

NEET BIOTECHNOLOGY AND ITS APPLICATIONS — BIOTECHNOLOGICAL APPLICATIONS IN MEDICINE (GENETICALLY ENGINEERED INSULIN) — PYQS

Max. Marks: 44

Questions: 11

Section A (MCQ) — 11 questions

Q.1 Which of the following genetically engineered organisms was used by Eli Lilly to prepare human insulin? [NEET (UG) 2025]

- (1) Virus (2) Phage
(3) Bacterium (4) Yeast

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Q.2 Why can't insulin be given orally to diabetic patients? [NEET (UG) 2025]

- (1) Because of structural variation
(2) Its bioavailability will be increased
(3) Human body will elicit strong immune response
(4) It will be digested in Gastro-Intestinal (GI) tract

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Q.3 Match List-I with List-II : [RE-NEET (UG) 2024]

List-I		List-II	
A.	Genetically engineered Human Insulin	I.	Gene therapy
B.	GM Cotton	II.	<i>E. coli</i>
C.	ADA Deficiency	III.	Antigen-antibody interaction
D.	ELISA	IV.	<i>Bacillus thuringiensis</i>

- (1) A-III, B-II, C-IV, D-I (2) A-II, B-I, C-IV, D-III
(3) A-IV, B-III, C-I, D-II (4) A-II, B-IV, C-I, D-III

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Q.4 Statements related to human Insulin are given below.

Which statements is/are correct about genetically engineered Insulin?

- A. Pro-hormone insulin contains extra stretch of C-peptide
B. A-peptide and B-peptide chains of insulin were produced separately in *E. coli*, extracted and combined by creating disulphide bond between

them.

- C. Insulin used for treating Diabetes was extracted from cattle and pigs.
D. Pro-hormone Insulin needs to be processed for converting into a mature and functional hormone.
E. Some patients develop allergic reactions to the foreign insulin.

Choose the most appropriate answer from the options given below : [NEET (UG) 2022]

- (1) A, B and D only (2) B only
(3) C and D only (4) C, D and E only

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Q.5 With regard to insulin choose correct options.

- A. C-peptide is not present in mature insulin.
B. The insulin produced by rDNA technology has C-peptide.
C. The pro-insulin has C-peptide
D. A-peptide and B-peptide of insulin are interconnected by disulphide bridges.

Choose the correct answer from the options given below. [NEET (UG) 2021]

- (1) A and D only (2) B and D only
(3) B and C only (4) A, C and D only

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Q.6 Which of the following statements is not correct? [NEET (UG) 2020]

- (1) In man insulin is synthesised as a proinsulin
(2) The proinsulin has an extra peptide called C-peptide.
(3) Genetically engineered insulin is produced in *E. coli*.
(4) The functional insulin has A and B chains linked together by hydrogen bonds.

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Q.7 The two polypeptides of human insulin are linked together by [NEET 2016 (Phase 1)]

- (1) Hydrogen bonds (2) Covalent bond
(3) Disulphide bridges (4) Phosphodiester bond

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Q.8 The first human hormone produced by recombinant DNA technology is : [AIPMT 2014]

- (1) Estrogen (2) Insulin
(3) Thyroxin (4) Progesterone

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Q.9 Which one of the following is now being commercially produced by biotechnological procedures? [AIPMT 2010 (Mains)]

- (1) Insulin (2) Morphine
(3) Nicotine (4) Quinine

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Q.10 Human insulin is being commercially produced from a transgenic species of: [AIPMT 2008]

- (1) *Escherichia* (2) *Mycobacterium*
(3) *Rhizobium* (4) *Saccharomyces*

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Q.11 Maximum application of animal cell culture technology today is in the production of :- [AIPMT 2003]

- (1) Interferons (2) Vaccines
(3) Edible proteins (4) Insulin

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	3	4	4	2	4	4	3	2	1	1	2