	<u>Utech</u>
Name :	
Roll No.:	To Date of Knowledge 2nd Excited
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: $10 \times 1 = 10$
 - 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.

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- 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) Invito-Gen
- d) Sigma.
- vii) Humulin is made from
 - a) Plasmid
- b) Bacteria

c) Virus

d) Yeast.

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- Pathogens that afflict humans from non-human animal transplant source is known as
 - a) Zoonotics b) Xenogeneices
 - Xenovirals d) Other. c)

1988

1995

a)

c)

- In which year US researchers identified HIV, the virus x) causing AIDS?
 - a) 1978 b) 1984
 - 1988 d) c) 1990.
- What is the cause of Biotech Death of Jesse Gelsinger? xi)
 - Organ failure b) Viral overdose a)
 - c) Misdiagnosis d) Unknown.
- In which year FDA placed a temporary halt on all gene therapy trials using retroviral vectors in blood stem cells?
 - 1998 b) 2003 a)
 - c) 2005 d) 2007.

GROUP - B

(Short Answer Type Questions)

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

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- 2. Write down the difference between Somatic and Germline gene therapy.
- 3. Discuss about the protein delivery system.

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- 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

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