



Final semester examination of first semester 2016-2017

Answer five questions only

QI: Define the following terms. 12 marks

- 1- Cloning vectors 2- Cosmids 3- transformation efficiency
4- Incompatibility plasmids 5- Transgenic plants 6- DNA vaccine

QII: Does bacterial ColE1 plasmid replicate inside the bacterial cell? How? 12 marks

QIII: Match the item from column A which is most closely associated with an item in column B. 12 marks

Column A

Column B

1- Ampicillin (Amp)

A- Binds to 30S ribosomal subunit and inhibits protein synthesis; inactivated by a phosphotransferase

2- Kanamycin (Kan)

B- Inhibits bacterial cell wall synthesis; inactivated by b-lactamase, which cleaves the b-lactam ring of amp.

3- Neomycin (Neo)

C- Binds to 30S ribosomal subunit and inhibits protein synthesis; inactivated by a phosphotransferase

4- Tetracycline (Tet)

D- Binds to 30S ribosomal subunit and inhibits protein synthesis; tetr gene encodes a protein which prevents transport of tet into the cell

5- pBR322

E- Plasmid

6- Relaxed control

F- High copy number

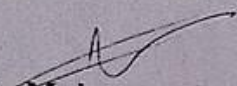
G- Low copy number


QIV: Illustrate the applications of plasmids in the different fields of Biotechnology. 12 marks

QV: Draw the life cycle of Bacteriophage lambda as a detailed diagram. 12 marks

QVI: Can you transfer a gene (X) from Citrus to Banana using *Agrobacterium tumefaciens* ? How you can do it in the lab? 12 marks

Best wishes


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