



Name :

Roll No. :

Invigilator's Signature :

CS/B.Sc. (H), BT/SEM-6/BTL-604/2011

2011

BIOTECHNOLOGY – SOCIAL, LEGAL & ETHICAL ISSUES

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) The controversy regarding the use of Bt corn is that it
 - a) is potentially harmful to monarch butterflies
 - b) is a potential allergen to humans
 - c) can contaminate groundwater
 - d) all of these
 - e) both (a) and (b).

- ii) Molecular farming is the growing and harvesting of genetically engineered crops that produce
 - a) biofuel
 - b) synthetic fibres
 - c) pharmaceuticals
 - d) all of these.

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- iii) One of the earliest results of the Green Revolution was the establishment of research stations in Central America.
- a) True
 - b) False.
- iv) TRIPs agreement forms a part of the
- a) Indian Patent Act, 1970
 - b) Utility Patent Act, 1980
 - c) Uruguay round to GATT
 - d) All of these.
- v) In India ethical guidelines for biomedical research in human was supplemented by
- a) Medical Council of India
 - b) Department of Biotechnology
 - c) University of Delhi
 - d) None of these.
- vi) Ethical aspects of stem cells and regenerative medicine has been presented at
- a) Tokyo
 - b) Kyoto
 - c) Washington
 - d) New York.
- vii) A copyright is valid for
- a) 25 years
 - b) 39 years
 - c) 50 years
 - d) 75 years.



viii) Which of the following principles is applicable to trademarks ?

- a) A trademark should not be deceptive
- b) A trademark should not cause confusion with previous trade marks
- c) A trade mark should be distinctive
- d) A trade mark should be capable of distinguishing goods or services.

ix) Gene therapy can be used to correct which one of the following ?

- a) Defective ADA
- b) Lack of B-Lymphocytes
- c) Defective immunoglobuline
- d) Lach of T-Lymphocytes.

x) DNA fingerprinting using microsatellites, uses which of the following techniques ?

- a) RFLP
- b) PCR
- c) Both (a) and (b)
- d) None of these.

xi) Name of the first cloned cow is

- a) Tracy
- b) Brandy
- c) Ginic
- d) None of these.



GROUP – B

(Short Answer Type Questions)

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

2. Discuss the merits and demerits of IPR.
3. Discuss the legal issues of using molecular technologies in biotechnology.
4. Write down the broad issues of WTOs TRIPs agreement.
5. Discuss the protection of biological invention with special reference to patenting of DNA sequences.

GROUP – C

(Long Answer Type Questions)

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

6. What is *in vitro* fertilization (IVF) ? Discuss the IVF method practised in human. What is PGD ? $2 + 3 + 10$
7. What do you mean by 'Genetic testing' ? Discuss the applications of genetic testings. Discuss in brief, the public opinions against molecular technologies. $2 + 5 + 8$
8. What do you mean by xenotransplantation ? Why pig may be better choice of donor for xenotransplantation in human ? What are the barriers for xenotransplantations ? Discuss how human recipient's blood could be made free of xenoantibodies for the purpose of xenotransplantation. $1 + 2 + 4 + 8$
9. What is Hybrid plant ? What is the basic difference between Hybrid & cybrid ? Write down the application of hybrid plant. Draw an opinion against the cultivation of GM crops using modern techniques. $2 + 4 + 5 + 4$