**MASTERS PU COLLEGE, HASSAN**

**BIOLOGY PRACTICE QUESTIONS**

**TOPIC: Biotechnology Applications**

1. **Hybridoma technology is used to synthesize**

a) Antibiotics b) Monoclonal antibodies c) Vaccines d) Proteins

1. **Maturation of genetically engineered pro-insulin into insulin takes place after**

a) Joining of c-peptide b) Removal of c-peptide

c) Removal of disulphide bridges d) Addition of disulphide bridges

1. **α- 1 anti trypsin is:**

a. An antacid b. An enzyme

c. Used to treat arthritis d. Used to treat emphysema

1. **RNA interference which is employed in making tobacco resistant to *Meloidogyne incognitia* is essentially involved in**

a. Preventing the process of translation of mRNA b. preventing the process of transcription

c. Preventing the process of replication of DNA d. preventing the process of splicing of hnRNA

1. **What is an antisense technology?**
2. A cell displaying a foreign antigen used for synthesis of antigens
3. Productions of somalclonal variants in tissue cultures
4. When a piece of RNA that is complementary in sequence is used to stop expression of a specific gene
5. RNA polymerase producing DNA
6. **Flavr-savr tomato has increased**
7. Productivity b. Vigour c. Shelf-life d. Flowering period
8. **Transposons are**
9. Mobile DNA b. Jumping genes c. Junk DNA d. All of theses
10. **CryI endotoxins obtained from Bacillus thuringiensis are effective against**
11. Mosquitoes b. Nematodes c. Bollworms d. Flies
12. **Which one is not used for early molecular diagnosis?**
13. Polymerase chain reaction
14. Polyacrylamide gel electrophoresis
15. Recombinant DNA technology
16. Enzyme linked immunosorbent assay
17. **protoxin is:**

a. A primitive toxin b. A denatured toxin

c. Toxin produced by protozoa d. Inactive toxin .

1. **Three critical research areas of biotechnolgy are:**
2. **Providing the best catalyst in the form of improved organism usually a microbe or pure enzyme.**
3. **Multiple ovulation transfer technology (MOET)**
4. **Creating optimal conditions through engineering fior a catalyst to act**
5. **Downstream processing technologies**
6. i, ii, iii, iv b. i, ii, iv c. i and ii d. ii and iv
7. **Bt toxin is harmful to insects like:**
8. Lepidpterans
9. Coleopterans
10. Dipterans
11. All are correct
12. **Bt toxin is not toxic to human beings as**
13. Bt formation from Pro-state requires pH lower than one present in human stomach
14. The toxin recognizes only insect specific targets
15. Bt toxin activation requires temperature above human body temperature.
16. Conversion of protoxin to toxin takes place only in high alkaline conditions**.**
17. **ELISA**
18. Uses complement mediated cell lysis
19. Used radiolabelled second antibody
20. Involves addition of substarte which is converted tito coloure end product
21. Requires RBCs
22. **SCID is caused by defective gene coding for enzyme**
23. Adenosine deaminase
24. Guanosine deaminase
25. Gunosine transferase
26. Adenosine transaminase
27. **A new variety of rice was patented by a foreign company though such varities have been present in India for a long time. This is related to**
28. Co-667 b. Sharbati sonara c. Lerma roj d. Basmati
29. **How many recombinant therapeutics are being markrted currently in India?**
30. 30 b. 20 c. 12 d.8
31. **The first company to synthesize and market recombinnat Humulin in 1983 was**
32. Sun pharma b. Torrent c. Eli lilly d. Abbot laboratories.
33. **GMO technology is useful for**
34. Enhancing nutritional value
35. Helping to reduce post-harvest losses
36. Making crop more tolerant to abiotic stresses
37. All of the above
38. **The “Golden rice”, aimed at curing**

a. vitamin b deficiency b. vitamin a deficiency

c. vitamin k deficiency d. zinc deficiency

1. **The plasmid generally used for the production of recombinant insulin is**
2. RK 646 b. Ti plasmid c. ACY 17 d. pUC 18
3. **Insulin has 51 amino acids arranged in**

a. single polypeptide

b. two polypeptides of 21 and 30 amino acids

c. two polypeptides of 25 and 26 amino acids

d. three polypeptides of 15, 16 and 20 amino acids

1. **The site of production of ADA in the body is**

a. Bone marrow b. lymphocytes c. blood plasma d. monocytes

1. **Transgenic animals have been used**

a. For testing the safety of vaccines b. For testing the toxicity of drugs

c. To produce useful biological products d. All the above

1. **Some of the steps involved in the production of Humulin are given below. Choose the correct sequence,**
2. Synthesis of gene (DNA) for human insulin artificially
3. Culturing recombinant E.coli in bioreactors
4. Insertion of human insulin gene into plasmid
5. Introduction of recombinant plasmid into E.coli

v. Extraction and Purification of recombinant gene product (humulin) from E.coli

A. i, ii, iii, iv, v B. i, iii, iv, ii, v C. i, iv, v, ii, iii D. i, iii, ii, v, iv

1. **Read the following four statements (a-d) about certain mistakes in two of them.**
   1. The first transgenic buffalo, Rosie produced milk which has alpha-lactalbumin enriched
   2. Restriction enzymes are used in isolation of DNA from other molecules
   3. Downstream processing is one of the step in rDNA technology
   4. Disarmed pathogen vectors are also used in transfer of rDNA into host

**Which of the two following statements have mistakes?**

A) b and c B) c and b C) a and c D) a and b

1. **Corn borers are controlled by**
2. CryIAb b. cryIAc c. CryIIAb d. Both b and c
3. **Some of the characteristics of Bt-cotton are**
4. Medium yield, long fiber and resistance to beetles.
5. High yield and production of toxic protein crystals which kill dipteran pests
6. High yield and resistance to bollworms
7. Long fiber and resistance to aphids

**29. The expression of a transgene in the target tissue is identified by a**

1. Transgene b. Promoter c. Enhancer d. Reporter

**30. Which bacterium is used in the production of insulin by genetic engineering?**

1. *Saccharomyces*
2. *Rhizobium*
3. *Escherichia*
4. *Mycobacterium*

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| --- | --- | --- | --- |
| **Sl.no** | Key answer | **Sl.no** | Key answer |
| **1** | B | **16** | D |
| **2** | B | **17** | D |
| **3** | C | **18** | C |
| **4** | A | **19** | D |
| **5** | C | **20** | B |
| **6** | C | **21** | D |
| **7** | D | **22** | B |
| **8** | C | **23** | B |
| **9** | B | **24** | D |
| **10** | D | **25** | B |
| **11** | B | **26** | D |
| **12** | D | **27** | A |
| **13** | D | **28** | C |
| **14** | C | **29** | D |
| **15** | A | **30** | C |