Biology- 7

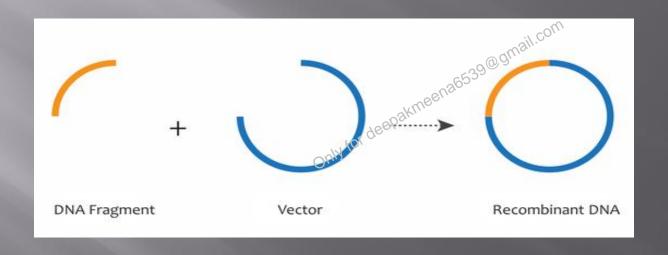
Consider the following statements:

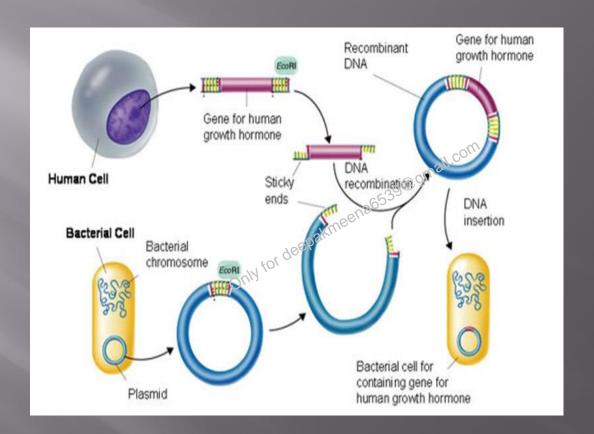
- 1) Adenoviruses have single-stranded DNA genomes whereas retroviruses have double-stranded DNA genomes.
- 2) Common cold is sometimes caused by a riadenovirus whereas AIDS is caused by a retrovirus.

Which of the statements given above is/are correct?

- a) 1 Only
- b) 2 Only
 - c) Both 1 and 2
 - d) Neither 1 nor 2

Recombinant DNA technology





Recombinant DNA technology (Genetic Engineering) allows genes to be transferred

- 1. across different species of plants
- 2. from animals to plants
- 3. from microorganisms to higher organisms Select the correct answer using the codes given below.

 (a) 1 only

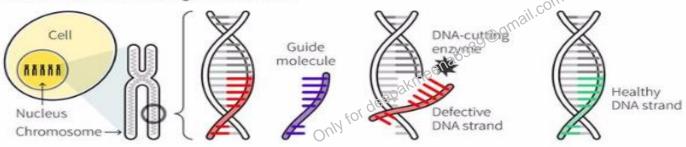
 (b) 2 and 3 only

 Only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's "find and replace" function.

HOW THE TECHNIQUE WORKS



A cell is transfected with an enzyme complex containing:

Guide molecule
Healthy DNA copy

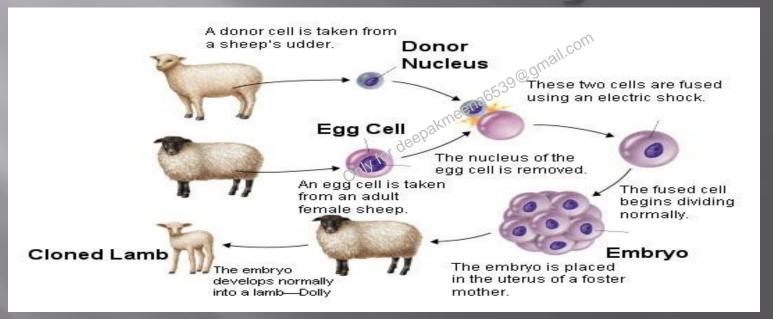
DNA-cutting enzyme

A specially designed synthetic guide molecule finds the target DNA strand. An enzyme cuts off the target DNA strand. The defective DNA strand is replaced with a healthy copy.

Sources: Reuters; Nature; Massachusetts Institute of Technology

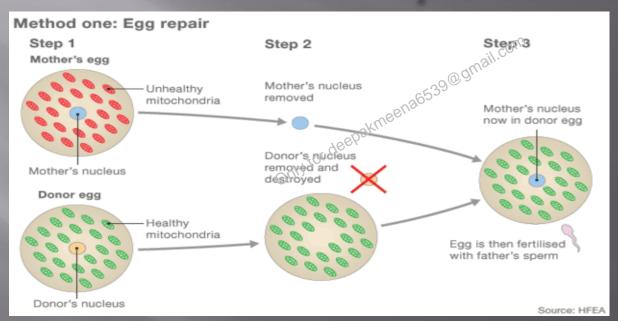


Animal Cloning

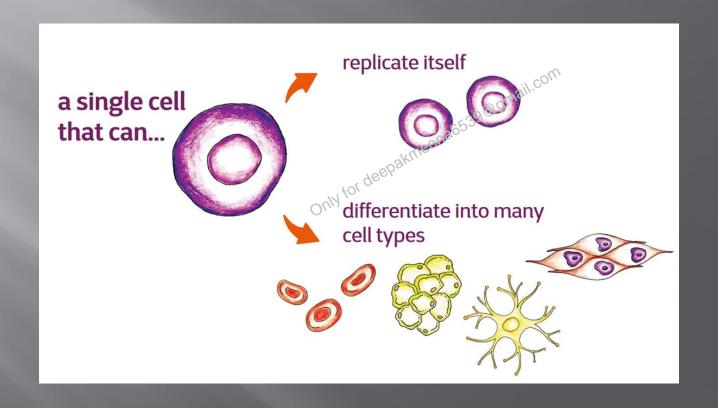


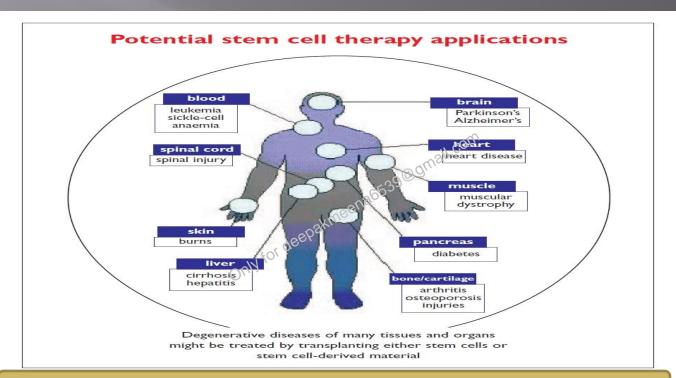
Three Parents baby

Mitochondrial Replacement



Stem Cells





REGENRATIVE MEDICINE

With reference to 'stem cells', frequently in the news, which of the following statements is/are correct?

- 1. Stem cells can be derived from mammals only.
- 2. Stem cells can be used for screening new drugs.
- 3. Stem cells can be used for medical therapies.

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- $\frac{\text{(b)}}{2}$ and 3 only
- (c) 3 only
- (d) 1, 2 and 3

