

The cell membrane is akin to:

1. A sealed plastic bag enclosing the cell
2. A fine sieve
3. A loose fence with security guards at the entrances

Option 1 is incorrect/the worst as it implies that the membrane is completely sealed off. Option 2 is correct as fine particles can pass through a sieve just like small molecules like gases can passively diffuse through the membrane, but it's more general than the correct option. Option 3 is the most correct. The loose fence allows things like small animals through but not people, similar to small molecules being able to diffuse through the membrane but larger and polar molecules being blocked. The security guard can selectively let in people, which normally cannot pass, similar to channel proteins in the membrane allowing the transport of things that can't diffuse through the membrane.

No outside sources were used as inspiration for this question.