707



4. Write short notes on any *two* of the following.

- a) Liposome
- b) Miscelles
- c) Nano particle.

5. What is *ex-vivo* gene therapy ?

6. Define pharmacogenomics and its application.

### GROUP – C

#### ( Long Answer Type Questions )

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

- 7. What are the therapeutic strategies against HIV ? What are *ex-vivo* and *in-vivo* approaches in gene therapy ? Discuss the triple helix approach.  $6 + 4 + 5$
- 8. How are the subunit vaccines produced ? Explain their application with example. What is cholera ? Discuss the therapeutic approach against cholera. Discuss the ethical aspects of gene therapy.  $3 + 3 + 2 + 4 + 3$
- 9. What is tissue engineering ? What are the biomaterials used in tissue engineering ? Describe the clinical applications.  $5 + 5 + 5$
- 10. What is SCID ? What are the causes of SCID ? What precisely had been done to patient Ashanti De Silva in 1990 by Dr. W. F. Anderson's group ( NIH ) in USA ?
- 11. What is Xenotransplantation ? What is Chimera ? What animals are used ? How is the process of Xenotransplantation done ?  $3 + 3 + 9$

=====