

Important points:-

- ✓ Insulin is an important hormone that is made up of two short polypeptide chains in which one is named as A and the other is B. These two chains are attached by disulphide bridges. C peptide is an extra stretch that is not present in the mature insulin.
- ✓ The correct option is (d) because in Bt cotton the specific Bt toxin gene was isolated from *Bacillus thuringiensis*. The first clinical gene therapy was given in 1990 to a 4-year old girl with adenosine deaminase {ADA} deficiency. RNAi (RNA interference) takes place in all eukaryotic organisms as a method of cellular defense. PCR is now routinely used to detect HIV in suspected AIDS patients.
- ✓ In recombinant DNA technology bacteria are able to produce human insulin, used to treat diabetes because genetic code is nearly universal.
- ✓ Mammalian hormones were among the first products prepared in bacteria by r-DNA technology. Human insulin and human growth hormone are earliest examples.
- ✓ Adenovirus is non-enveloped dsDNA virus which cause respiratory diseases. Specific modifications on fibre proteins are used to target adenovirus to certain cell types, a major effort is made to limit hepatotoxicity and prevent multiple organ failure.
- ✓ Monoclonal antibodies are formed by Hybridoma technology. They are formed by fusion of myeloma cells (antigen) and B-cells.
- ✓ Gram positive bacteria have a thick peptidoglycan layer and no outer lipid membrane whilst Gram negative bacteria have a thin peptidoglycan layer and have an outer lipid membrane.