GENETIC ENGIN	IEERING:			Genetically Modified organisms Cloning
DEFINE THE FOLLOWING		CTEDS INIVOLVED IN DRO	NOLICING RECOMPINIANT DNA	Stem cell research STEM CELL RESEARCH
DEFINE THE FOLLOWING TERMS:		STEPS INVOLVED IN PRODUCING RECOMBINANT DNA Genetically engineered		Sources:
Biotechnology:		Human cell	bacterium	
Cloning:				Uses of STEM CELLS:
Stem cells:			Fermentation tank	Explain why some people prefer the use of
Describe the steps involved in producing recombinant DNA.				umbilical cords as a source of stem cells rather than the use of human embryos.
•		[34 O)	Human insulin	OR
•		Bacterium		
•		STEPS INVOLVED IN A CERTAIN GENETIC ENGINEERING PROCESS Cell from muscle tissue of a male champion horse (stallion) Nucleus removed		c. Explain why the nucleus of a muscle cell was used and not the nucleus of a sperm cell.
Advantages of GENETIC ENGINEERING	Disadvantages of GENETIC ENGINEERING	B 11	Nucleus placed owum of mare. A electrical shock results in the 'ovum' starting t	An d. Explain why the nucleus of the ovum was removed.
		Ovum from female horse (mare) Nucleus of oremoved an	(-)	e. State THREE benefits of cloning.
Explain why bacteria are most suitable for genetic engineering.		Offspring Embryo develops normally	Embryo placed in uterus of adult female horse	f. Explain why the 'ovum' labelled C cannot be considered a gamete.
OR		a. Name the: Genetic engineering process	shown in the diagram above	g. Explain why some people might be against genetic engineering.
		Process that produced ovum	В	