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Invigilator's Signature :	

CS/M.SC(GENETICS)/SEM-3/MSGEN(ABT)-305A/2011-12 2011

GENETIC ENGINEERING IN ANIMALS

Time Allotted : 1½ Hours Full Marks: 35

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. C	hoose the	correct	alternatives	for any	five o	of the	following	
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 $5 \times 1 = 5$

					0 / 1
i)	Hun	nan lactoferin is a r	nultii	functional	glycoprotein
	havi	ng molecular weight of			
	a)	10kDa	b)	20kDa	
	c)	40kDa	d)	80kDa.	
ii)	Spid	er silk fibres have been	first	produced i	n the milk o
	tran	sgenic			
	a)	cow	b)	pig	
	c)	goat	d)	mice.	
iii)	Non	glycosylated, transgenio	e mie	e milk-der	ived vaccine

MSP142 confers resistance against a) Malaria

b) Filaria

Small pox

d) none of these.

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CS/M.SC(GENETICS)/SEM-3/MSGEN(ABT)-305A/2011 Which of the following biopharmaceuticals iv) produced in its milk by the transgenic sheep 'Tracy'? a) Lysozyme b) Alpha-1-antitrypsin Lactoferin None of these. c) d) Ovulation can be prevented by v) a) FSH b) **PMSH** eCGProgesterone. c) d) Dairy milk quality can be improved by transgenic vi) overexpression of a) kappa-casein b) Beta-casein both (a) and (b) d) none of these. c) Transgenic pig containing phytase gene can reduce the vii) environmental pollution from cadmium a) b) phosphorus arsenic d) none of these. c)

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 embroys.

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- 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 lactoferin, 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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