



- iv) Which of the following biopharmaceuticals was produced in its milk by the transgenic sheep 'Tracy' ?
- a) Lysozyme b) Alpha-1-antitrypsin
c) Lactoferin d) None of these.
- v) Ovulation can be prevented by
- a) FSH b) PMSH
c) eCG d) Progesterone.
- vi) Dairy milk quality can be improved by transgenic overexpression of
- a) kappa-casein b) Beta-casein
c) both (a) and (b) d) none of these.
- vii) Transgenic pig containing phytase gene can reduce the environmental pollution from
- a) cadmium b) phosphorus
c) arsenic d) none of these.

GROUP – B

(Short Answer Type Questions)

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

2. Discuss the importance of transgenic technologies in animal agriculture.
3. What is a transgenic clone ? Give an example with explanations. 1 + 4
4. Discuss the cryopreservation methods of embryos.



5. Discuss the methods of in vitro sperm and oocyte maturation for in vitro fertilization.
6. Discuss briefly how transgenic zebra fish can act as a disease model.

GROUP – C

(Long Answer Type Questions)

Answer any *one* of the following. $1 \times 15 = 15$

7. Discuss the method of retrovirus mediated gene transfer.
Discuss the production of biopharmaceuticals like Human lactoferrin, alpha-1 antitrypsin, in transgenic animal systems.
 $9 + 3 + 3$
8. What is an animal clone ? Describe how the first animal clone was created explaining its molecular mechanisms.
Discuss the applications of animal cloning in stem cell research and restoration of extinct and endangered animal species.
 $1 + 9 + 5$

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