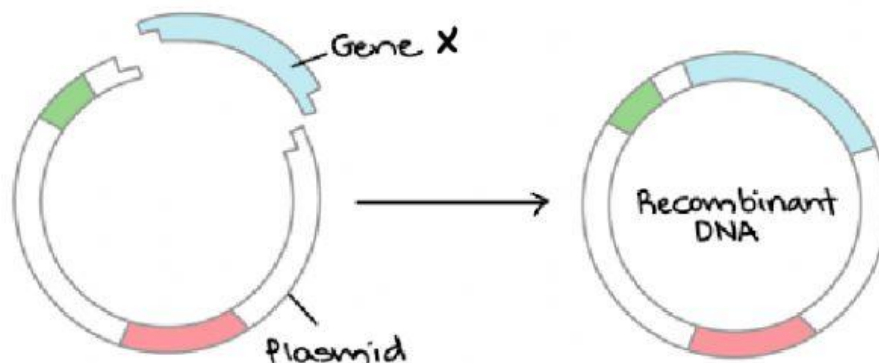


MODUL 1 BIOLOGY KUMPULAN PdPR

Minggu 1/1

- 1 Diagram 1 shows the technology called genetic engineering which is practised to produce insulin.
Rajah 1 menunjukkan teknologi yang dipanggil kejuruteraan genetik yang digunakan untuk menghasilkan insulin.



- (a) Explain the meaning of genetic engineering.
Terangkan maksud kejuruteraan genetik.
- [1 mark/markah]
- (b) Name the organ from which gene X is taken.
Namakan organ di mana gen X diambil.
- [1 mark/markah]
- (c) State one disease that is treated using insulin.
Nyatakan satu penyakit yang dirawat menggunakan insulin.
- [1 mark/markah]
- (d) Before genetic engineering was discovered, state two sources where insulin is obtained.
Sebelum kejuruteraan genetik ditemui, nyatakan dua sumber insulin ini diperolehi.

[2 marks/markah]

(e)

Gene X from humans is inserted into a bacterial plasmid. This bacterium will then be cultured extensively to produce insulin.

Gen X daripada manusia disisipkan ke dalam plasmid bakteria. Bakteria ini kemudiannya akan dikultur dengan banyak untuk menghasilkan insulin.

Based on the above statement, why is bacteria suitable to be used in genetic engineering techniques?

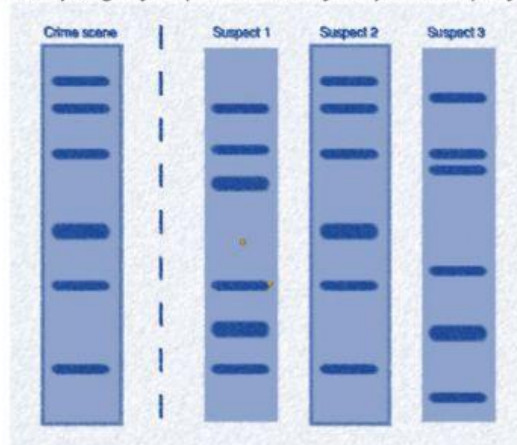
Berdasarkan pernyataan di atas, mengapa bakteria sesuai digunakan dalam teknik kejuruteraan genetik?

[2 marks/markah]

13.2) Biotechnology/Bioteknologi

2(a) DNA profiling has become very important in crime scene investigation. Diagram 2 shows the DNA profile found at the crime scene and the DNA profile of three suspects.

Pemprofilan DNA sangat penting dalam siasatan di lokasi jenayah. Rajah 2 menunjukkan profil DNA yang dijumpai di lokasi jenayah dan profil DNA bagi tiga orang suspek



(i) Explain what is meant by DNA profiling.

Terangkan apa yang dimaksudkan sebagai pemprofilan DNA.

[2 marks/markah]

(ii) Based on Diagram 2, who is the real criminal? Discuss your answers.

Berdasarkan Rajah 2, siapakah penjenayah sebenar? Huraikan jawapan anda.

[4 marks/markah]

- (b) State the applications of DNA profiling.
Nyatakan kegunaan pemprofilan DNA.

[4 marks/markah]

- (c) Explain briefly the steps involved in DNA profiling.
Terangkan secara ringkas langkah-langkah yang terlibat dalam pemprofilan DNA.

[10 marks /markah]